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1 Executive Summary

1.1 Introduction

"Working with patients, staff and partners, we will use this exciting once-in-a-generation opportunity of investment through the Government's New Hospital Programme to improve how and where services are delivered, so that health and care services across Nottingham and Nottinghamshire are more joined up and accessible to all. We will put our hospitals at the forefront of healthcare research and innovation, and transform them into more efficient, greener environments."

(The Tomorrows NUH Vision)

We are delighted to respond to the opportunity that the Government's New Hospital Programme (NHP) creates invest in our City's acute hospital estate and in doing so enable a new model of care that will improve the health and wellbeing of people in Nottingham and Nottinghamshire.

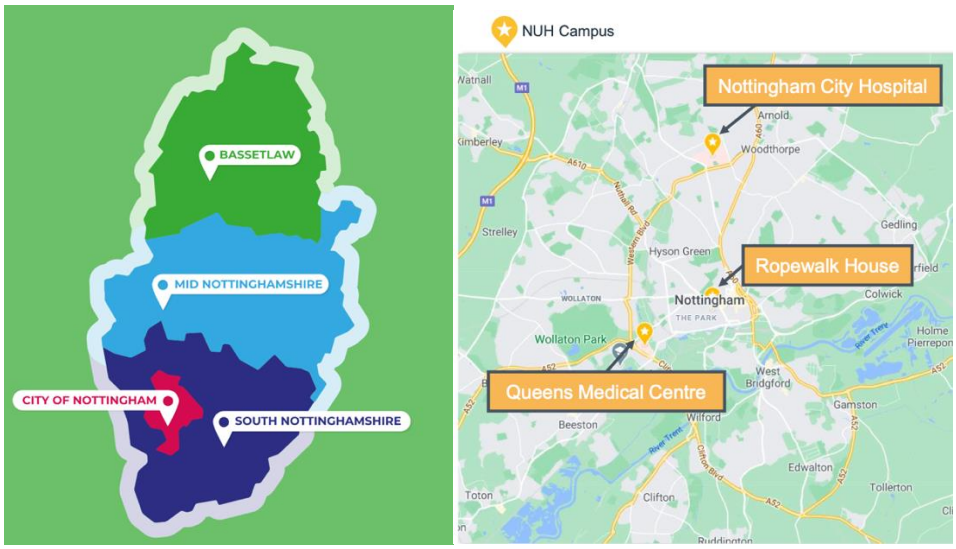
This pre-consultation business case (PCBC) is a critical step in achieving the essential service reconfiguration of acute hospital services delivered by Nottingham University Hospitals NHS Trust (NUH).

NUH is a provider of secondary and tertiary services, locally in Nottingham and for the wider region. It is now one of the biggest and busiest acute trusts in England, employing 17, 250 staff, with a budget of just over £1.5 billion, 98 wards, and 1,927 beds. It covers three sites, depicted in Figure 1 :

- Queen's Medical Centre (QMC): emergency department (ED), major trauma centre and the Nottingham Children's Hospital are located at QMC, as well as maternity, acute medical wards, healthcare of the older person and the treatment centre which provides day case and outpatient services. QMC is also where the University of Nottingham's School of Nursing and Medical School reside
- Nottingham City Hospital (City Hospital): predominantly includes the planned care of patients, and where some emergency admission units are located. This also includes the burns Unit, cardiac centre, critical care facilities and cancer centre. The City Hospital is home to the maternity hospital and several specialty departments, wards, and critical units in support of QMC
- Ropewalk House: provides a range of outpatient and screening services

The breadth of the area served by the Trust means that the scope of our proposal aims to improve health and wellbeing across Nottingham and Nottinghamshire.

Figure 1 Map of Nottingham and Nottinghamshire ICS and NUH sites



Our proposals are evidence based, drawing on best practice and system data to deliver our vision for the future clinical model of care. Health and care needs in the region are changing as people live longer, with multiple long-term conditions and growing health inequality. There is a complex map of different healthcare providers and local authorities working across the region. We need to deploy new ways of working as a system, utilise technology and leverage the potential of new hospital infrastructure to meet these needs and ensure we can continue to deliver quality care in the future.

We have developed this PCBC in collaboration with a wide range of stakeholders with appropriate governance in place to approve decisions. The PCBC is a technical evidence-based document that provides the Nottingham and Nottinghamshire Integrated Care Board (ICB) with the information required to assess the option for acute hospital configuration before taking it forward for public consultation. This PCBC will go onto form the basis of the strategic outline case (SOC) that NUH must prepare to apply for capital funding.

1.2 Engagement approach

We have carried out continuous engagement since the beginning of the TNUH programme to comply with our legal duty as an NHS organisation to involve patients and the public in the planning of service provision, the development of proposals for change and decisions about how services operate. This means we have sought representation from within NUH, with other NHS and non-NHS partners and with the citizens of Nottingham and Nottinghamshire.

Our engagement has adhered to our principles to consult whilst proposals are formative, provide information and time to enable intelligent consideration and response, and take consultation into account before making a decision on service change. By speaking with people from all backgrounds and leveraging a range of fora, including traditional engagement, virtual sessions and communicating via social media, we have made our engagement inclusive.

1.2.1 Engagement with patients and the public

The engagement has been conducted in the two phases so that issues could be flagged by stakeholders and be addressed in more detail as we shaped our proposals:

- Pre-consultation engagement phase 1: between 21st November and 15th December 2020, over 670 people participated in engagement on the initial model of care, including specific representation from special interest groups
- Pre- consultation engagement phase 2: between 7th March and 5th April 2022, over 1,940 people participated in engagement to identify the best possible configuration of services

There were seven key conclusions drawn from the engagement:

- The majority of participants were supportive of the overall proposals
- There is support to have emergency care services co-located, to allow patients access to relevant treatments whilst on-site.
- Travel, parking and access to public transport were consistent themes across the engagement.
- Patient choice was strongly reflected in public feedback, especially around the needs of women and families
- There was a mixed reaction to the prospect of more remote consultations and virtual appointments.
- There was support for the cancer care proposals. The majority felt that cancer care should be located in the hospital, co-located with specialist services on one site Participants were supportive of the proposals for elective care if it meant that operations would be protected

1.2.2 Engagement with Local Authorities and other key stakeholders

In addition, we have engaged with relevant statutory bodies such as the clinical senate and the City and County Council's health scrutiny committees (HSCs).

The HSCs are key stakeholders who have been engaged with the programme as it has developed through regular updates to Committee meetings which have also provided an opportunity for Councillors to facilitate links to their communities. The dates that the programme has interacted with the HSCs are as follows:

Presentation date	Engagement forum
17 September 2020	Nottingham City HSC
10 November 2020	Nottinghamshire HSC
12 November 2020	Nottingham City HSC
20 January 2021	Nottingham City HSC
26 January 2021	Nottinghamshire HSC

13 July 2021	Nottinghamshire HSC
15 July 2021	Nottingham City HSC
17 March 2022	Nottingham City HSC
29 March 2022	Nottinghamshire HSC
19 May 2022	Nottingham City HSC
14 June 2022	Nottinghamshire HSC
12 October 2023	Nottingham City HSC
17 October 2023	Nottinghamshire HSC
12 December 2023	Nottinghamshire HSC
14 December 2023	Nottingham City HSC

Figure 2 Local authority engagement

Both HSC's have been supportive of the developing proposals. They are keen to ensure that the engagement and ensuing consultation are inclusive of all of Nottingham and Nottinghamshire's communities, and have offered support to facilitate links through their networks as appropriate. Some of the key themes emerging from discussions at the HSC meetings are as follows:

- That travel and access to the hospital sites are carefully considered, particularly in relation to parking and access by public transport
- That engagement and consultation includes the range of community service providers as well as acute hospital staff, and that trade unions are involved
- That the developing proposals for Family Care are carefully managed alongside the work currently taking place to improve maternity services and the Ockenden review.
- That health inequalities are considered throughout the developing the proposals
- That, whilst the programme offers many opportunities to innovate and embrace new technologies, an over-reliance on digital provision could potentially lead to an increase in health inequalities.

The key issues have all been addressed through different means – for example through wider integrated care system strategies and aims, continued and targeted engagement efforts and specific programme plans. As a result, we have confidence of a strong basis for proceeding to public consultation.

1.3 Case for change

Our case for change has been developed with our clinicians. We have looked at current and future demand, dissected our current clinical models and synthesised the direction of travel across the Nottingham and Nottinghamshire health and care economy to understand areas

where we are not meeting the needs of our population and where we can improve quality and outcomes.

In particular, we have identified three main challenges with our main acute provider, Nottingham University Hospitals (NUH) NHS Trust:

- The clinical model and supporting estate are not configured in a way to address growing health needs and deliver quality care for the future.
- Some of our clinical services are not sustainable and do not consistently deliver best practice care. This is primarily because we have several services split across sites, duplicating finite resources and meaning that services are not optimally co-located.
- We have many ageing buildings that are expensive to maintain and are no longer fit for the purpose of providing modern healthcare.

1.3.1 We are not always meetings the needs of our population

We have an ageing population, many of whom live with multiple co-morbidities and experience high levels of deprivation. By 2035, the number of 65 to 85 year olds in Nottingham and Nottinghamshire will increase by c. 30% and the number of 85+ year olds will increase by c. 90%[1]. In Nottingham City we have some of highest levels of deprivation in England, with an Index of Multiple Deprivation (IMD) ranking that is 11th out of 317 districts. Evidence shows that episodes of hospital care can reduce independence and increase future care needs, particularly for the frail and elderly. In light of this we recognise the pressing need for a new model of care.

1.3.2 Our services are not clinically sustainable

The configuration of our hospital services poses a challenge to the safety and sustainability of our clinical care. Some of our emergency patients, those undergoing cancer treatment and women and babies must be transferred between sites to receive support from specialists in co-dependent services. Each year there are over 4,100 emergency transfers between the two acute sites and there are also approximately 150 high-risk women being transferred out of area each year.

For some specialties, working across both sites puts a strain on the workforce, exacerbating recruitment and retention issues. We currently run a maternity service across two hospital sites which creates duplication, competition for the same pool of staff and less-resilient rotas. Underlying staffing issues impact upon the quality of care we provide. Within our elective services, theatre staffing levels are a dominant constraint and have been limiting the volume of elective activity we are able to undertake with only 60% of patient are treated within the 18-weeks of referral compared with a target of >92%.

Our future proposals must address the three interlinked issues of access to interdependent specialties, inter-hospital transfers and workforce.

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1 https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/ageing/articles/livinglongerhowourpopulationischangingandwhyitmatters/2018-08-13

1.3.3 Our buildings are not suitable for modern healthcare

Poor quality estate has a negative impact on patient outcomes and experience. Our hospital estate is a critical rate limiting factor to our aspirations for a new care model to improve outcomes for patients. At NUH, the backlog maintenance costs are calculated to be £407.31m, of which 38% are critical and significant infrastructure risks (2020/21). Left unchecked these pose a risk to continuity of care and safety for patients and staff. 23% of the City Hospital site and the Ropewalk House building are older than the NHS itself (pre-1948) and are no longer fit for purpose. The ageing estate can compromise the care we are able to offer and we encounter multiple serious incidents, risks and other breeches that could cause harm to patients. These issues will continue to worsen in the medium-term and we need significant remedial action plus modern, fit-for-purpose infrastructure that will enable us to transform care.

It is the national New Hospital Programme (NHP) scheme investment that is providing us with a unique once-in-a-generation opportunity to invest in our services to improve health outcomes for our patients, improve facilities for our workforce and allow NUH to play its part in a high quality, sustainable, regional health service.

1.4 Vision and models of care

Our ambition is to transform health and care services, so that our neighbourhoods, places and system will seamlessly integrate to provide joined up care with every citizen in Nottingham and Nottinghamshire able to enjoy their best possible health and wellbeing. To support delivery of this ambition, clinicians from NUH and across the system have led the development of a clinical model for the TNUH programme. The model describes new ways of both configuring services and delivering care with the aim of delivering exemplar clinical outcomes, ensuring excellent patient and staff experience, and addressing health inequalities.

The clinical model of care is driven by the case for change which establishes the requirement to address local population health needs, provide clinically sustainable services and improve the quality of our ageing infrastructure.

1.4.1 Our clinical model of care

Our clinical model of care is comprised of three key areas of focus:

1. **Integrated care:** providing more joined up services has been identified throughout the engagement; collaboration with the wider system to optimise how and where services are delivered across Nottingham and Nottinghamshire will enable a more upstream preventative approach and improve access for patients.
2. **Population health**: we face an increasing demand and complexity of citizens' health needs, there are significant changes in treatments, technologies and the way care is delivered and ever-increasing financial pressures. Against this backdrop we must reduce health inequalities and improve patient outcomes.
3. **Local and specialist hospital services:** safe and high-quality care depends on the availability of interrelated services and a critical mass of activity; our hospital services will be configured to support best practice care pathways as part of the broader continuum of care.

Implementing our plans for integrated care will have an impact on how many people require hospital care in an acute setting. To calculate future bed requirements, we have considered the current strategies in place across Nottingham and Nottinghamshire and how these will mitigate future growth in demand, driven by regional demographic growth. As a result of these interventions, we expect we will require 213 additional acute hospital beds by 2030.

We believe our clinical model of care will improve the quality of our services, clinical outcomes and patient experience. It is expected to bring a wide range of positive impacts, including clinical, workforce, technology and estates benefits. The high level clinical model of care is summarised by six clinical design principles:

1. All care pathways should focus on integrated working with system partners to deliver appropriate out of hospital care including self-care and prevention.
2. All emergency secondary care services should be consolidated on one site where necessary dependencies are available 24/7
3. Elective care inpatient facilities and day case surgery should be delivered separate from emergency care in order to protect elective capacity, maintaining access to critical care.
4. All women's and children's hospital services should be consolidated and co-located with adult emergency care.
5. Cancer care hospital services should have access to critical care and all associated medical specialties. Elective and ambulatory cancer care will follow the respective elective and ambulatory clinical design principles
6. Ambulatory care pathways (outpatients and day cases) should be redesigned to minimise disruption to patient's lives, providing care in accessible locations whilst maximising the potential of new and emerging technologies.

The clinical model development has been overseen by a dedicated Clinical Advisory Group (CAG), bringing together leading clinicians from NUH and across the health and care system. In the development of the clinical model of care around 350 clinical stakeholders were engaged in the design process.

1.5 Options development and appraisal

To address the issues facing health and care services in Nottingham and Nottinghamshire, we propose reconfiguring hospital services and delivering new state-of-the art hospital estate. This would enable us to provide safer care for our patients, with cutting-edge clinical care, supported by a digitally advanced hospital, fully integrated with the wider health and social care system.

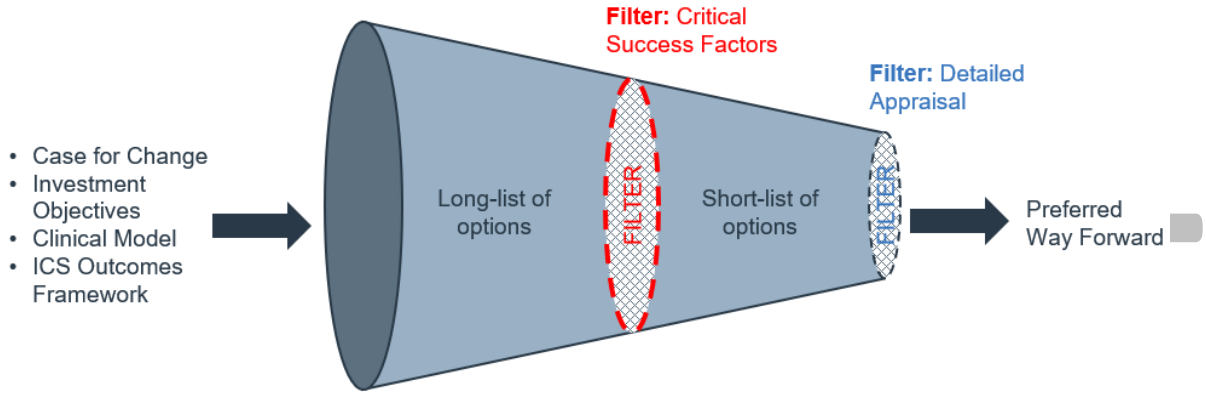
1.5.1 Our approach to appraising the options

We have developed and evaluated options to address the case for change and deliver the proposed clinical model of care. This process has complied with the HM Treasury Green Book approach and is set out in Figure 3. Notably, the timelines for the four workshops aligned to the two phases of pre-consultation engagement meaning that outcomes from the workshops could be tested with the public and stakeholders.

Figure 3 Options Appraisal Process

We undertook an extensive process to consider an exhaustive list of options. An options evaluation process was designed that enabled us to move through a filter 'funnel' from an initial possibility of a significant number of options down to a small number of options to undergo further analysis, before then agreeing the options that would go to consultation. The funnel approach is shown in Figure 4.

Figure 4 Filter approach to develop a preferred option for consultation



We first discounted any approach that would see services further split across more than two sites and looked only at options that would achieve the clinical design principles. The longlist options were all combinations of adult emergency care services, women and children's services, elective services, and cancer services. These could be distributed across a new site, QMC, City Hospital or Ropewalk House.

1.5.2 Application of the critical success factors against the long list

The longlist options were evaluated against the hierarchy of critical success factor criteria shown in Figure 5 on a pass/fail basis. Options were discounted as soon as they failed a threshold. This process excluded options based on the size of sites, ensured the option could deliver the clinical model of care and excluded entire new build options.

Figure 5 Critical success factor evaluation criteria

HM Treasury category	Critical success factor	Pass/fail threshold
Potential achievability	**Deliverability**	1a. Deliverable by target year of opening 1b. Makes best use of existing NHS estate 1c. Site locations must be able to deliver the required footprint and capacity

Strategic fit and business needs	**Strategic fit**	2a. Consistent with the ICS Clinical and Community Services Strategy 2b. Consistent with ICB (formerly CCG) and NHSE specialist commissioning intentions 2c. Enable delivery of Tomorrow's NUH clinical model of care and the clinical design principles 2d. Enable continued support of Nottingham Medical School
Strategic fit and business needs	**Care quality and patient experience**	3a. Supports improvement in service quality and safety from current levels 3b. Supports improvement in patient experience from current levels
Strategic fit and business needs	**Future flexibility**	4a. Can provide flexible capacity to meet forecast activity growth until [target year of opening +10 years] and respond to changing needs post Covid-19 and/or technological development in care delivery 4b. Align with workforce capacity to deliver future needs of the population serviced by Nottingham University Hospitals NHS Trust
Potential affordability	**Affordability**	5a. Capital investment must be affordable within the available capital envelope

At the conclusion of this process we were left with a shortlist of two reconfiguration options, plus a business as usual (BAU) and do minimum option, as shown in Figure 6. (The latter are included because the HM Treasury Green Book states that an appropriate counterfactual needs to be identified within the short list against which potential solutions can be compared in a capital business case,. It should be noted that BAU and do minimum would fail our critical success factor test).

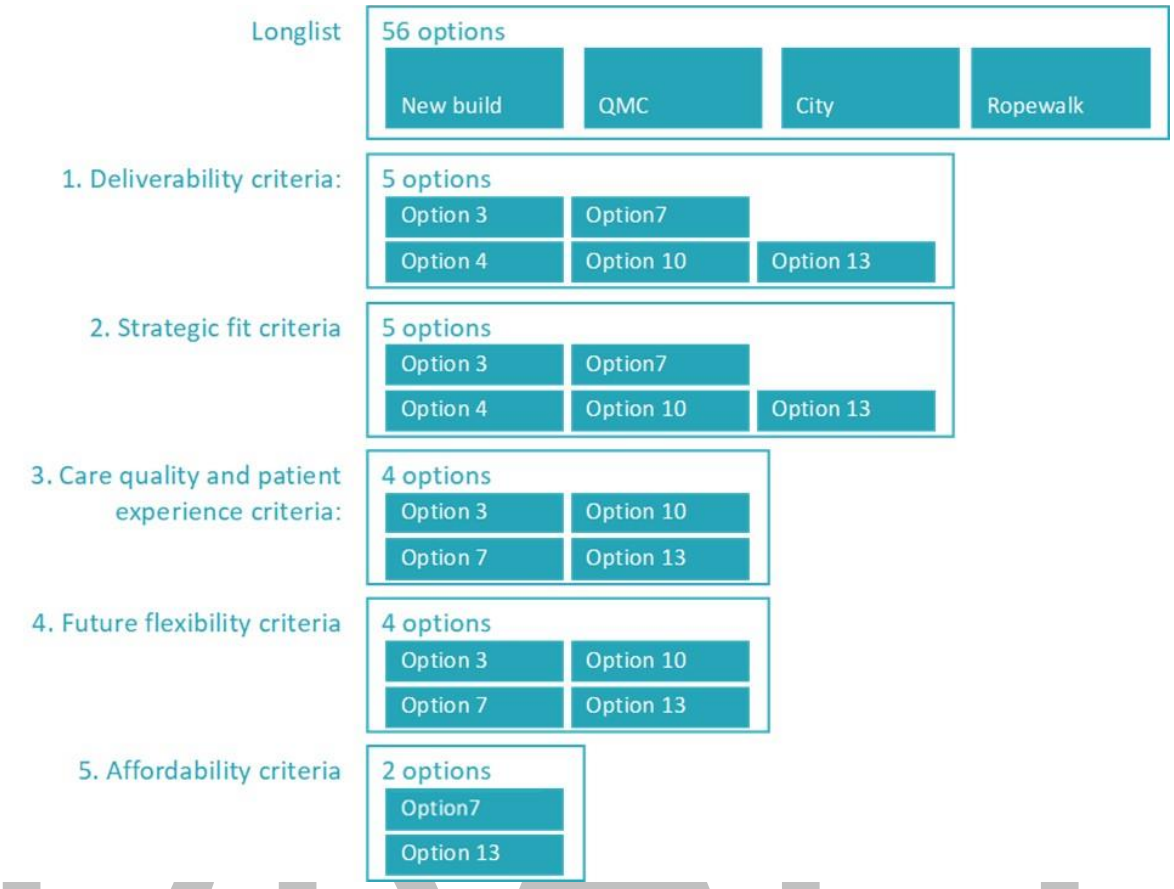
Figure 6 Shortlist options

Option #	Option title	Options specifics
1	Do nothing (BAU)	• Maintain existing buildings and services • Current arrangement to manage backlog maintenance (i.e. no major remedial work)

2	Do minimum	• Centralisation of maternity and neonates at QMC • Dilapidated estate would be resolved, with all poor or very poor condition areas returned to satisfactory or replaced • Reduction in risks to business continuity for clinical services through an investment in capacity through decant block and City wards project
7	Elective / emergency split site with cancer consolidated at City Hospital	• Women's and children's would be consolidated at QMC • Majority of emergency activity would be consolidated at QMC • Elective activity would be consolidated at City • Cancer services would be consolidated at City Hospital including emergency portal
13	Full elective / emergency split	Women's and children's would be consolidated at QMC All emergency would be consolidated at QMC including emergency cancer and all non-surgical cancer inpatients (elective and non-elective) Elective activity, including elective cancer surgery would be consolidated at City Hospital • Ambulatory cancer would span across both City Hospital and QMC

The result of each stage of the process is shown in Figure 7, excluding the BAU and do minimum options. The longlist category is presented as showing the potential sites for services to be configured. The full list of options can be found in Appendix 18.

Figure 7 Process of applying critical success factors



1.5.3 Assessment of the shortlist against the desirable criteria

We next evaluated our shortlist options, relative to one another, against twenty-two financial and non-financial desirable criteria aligned to the ICS system outcomes framework and our own investment objectives set out in the case for change. Undertaking this rigorous process provided a clear rationale as to the relative benefits of each option.

Key conclusions drawn from assessment of the non-financial desirable criteria were that:

- both of the 'do something' options (options 7 and 13) have clear advantages over the BAU / 'do minimum' against all criteria except access to services
- option 13 is expected to provide clinical benefits over option 7 – including quality, safety and experience, based on a greater separation of elective and emergency activity, co-location of emergency and emergency cancer and consolidation of emergency activity
- option 7 has a number of estates advantages over option 13. This is primarily driven by greater flexibility at QMC as there is slightly more space available on that site
- there are a number of areas to be explored further as the options are developed for the capital business cases, including helipad provision, car parking and reduction in backlog maintenance.

Analysis of the financial desirable criteria summarised in Figure 8 demonstrated that the cost differential between option 7 and 13 was marginal but that option 13 was most

advantageous in terms of benefit-cost ration (BCR) and net present social value (NPSV, both of which are important metrics for the business case.

Figure 8 Financial desirable criteria

	Business as usual	Do minimum	Option 7	Option 13
TOTAL VALUE (£m)	601	1,034	1,248	1,345
BCR	-	-	3.17	3.55
NSPV (£m)	-	(£530)	943	1047

1.5.4 Clinical Senate review of cancer

In parallel to the options appraisal process, we acted on recommendations from the second Clinical Senate which took place in April 2021 to provide further detail for the emergency care, cancer care and maternity clinical models of care. Further work to develop the cancer model of care suggested a need to review the conclusion of the options appraisal based on the adjacency requirements of haematology-oncology with medical specialties.

The findings within the review mean that **option 7 was judged not viable and was discounted from the shortlist of options**. This was for two reasons:

1. Clinicians did not consider it clinically viable to separate elective haematology inpatients from acute medical specialty care:
    a. These patients can become to get very sick, very quickly. Without on-site presence of other acute medical specialties (e.g. respiratory, neurology, gastro) it was not deemed to be clinically safe to deliver in-patient elective haematology care separate from the rest of emergency care.
    b. In order to maintain Joint Accreditation Committee ISCT-Europe & EBMT (JACIE) accreditation, NUH must deliver bone marrow transplants alongside a number of acute medical specialties. Without JACIE accreditation, NUH cannot apply for chimeric antigen receptor T-cell therapy accreditation which is recognised as a treatment strategy of great promise to improve outcomes for cancer patients. It is part of the NHS's plans to deliver cutting edge treatment and is an ambition set out in the NHS Long Term Plan.

2. It was not considered clinically viable to maintain elective oncology inpatient care at City Hospital if all haematology inpatient care was moved to QMC. This would leave oncology on the City Hospital site with elective surgery and some ambulatory cancer services. In order to ensure elective non-surgical oncology inpatients have access to specialist input and sufficient out of hours cover, it was agreed that all oncology inpatient care should also be consolidated at QMC along with haematology inpatients and the rest of the acute medical specialties, which was not the case for option 7.

1.5.5 Clinical prioritisation of the preferred option

In June 2021, the TNUH Programme was made aware of the New Hospital Programme's (NHP) requirement for agile schemes. Option 13 was originally considered to be within our affordability envelope of approximately £1.345bn. NHP advised that meeting these requirements for agile schemes would be essential for all future cohorts and that we should where possible include these requirements in our plans from the outset. On reviewing the capital costs, it became apparent that to achieve these standards, including the required reduction of critical and significant infrastructure backlog, net zero, patient flows, digital and patient experience/outcomes, the capital cost of option 13 would be c£1.7bn which means that option 13 is no longer affordable within the original capital allocation. However, Option 13 remains our long-term strategic ambition.

To address this we then carried out a clinical prioritisation exercise in October 2021 to revise option 13 in such a way as to preserve the optimal level of clinical transformation, whilst maintaining high quality, sustainable and patient focussed services, within the capital allocation. We focused on four key areas to assess options and maintain our alignment to the case for change and the long-term ambition of option 13:

- Priority is to address issues in each of the clinical areas, where possible
- The consolidation and co-location of services for women, children and families has been a high priority for the organisation for many years
- Elective capacity must be protected to prevent the surge of emergency activity into elective beds
- There is a dependency between haematology and oncology, and acute medical specialties

The conclusion of this work was to retain *some* emergency activity at City Hospital to reduce the level of capital investment required at QMC, this is referred to as option 13a. The proposed configuration is based on delivering the case for change and optimising the clinical model of care for burns, acute plastics and respiratory. A key driver in the consolidation of emergency services was to reduce the amount of inter-site transfers and given that respiratory activity accounts for 27% of the total, this approach was considered to be optimal.

Overall, option 13a makes significant improvements on the current number of inter-site transfers. By consolidating burns and acute plastics and respiratory at QMC, there would be 1,438 transfers required per year which is c.34% of the current total (NB. option 13 equates to 531 transfers per year). Other variations of option 13a were considered but failed to meet the case for change and critical success factor evaluation. To comply with programme governance, the long list of options was revisited and we judged that there were no other possible options that split the emergency care cluster which also met the CSFs or were affordable and deliverable, thus enabling them to be put to public consultation. Option 13a is summarised in the diagram below:

13a	**Partial elective / emergency split**	• **Women's and children's services would be consolidated at QMC** • **Increased range of emergency care specialties to be delivered at QMC including respiratory, burns, emergency plastics, emergency cancer and all non-surgical cancer inpatients (elective and non-elective)**

		• **Some emergency care specialties to remain on the City Hospital site, including cardiology.** • **Elective activity, including elective cancer surgery would be consolidated at City Hospital** • **Ambulatory cancer would span across both City Hospital and QMC** • **Oncology and haematology would be delivered from the QMC to ensure access to emergency services and critical care**

At the end of the 22/23 financial year, NUH purchased a small parcel of land next to QMC and directly adjacent to car park 2. The purchase of this land was made on the basis of providing short term solutions to multiple current demands on the site for non-clinical services and staff parking as well as providing future flexibility for contractors compounds as NUH continues to develop the site. Our assessment of this land, supported by Architects and Quantity Surveyors is that it is not suitable for the delivery of any of the clinical proposals and therefore does not alter our preferred way forward.

During the creation of this business case, the University of Nottingham indicated that they might wish to relocate the Medical School and relinquish the current building on the Queen's Medical Centre campus. Our assessment supported by architects and quantity surveyors is that whilst this may be an opportunity as a future base for some of our non-clinical services, the costs associated of repurposing the building for clinical use would be prohibitive and therefore whilst we intend to keep any opportunities in mind as the University develop their thinking, this potential development does not alter our thinking in terms of the ideal configuration of clinical services.

1.6 Option(s) for consultation

We are proposing option 13a for public consultation as this is the only deliverable option that we have identified within the capital envelope of £1.345bn. We expect option 13a to bring a wide range of positive impacts and benefits over the long-term. The wider impacts of the option have been considered through an integrated impact assessment which highlights how the option affects clinical considerations, access and transport, other providers, the environment and inequalities.

Within our pre-consultation engagement, which set out option 13a, 78% of the people we surveyed in March 2022 either strongly or somewhat supported the overall proposal. This provides a strong foundation for our proposals, which we have refined through our clinically led options appraisal process.

1.6.1 Integrated Model of Care

A crucial element of our proposed clinical model is the expansion of care outside of hospitals to address the growing health needs in our population. The case for change indicated that our current clinical model is ill-equipped to meet the needs of an ageing population, the proliferation of long-term conditions and health inequalities across Nottingham and Nottinghamshire.

Our clinical model of care adopts an integrated care approach based on the Integrated Care System's (ICS) Clinical Community Services Strategy (CCSS). Future care strategies are defined in terms of urgency and location, so that acute hospital provision is integrated with neighbourhood and home treatments. New models of care, supported by technology and

workforce, would enable us to increase the range of service provided to patients in their home. This includes expanding rapid response and single point of access (SPA) services, personalised care plans, and virtual services across the pathway.

This would be underpinned by a population health management approach which would allow us to look across the system at how services are provided and identify opportunities to add value, improve outcomes, eliminate duplication and reduce costs. Our approach would utilise a wide range of experts to understand our population's current needs, activity, cost and outcomes. This would enable the redesign of standardised, evidence-based pathways, targeted relative to the level of need.

1.6.2 Hospital Care

Our future proposal for hospital care would provide greater consolidation of services, to improve outcomes for patients, meet quality standards and address some of the severe workforce pressures we face. We propose:

- a greater consolidation of emergency activity, addressing particularly those specialties where there are high numbers of patient transfers and where interdependent services are not available on the same site;
- The co-location of all services for women, children and families to meet the service specification for maternity, reduce the reliance on high-risk patient transfers and create a cohesive single department that is an attractive prospect for staff;
- To facilitate a multi-disciplinary model for cancer care by co-locating oncology and haematology with emergency care services and streamlining access to treatment and diagnostics at City for elective cancer care;
- To provide more one stop shop clinics, virtual consultations and care closer to home within our outpatient services so that we can make every contact count;
  To separate planned surgery from emergency care in order to protect elective care from emergency pressures As a result of these proposals, we will:
- Improve outcomes by consolidating acute inpatient services with improved clinical adjacencies and patient pathways
- Enhance the patient experience by providing improved healthcare delivery in safer environments
- Give staff an improved working and learning environment
- Improve efficiency in service delivery through an estate which is smaller in size and better planned, through removing duplication.
- Reduce backlog maintenance bringing the estate closer to current and acceptable national guidelines and standards.
- Develop new, state-of-the-art, digital hospital infrastructure capable of supporting new models of care.

1.6.3 Impact of the option

An integrated impact assessment (IIA) was commissioned to evaluate the impact of option 13a. The IIA is an iterative process and the assessment has been updated throughout the planning period by an independent provider to ensure rigor and provide impartiality in relation to the proposed service change options. The report sets out an assessment of the

potential impacts which may be experienced as a result of the proposed changes to healthcare services across Nottingham and Nottinghamshire and, in line with commissioners' public sector equality duty, helps to ensure that genuine consideration is given to equality as part of the decision-making process.

The impact assessment considers the impact in four key areas. Where potential negative impacts have been identified, we have sought to mitigate these within our proposal:

1. Quality and outcomes
2. Access and travel
3. Other providers
4. Sustainability

By paying due regard to the findings of the IIA in our decision-making, we will be compliant as commissioners with the *Public Sector Equality Duty* (PSED) under *section 149* of the *Equality Act 2010*, and the duties to reduce inequalities under *s.14T of the National Health Service Act 2006.*

1.6.3.1 Health Impact of the option for consultation

There are numerous positive impacts on quality and outcomes for each of the clinical areas, which have been affirmed by clinicians:

- **Emergency care** – consolidating related emergency care services at QMC will reduce the number of inter-hospital transfers, by c.2,900 and improve patient flow which will reduce bed pressure and allow patients to be admitted more quickly. Variation in quality, safety and outcomes for patients requiring emergency care will be reduced as there will be increased access to sub-specialist opinion due to co-location with interdependent specialties at QMC. There will be increased opportunities for emergency physicians to develop new skills and implement new treatments with increased opportunities for collaborative working and cross-specialty learning. The IIA has shown that these benefits will impact most on deprived and elderly populations. (The over 65 population use emergency care services with an average of 261 spells per 1,000 population in the 2018/19 year, compared to 57 per 1,000 for under 65s).
- **Family care** – consolidating maternity and neonatal services onto a single site will increase access to specialists and midwives. Currently we transfer on average c.150 high-risk women out of area due to a lack of capacity and the future model will improve quality of care and patient experience. Co-location of maternity services with paediatric and emergency specialist services will enable timely access to specialist paediatric and general surgery and improve outcomes. Improvements in the quality of maternity services will have the greatest proportional benefit to Black, Asian and Minority Ethnic (BAME) / other and deprived populations. (The BAME and other population had 19 births by 1,000 population in 2018/19, compared to 7 for the white population).
- **Elective care** – separating elective and emergency care will protect elective capacity, reducing cancelled operations thus improving access. This also improves patient experience, as does being treated in a fit for purpose facility with best practice enhanced post- operative recovery in a dedicated unit.

- **Ambulatory care** – providing ambulatory care in accessible locations will ensure every contact counts and minimise impact to patient's lives through one-stop-shop clinics. This will improve access, provide more flexible care and reduce DNA rates. The impact of ambulatory care provision will also support development of integrated care pathways through improved ability of patients to self-manage, with access to care and advice when needed, as well as provide a holistic approach to care with a focus on the pre and post hospital experience.

1.6.3.2 Impact on travel and access

The travel element of the Integrated Impact Assessment identified the following in terms of the option 13a:

- There is limited increase in average travel times for peak, off-peak and public transport for emergency care services, with up to 4 additional minutes, on average.
- There is limited increase in average travel times for peak, off-peak and public transport for maternity services with up to 6 additional minutes on average.
- There is limited increased in average travel times for peak, off-peak and public transport for elective services, with up to 11 additional minutes, on average, for options where elective services are consolidated at City Hospital and 6 minutes at QMC.

Access was also assessed with respect to specific protected and minority groups to determine the impact on health inequalities. Overall, this showed limited impact on the access to services for groups with protected characteristics:

- Neither male nor female populations are disproportionally impacted for peak, off-peak or public transport
- The elderly population is not disproportionally impacted for peak, off-peak or public transport
- Current travel times for BME and other populations are shorter than for the white population and remain so if maternity services move to QMC, but the percentage increase in travel time is slightly greater for all transport methods for these groups
- Current travel times for the most deprived populations are shorter and remain so if maternity and emergency care services move to QMC, but there is a slightly higher percentage increase in average travel time compared to the general population for all transport methods

The consolidation of services within new estate which improves adjacencies between departments and a greater use of digital infrastructure would also improve access for people with long term conditions, disabilities and mobility issues.

1.6.3.3 Impact on other providers

The integrated impact assessment (IIA) included analysis on the potential impact on neighbouring providers. These impacts were tested with other providers in May 2021. The main impacts are:

- Non elective inpatient spells - In option 13a, most non-elective inpatient spells will be located at QMC. This may lead to more patients travelling north to King's Mill Hospital, Chesterfield Royal Hospital and Lincoln County Hospital

- Maternity births - In option 13a, all maternity services will be located at QMC. This may lead to some expectant mothers with routine pregnancies going north to King's Mill Hospital
- Elective care - It has been assumed that elective activity across QMC and City Hospital will remain the same, regardless of where services are located in each option
- Ambulance services – the main impact on ambulance services is likely to be around potential flows of patients to and from providers outside NUH, however inter-hospital ambulance transfers would decrease from the current numbers which are approximately 400 ambulance transfers each year from City Hospital to QMC and approximately 1,250 ambulance transfers from QMC to City Hospital

We have carried out direct engagement with other providers through the Strategic Oversight Group (SOG) and more recently the Programme and Partnership Board, which superseded SOG in September 2022. The conversations regarding possible impact on other providers will continue as we progress the plans.

1.6.3.4 Impact on sustainability

The IIA also considered the potential social, economic and environmental impact of the programme to understand, identify and act to reduce and limit negative impacts of the programme on the environment. The carbon emissions associated with travel will slightly increase for all services under all options due to travel distances being longer. However, the changing ambulatory care model which would see more services provided in the community and where appropriate, more virtual consultations, is expected to contribute to reducing this impact.

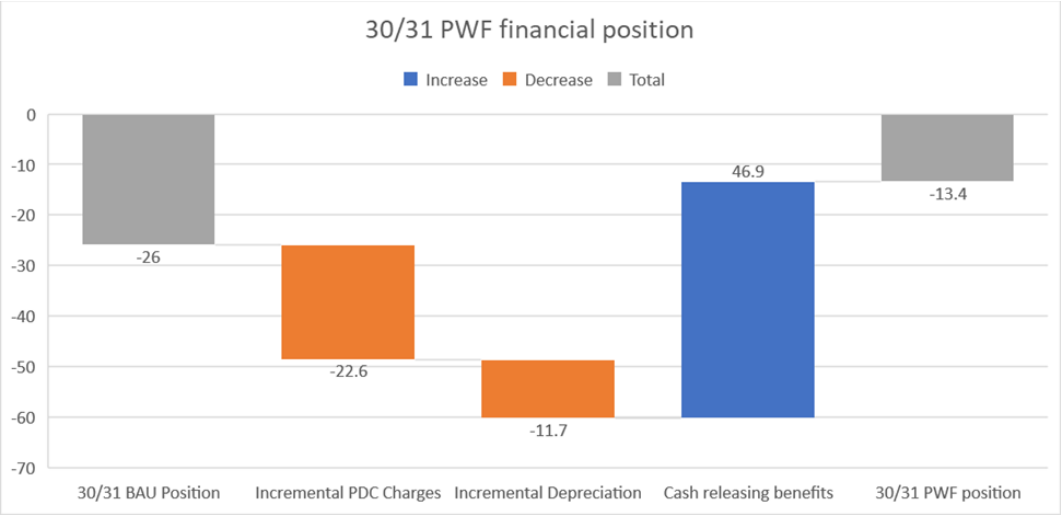
1.6.3.5 Impact on digital exclusion

Digital exclusion is an important topic when considering our future proposals. We analysed internet usage across Nottingham and Nottinghamshire and identified areas where digital platforms may not be an appropriate solution to mitigate reduced physical accessibility. Consideration is being given to alternate routes of public transport for these populations, and we are further considering approaches to reduce digital exclusion within the NUH digital strategy.

1.6.4 Financial Impact

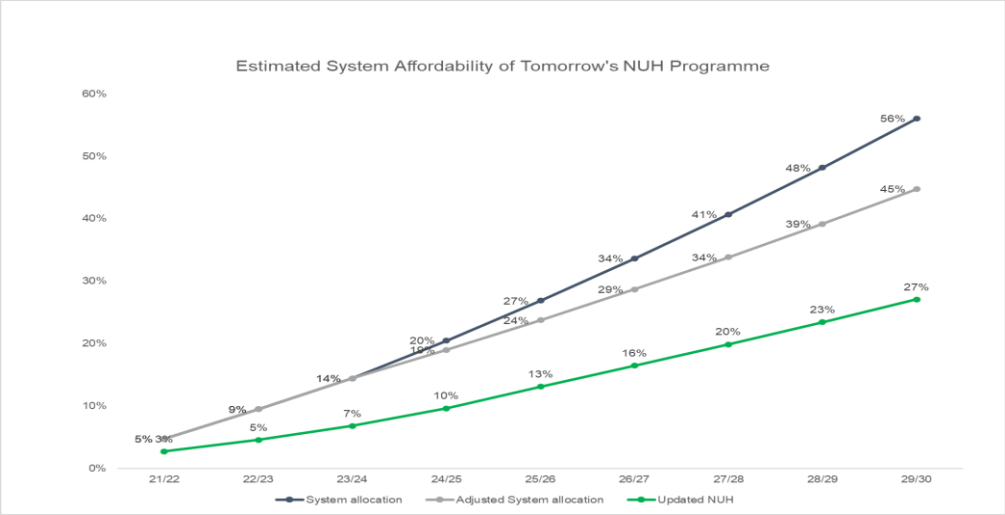
Our preferred option 13a provides a significant improvement in NUH's income and expenditure compared to business as usual (BAU). Based on the 2019/20 underlying position, NUH's BAU position is expected to be in a recurrent deficit of £26 million by 2030/31 whilst spending on the capital needed to keep the estate running. Figure 9 shows that option 13a is expected to improve NUH's income and expenditure by some £12.6m recurrently. This improvement is driven by the benefits, revised asset lives for business as usual and option 13a capital.

Figure 9 Option 13a financial position in 30/31



1.6.4.1 System Affordability

System affordability analysis suggests the income growth allocated to NUH (c2.7%p.a.) is below the likely system growth allocation (c. 4% p.a.) suggesting the model is affordable whilst helping to support a greater allocation of growth funding to system priorities.



1.7 Enablers

There are key enablers which are vital for implementation of option 13a, which have been considered in the planning and impact of the option for consultation. These are:

1. Workforce,
2. Digital
3. Estates and sustainability.

1.7.1 Workforce

Workforce underpins the delivery of our plans for the Tomorrow's NUH programme, and our planning seeks to ensure a robust workforce with the appropriate skills and sufficient volume to deliver our aims. Our 'People Plan' and workforce planning process sets out the steps to do so. We would use the Tomorrow's NUH programme to realise opportunities across seven key areas:

Area	TNUH Impact and opportunity	Workforce Impact
Health and wellbeing	The programme gives the opportunity to provide a new working environment and ensure clinical and office work space is fit for purpose	Reduced staff turnover and sickness absence
Culture and leadership	The changes from the programme would see change for staff in terms of their working practices and experience of NUH, a supportive culture with strong and consistent leadership is vital	Staff who feel supported and empowered to engage with managers in the Trust about the change and how they deliver care
Learning and education	The vision for the programme is to address the current issues with the learning and education environment which are few, small and poorly accessible, into local learning hubs, dedicated standalone centres with classroom, clinical skills and simulation areas.	Fit for purpose physical and digital learning environments to ensure a staff base who are continually learning and refining their skills and knowledge
New ways of delivering care	The programme seeks to deliver new approaches to care through virtual attendances, development of new roles and skillsets, a more codified split between acute and elective activity and new estates	More opportunities to broaden the workforce and create new opportunities for health professionals and new workforce models
Flexible working	There would be increased co-location of relevant services resulting in a more efficient model from removing duplication within Obstetrics, Maternity and neonates • Neonatal consultants – current plans are to increase from 15 whole time equivalent (WTE) to 25 WTE; consolidating onto one site would reduce the required staff to 20 WTE • Neonatal middle grades – 2 WTE additional junior middle grade doctors were required to meet the requirements of the junior doctor contract; consolidation would avoid this and remove the need for one further post	Rota efficiencies and more flexibility for individuals and between teams

	• Obstetric consultants – 2 WTE additional posts are required to deliver overnight and weekend cover, which would be reduced by 2.1 WTE upon consolidation • Obstetric middle grades – there would be a 9 WTE reduction upon consolidation assuming requisite cover provided by obstetrics and gynaecology consultants • Selected midwifery posts – leadership posts are under review with expected benefits upon consolidation	
Equality and diversity and inclusion	Developing new services and redesigning services would take into account ways of working and the needs of all diverse groups and communities that we serve and who work for us	Staff, patients, volunteers and carers who feel welcomed and valued
Growing and retaining the workforce	Improved estates and specific recruitment approaches would be central to the TNUH programme. Additional elements of the programme such as increased working with academic partners, increased learning opportunities, increased access to research and innovation and the elective/acute split would act as draws for potential recruits. The impacts of co-location would also reduce areas of investment needed to meet specific standards	Increased recruits and reduced turnover (anticipated reduction of 10% - 17.5% modelled as an impact of the programme)

In order to deliver the ambitions of the People Plan and realise the positive impacts, workforce planning for NUH will be underpinned by data and implement an evidence-based methodology. This work is being planned but will utilise information from the changes to clinical pathways and service transformation. This will expose workforce vulnerabilities within services where there is an over reliance on certain groups.

The workforce planning process will also focus on transformation and consider how new ways of working and flexibility in resources can ensure sustainability and meet changes in services and new clinical pathways as well as planning for increased 7 day working. In addition, key elements to workforce planning will centre around optimisation of relationships with local universities and educational providers, as well as international recruitment. More detailed workforce planning is due to take place during subsequent stages of the business case development, notably the outline business case. The programme has also forged a strong good link with Health Education England who have provided feedback on the workforce plans as they are developing, and will continue to link with their transformation leads as the programme continues to develop.

1.7.2 Digital

Ensuring the appropriate level of digital maturity to achieve the aims of both the Tomorrow's NUH programme as well as support the wider integrated care system (ICS) vision is being addressed with a dedicated strategy. There are two strategies which feed into the how we meet our digital aspirations – the wider Nottingham and Nottinghamshire Integrated Care System (ICS) data, analytics, information and technology (DAIT) strategy, and the Tomorrow's NUH Digital strategy:

- **Data, analytics, information and technology (DAIT) strategy**: the strategy sets out what success would feel like for people across Nottingham and Nottinghamshire. The strategy focuses on providing skills and training, reducing digital inequalities, and providing secure digital health services to improve access for patients and make work easier for our staff. In parallel, 'Get Nottinghamshire Connected' supports the most excluded people across the city and county to gain the essential skills and confidence they need to start using technology and get connected.
- **Tomorrow's NUH digital strategy:** we have reviewed the current digital position , the capabilities, the gaps and what we should aspire to in terms of the New Hospitals Programme (NHP) digital blueprint, the NHS Long Term Plan, and what good looks like. We have developed a visionary blueprint which outline key technologies in terms of fabric, footprint and flow across the short, medium and long-term. These have been translated into our digital roadmap which promises to improve patient experience and achieve better health outcomes through investment into digital over the next three years.

Within the context of option 13a, our approach to digital would allow us to deliver more efficient and targeted care and provide patients with more ownership over their own care.

1.7.3 Estates

Finally, investment in new and up to date buildings means our infrastructure and environment is at its most optimum to deliver our proposed option, allowing outstanding care to be delivered, improving both patient and staff experience, while also addressing long term backlog maintenance costs and aligning how we deliver services with wider sustainability agendas.

Construction of new buildings and refurbishing existing estates would provide the opportunity to adopt features which would improve the efficiency of buildings and improve care. Our plans for new estate would significantly reduce backlog maintenance and are designed to:

- Maximise buildings to meet the ambitions of the digital strategy and creating a 'smart healthcare buildings'
- Meet the need for relevant clinical adjacencies in design
- Ensure infrastructure is future proofed for sustainability and efficiency
- Meet the ambition within the travel plan for sustainable modes of transport and improving access and parking within NUH, specifically through a NEW multi-storey carpark at QMC

Ensuring Nottingham University Hospitals NHS Trust (NUH) is sustainable moving into the future is also a key priority, and links in with how we address estates as an enabler in the Tomorrow's NUH programme. The NUH Green Plan 2022 – 2025 ties in with the estates strategy which outlines what is required to achieve Tomorrow's NUH. In order to ensure our buildings are net zero carbon we would:

- **Reduce construction impacts**: an initial assessment of carbon limits was completed in June 2022 and construction would be designed to minimum construction impacts
- **Reduce operational energy use**: designing the buildings to reduce operational energy use, where possible, and publishing annual energy consumption targets and actuals
- **Increase use of renewable energy**: by producing energy on-site (for example, solar panels), where possible and using renewable energy sources where on-site production is not possible
- **Off-set carbon**: as a last resort, off-setting any remaining carbon and publishing the amount of off-setting on an annual basis

1.8 Benefits

The proposed new clinical model, combined with the opportunity of significant capital investment from the New Hospital Programme, is expected to deliver a wide range of positive benefits. These benefits will be felt and experienced by patients, staff, and the communities we serve. We expect the new clinical model and the much-needed investment in estate to be a strong component of the future Nottingham and Nottinghamshire health care system.

1.8.1 Benefits framework

We have developed a benefits framework aligned to the three areas within our case for change:

- Care to meet the needs of the local population
- Services which are clinically sustainable
- Up to date estates and buildings which are fit for purpose

This framework will improve understanding of what will be achieved by the proposed changes and enable us to measure improvements from the programme. This incorporates high-level benefits, benefits directly associated with our model of care, and more granular benefits against which we have calculated the net present social value (NPSV) and benefit cost ration (BCR) for option 13a.

1.8.2 High level benefits

The high-level benefits focus on care delivered in the right place and at the right time, a high quality workforce that can deliver the best possible care, a new clinical model that will enable us to better meet national clinical quality standards, and buildings that will not only support the new clinical model of care but will also be more efficient to run and better places to work. These are translated across to our clinical model of care, for example in our maternity model, consolidation of women's and children's care at one site allows both efficient and resilient rotas with increase consultant cover and improved training and

supervision for staff, as well as access for women and babies to the specialist input they need.

1.8.3 Benefits of the proposed models

The more granular benefits for each of our proposed areas of change are defined in terms of community and reconfiguration, wider economic, safety, clinical, workforce, income and buildings. We have calculated both non-cash releasing and cash releasing benefits and the overall scheme achieves a 3.55 incremental BCR.

We will ensure strong clinical leadership to carefully manage and measure how these benefits are achieved. . This will be based on outputs e.g., reduced average lengths of stay) and expected outcomes (e.g., reduced disability). A pragmatic list of measurable performance indicators will sit alongside the benefits outlined in the benefits framework. These will begin to be realised once we commence implementation and will be maximised after the plans are fully implemented.

1.9 Quality assurance

We have undertaken a robust quality assurance process which underpins the programme. The process has been reviewed by NHS England on the understanding that proceeding to public consultation is dependent on NHSE being assured.

Our proposals have been independently reviewed by the East Midlands Clinical Senate who provided us with feedback on three occasions, and we have acted upon this feedback and built into this business case. This has helped to guide our work as it evolved through the case for change, clinical mode of care and options appraisal.

1.9.1 NHSE 5 Tests

The programme has met the five tests for reconfiguration set out by the Secretary of State:

- **TEST #1**: The proposed change can demonstrate strong public and patient engagement.
    - We have had early and continual involvement with patients and the public via our communications and engagement workstream. Our materials have been tailored to meet the needs of the audience and ensure participation.
- **TEST #2**: The proposed change is consistent with current and prospective need for patient choice
    - We have ensured that our proposals maintain choice of services as per the NHS Choice Framework for planned care and maternity services; within emergency care we are working closely with East Midlands Ambulance Service, to ensure the plans are deliverable from an ambulance service perspective.
- **TEST #3**: The proposed change is underpinned by a clear, clinical evidence base.
    - We developed six clinical design principles through clinical workstreams to reflect best practice clinical care, which were tested with our clinical advisory group; the East Midlands Clinical Senate provided a source of independent, strategic advice and guidance throughout the process
- **TEST #4**: The proposed change to service is owned and led by the commissioners.

    - We have led the development of the PCBC and have been part of the TNUH governance structure
- **TEST #5**: Proposals including significantly reducing hospital bed numbers will have to
    - *The proposed service change will not reduce hospital bed numbers and therefore the conditions set out by this test do not apply. Over the course of the programme the total bed stock is planned to increase to 2140 by Year 10, at no point in this plan will the total beds offered by NUH decrease, despite the implementation of efficiencies and activity mitigators.*

In addition, assurance has been received from engagement with the New Hospitals Programme, patients through Healthwatch Nottingham and Nottinghamshire, and staff and programme partners through the Strategic Oversight Group (superseded by the Programme and Partnership Board).

1.9.2 Approvals Process for the programme recommendations

In line with the established programme governance, the approvals process for the PCBC is:

- the TNUH Clinical Advisory Group, Finance, Estate and Activity Advisory Group, Equality, Engagement & Comms Group, and the PCBC production group have ratified the information that has formed part of this document before being submitted to the TNUH Programme and Partnerships Board
- the Nottingham and Nottinghamshire Integrated Care Board have reviewed this document and submitted it to NHS England for assurance
- this document will form part of the strategic outline case for capital approval, which will be submitted to the New Hospital Programme (NHP) within the Department of Health and Social Care (DHSC). Approval to proceed to consultation will be required from the New Hospital Programme investment committee in addition to successful 'Stage two' assurance from NHS England
- a recommendation will be made to the Nottingham University Hospitals NHS Trust Board for discussion, assurance, and support
- after assurance, a decision whether to proceed to consultation will be made by a meeting in public of the Nottingham and Nottinghamshire Integrated Care Board.
- The HSCs for both City and County will be notified of the intention to proceed to public consultation

1.10 Plan for consultation

Alongside clinical and financial considerations, the feedback from stakeholder engagement informs the development of a final set of options. To ensure that the proposals consider the views of all stakeholders, the options will be put forward to the citizens of Nottingham and Nottinghamshire in a formal public consultation.

We have created a comprehensive and robust consultation plan, highlighting the approach that we will use for consultation, and the stakeholder mapping, activity, and channels that we will use to ensure we inform and actively engage with a diverse range of audiences and stakeholders.

The overall management and delivery of the consultation will be undertaken by the integrated care board (ICB) internal communications and engagement team. It will be undertaken in line with the legal duty on NHS organisations to involve patients, staff and the

public. The aim of this consultation exercise is to deliver best practice activity over a 12 week time period, with a target of 10,000 responses. The current potential timing for the consultation is based on running the consultation from autumn 2023.

The high-level objectives are:

- To describe and explain the proposals for Tomorrow's NUH
- Ensure that consultation activity is transparent and meets statutory requirements and best practice guidelines
- Undertake significant and meaningful engagement with local stakeholders, building on the findings of previous pre-consultation engagement activity
- Clearly articulate the implications, impact and benefits of the proposals
- Create a thorough audit trail and evidence base of feedback
- Collate, analyse and consider the feedback we receive to make an informed decision

Our plan builds on extensive engagement with staff, stakeholders, patients, carers, and local communities over the pre-consultation engagement. Key elements of the plan include:

- Develop a core consultation document and supporting materials to explain why change is needed, what the proposals are and what benefits they will bring for patients, as well as how the proposals, if agreed, might be implemented
- Develop a bespoke web presence for the consultation, acting as a one-stop- shop for all consultation materials and information
- Develop a communications and engagement activity plan which will encompass on-line and off-line activity to maximise the opportunities for public, patient and staff participation in the consultation
- Produce online questionnaires and hard copies, stakeholder briefings and other press releases to allow people to feedback
- Agree a system-wide panel of speakers and presenters for to be part of a seamless team that could step into any public event

This plan has been set out to ensure maximum participation and reduce risk of exclusion. This is articulated in our risk register, alongside other key risks. We have noted how we will mitigate these risks, including a plan for different methods of engagement that will be used to ensure accessibility.

Crucially, we set out how we have made a plan to capture feedback and analyse response. Throughout the consultation period we will monitor responses to identify any demographic or other trends which may indicate a need to adapt our approach regarding consultation activity or refocus efforts to engage a specific group/locality. In line with best practice for a consultation of this nature we will commission an independent research/engagement organisation to analyse the responses and produce a non-biased objective report summarising all feedback.

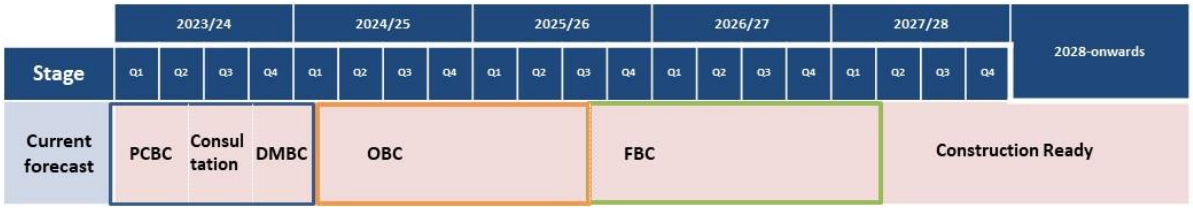
1.11 Implementation planning

We have developed high level implementation plans for our proposed option for consultation for both QMC and City hospital sites. Pre-consultation activities and the next stages of the business case process (i.e. decision making business case, outline business case and full business case) would be completed by end of 2027. We have developed high level implementation plans for both QMC and City Hospital and have considered key

implementation enablers including project management, governance, finance, and stakeholder engagement. High-level risks to implementation have also been considered and a mitigation plan is in place.

A high-level implementation plan in Figure 10

Figure 10 High level implementation plan



1.12 Next steps

Following consultation, all the responses will be collated and taken into consideration. The business case will be updated into a full Decision-Making Business Case before any final decisions are made. There will also be an independent report compiled on the consultation responses. We expect a final decision on service change to be made on (PLACEHOLDER: pending completion of NHSE assurance) by the Nottingham and Nottinghamshire integrated care board.

The rest of this Pre-Consultation Business Case, will describe in detail the key elements outlined in this executive summary.

2 Introduction and background

This chapter describes the overall scope and purpose of the PCBC for the TNUH programme. We are happy to respond to the NHP opportunity to address the ageing infrastructure across our hospital estate and enable a new model of care that will improve the health and wellbeing of people in Nottingham and Nottinghamshire. This pre-consultation business case (PCBC) is a critical step in achieving service reconfiguration of acute hospital services delivered by NUH. . This is in the context of wider system transformation for other acute, community and mental health providers in Nottingham and Nottinghamshire. The Integrated Care System (ICS), which is the system bringing together all the health and care organisations in the area, has several priorities within this realm.

NUH is a provider of secondary and tertiary services, locally in Nottingham and for the wider region. It is now one of the biggest and busiest acute trusts in England, employing 17,250 staff, with a budget of just over £1.5 billion, 98 wards, and 1927 beds. It covers three sites, depicted in Figure 1 in the context of the region:

- Queen's Medical Centre (QMC) emergency department (ED), major trauma centre and the Nottingham Children's Hospital are located at QMC, as well as maternity, acute medical wards, healthcare of the older person and the treatment centre which provides day case and outpatient services. QMC is also where the University of Nottingham's School of Nursing and Medical School reside
- Nottingham City Hospital (City Hospital): predominantly includes the care of patients with long term conditions, and where some emergency admission units are located. This also includes the burns Unit, cardiac centre, and cancer centre. The City Hospital is home to the maternity hospital and several specialty departments, wards, and critical units in support of QMC
- Ropewalk House: provides a range of outpatient services

The breadth of the Trust means that the scope of our proposal aims to improve health and wellbeing across Nottingham and Nottinghamshire.

Our proposals are evidence based, drawing on best practice and system data to deliver our vision for the future clinical model of care. Health needs in the region are changing as people live longer, with multiple long-term conditions and growing health inequality. There is a complex map of different healthcare providers and local authorities working across the region. We need to deploy new ways of working as a system, utilise technology and leverage the potential of new hospital infrastructure to meet these needs and ensure we can continue to deliver quality in the future.

We have developed this PCBC in collaboration with a wide range of stakeholders with appropriate governance in place to approve decisions. The PCBC is a technical evidence- based document that provides the Nottingham and Nottinghamshire Integrated Care Board (ICB) the information required to assess the option for acute hospital before taking it forward for public consultation. This will go onto form the basis of the strategic outline case (SOC) the NUH must prepare to apply for capital funding.

2.1 Purpose and scope of pre consultation business case (PCBC)

2.1.1 Purpose of the PCBC

This document is a pre-consultation business case (PCBC) setting out proposed changes in health services in Nottingham and Nottinghamshire, with a specific focus on secondary care delivered by Nottingham University Hospitals NHS Trust (NUH). NUH is one of the largest Trusts in England and provides district general health services to over 2.5 million residents in Nottingham, Nottinghamshire and its surrounding communities. Additionally, the Trust provides specialist services to a further 4.5 million people from across the East Midlands, and nationally. The strategic context for this development is the Nottingham and Nottinghamshire ICS five-year strategic plan, the ICS' clinical and community services strategy (CCSS), supporting service strategies, transformation programmes in place for community services, urgent care, planned care, diagnostics, mental health, as well as responding to the GP Five Year Forward View and learning from the COVID-19 pandemic. The TNUH programme encompasses these strands of work, describing the case for change and the various options available to deliver a new acute clinical model, facilitated through a c. £1.345bn capital investment in services. It then recommends options for change, and a preferred way forward for the hospital services delivered by NUH on which a full public consultation will be undertaken. Following this consultation, the Nottingham and Nottinghamshire Integrated Care Board will analyse the responses prior to making decisions about the future of services.

The PCBC outlines the key challenges to our healthcare system and describes why change is necessary to reduce health inequalities and to meet the needs of a changing population. The current healthcare system will become clinically and financially unsustainable if forecast increases in demand continue without the creation of sufficient capacity to deliver it, both in and out of hospital services.

The TNUH programme sets this out in the context of the ICS vision and response to the NHS long term plan, the ICS' health inequalities strategy and ICS CCSS but focuses on an acute clinical model for the population of Nottingham and Nottinghamshire, served by NUH, based on clinical standards and evidence based best practice. NUH is also the major trauma centre for the East Midlands region and provides some specialist services across the ICS and the region. Additionally, NUH has an integral role as an organisation in the community as a whole.

The PCBC sets out a clear and transparent approach to the financial and non-financial appraisal of the options available to deliver the case for change, and thus identifies a preferred way forward.

It provides us with an opportunity to invest in our services to improve health outcomes, to improve the facilities for our patients, our workforce and to support provision of high quality sustainable local health services.

2.1.2 Aims of the PCBC

The aims of this document are:

1. To describe the **health needs of our population** and outline the **case for change**, which describes the clinical environment and infrastructure needed to support the delivery of the programme. The intent is to deliver the best care for our patients and

provide a positive working environment for all staff. The case for change describes the **key challenges facing us**, and explains why change is necessary.

2. To describe the **decision-making process** we have followed and **governance arrangements** required to support the desired change. The PCBC describes the process we have followed to ensure any decision-making is supported by clinical best practice, underlying evidence and has the support of local stakeholders.
3. To outline the **public and stakeholder engagement** that has been carried out at each stage of the programme, and how we plan to consult if a decision is made to proceed to consultation. The stakeholder engagement plan describes how key stakeholders have been engaged with, and involved in, our process.
4. To describe the **clinical model** of care that was developed by clinicians describing how patients' needs will be met; recognising co-dependencies and aspiring to positive impacts on both patients and staff. The benefits section describes the benefits of the proposed clinical model and how it will meet the needs of our local population.
5. To set out the **options appraisal process** and evaluate the possible long-list of options against a set of critical success factors to determine the short-list of options, subsequently evaluating these options to identify the **preferred way forward**. The options appraisal process describes the approach we have taken to understand the possible options to address the challenges as set out in our case for change and delivery of the clinical model.
6. To outline the key enablers needed for each model of care including workforce and estates.
7. To demonstrate the **planning and proposed implementation** if, following public consultation and due regard to the responses has been considered, a decision is made to move forward. The governance section describes the role of the assurance bodies and scrutiny committees around decision-making.

The PCBC outlines a commissioner-led review of the potential service delivery models and service options. The intent is to then seek opinion from the public through a formal public consultation. The PCBC will also demonstrate how it meets the five tests of assurance in line with regulatory requirements by NHS England[2]. The five tests for assurance are:

- **TEST #1**: The proposed change can demonstrate strong public and patient engagement.
- **TEST #2**: The proposed change is consistent with current and prospective need for patient choice.
- **TEST #3**: The proposed change is underpinned by a clear, clinical evidence base.
- **TEST #4**: The proposed change to service is owned and led by the commissioners.
- **TEST #5**: Proposals including significantly reducing hospital bed numbers will have to meet one of the following three conditions:
    - Demonstrate that sufficient alternative provision, such as increased GP or community services, is being put in place alongside or ahead of bed closures, and that the new workforce will be there to deliver it; and/or

[2] NHS England. 2018. https://www.england.nhs.uk/wp-content/uploads/2018/03/planning-assuring-delivering-service-change-v6-1.pdf

- How that specific new treatments or therapies, such as new anti-coagulation drugs used to treat strokes, will reduce specific categories of admissions; or
- Where a hospital has been using beds less efficiently than the national average, that it has a credible plan to improve performance without affecting patient care (for example in line with the Getting it Right First Time programme).

The PCBC is therefore a technical and analytical document intended to provide sufficient information to enable the Nottingham and Nottinghamshire ICB Board to describe the context of a significant service reconfiguration - that will form the basis of public consultation. The business case is prepared in accordance with the NHS England guidance on planning for major service change and reconfiguration[1], and also His Majesty's (HM) Treasury Green Book[3].

2.1.3 Scope of the PCBC

This PCBC, Tomorrow's NUH, is focused on the opportunity to make a step change in the implementation of the ICS CCSS and associated service specific strategies offered by significant investment in the NUH estate.

As such, whilst the consultation proposals focus on specific changes to secondary care provided by NUH, this is within the context of wider system transformation.

This document provides a clear understanding of the problems and difficulties associated with existing arrangements across the health system; and describes how this can begin to be addressed with new clinical models and re-configuration of services, bridging any existing or future gaps in business operations and service provision.

This document acknowledges the interface with the wider transformation programmes for other acute, community and mental health providers in Nottingham and Nottinghamshire, however these programmes are out of scope for this PCBC.

2.2 Context

2.2.1 Introduction

The local NHS in Nottingham and Nottinghamshire has worked together as an Integrated Care System (ICS) to define a vision and strategy for the future of healthcare locally. The system has ambitious plans for service and system change to improve the health and wellbeing of our local people through high quality care delivered in a sustainable way. In response to the NHS long-term plan, there has been an opportunity to take stock on what has been achieved and learnt, the challenges still faced and the focus going forward. The ICS five-year strategic plan builds on a growing commitment to collaborative working with a set of priorities that will make the biggest difference to improving the health system. The ICS are fully committed to achieving the four aims below:

1. Improve outcomes in population health and healthcare
2. Tackle inequalities in outcomes, experience and access

[3] Gov.UK, 2022. The Green Book. https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent/the-green-book-2020

3. Enhance productivity and value for money
4. Help the NHS support broader social and economic development

To deliver these aims, changes are needed to configure acute hospital services, secondary and tertiary care services to support modern healthcare delivery. There is a need to consolidate services where necessary clinical dependencies have been identified, to co-locate services to ensure the best possible patient experience. The TNUH programme will also be key to ensure that services are delivered from fit-for-purpose facilities, supported by close collaboration with system partners.

In parallel, as part of the national New Hospital Programme (NHP), the government has allocated c. £1.345bn capital to support the modernisation and upgrading of buildings and facilities for NUH. This investment will help enable the changes of the estate at NUH needed to deliver the ICS strategy.

This is a once-in-a-generation opportunity to redesign and transform services to deliver improved health and care for the Nottingham and Nottinghamshire population. The creation of modern, fit-for-purpose acute hospital facilities at NUH will be central to the future ICS vision.

2.2.2 New Hospital Programme

The New Hospital Programme (NHP) provides an essential component to delivering TNUH ambitions, through vital investment. The government's investment scheme takes forward the view of long-term strategic investment in the future of the NHS to ensure the delivery of world-class healthcare in world-class facilities, enabling provision of cutting-edge care.

The NHP investment scheme will deliver a long-term rolling programme of investment in health infrastructure including:

- capital investment to build new hospitals
- modernisation of primary care estate
- investment in new diagnostics and technology, and;
- support to eradicate critical safety issues in the NHS estate.

The NHP programme includes a commitment to building over 40 new hospitals by 2030. A number of schemes have been identified in a first wave to be delivered by 2025, supported by a capital investment of £3.8bn.[4]

An opportunity to invest in the acute hospital infrastructure in Nottingham has been identified with NUH as a second wave NHP scheme; with a potential £1.345bn capital allocation to re-develop acute hospital sites in Nottingham and Nottinghamshire by 2030.

2.2.3 Nottingham and Nottinghamshire integrated care system (ICS)

Nottingham and Nottinghamshire is one of the first areas in England to begin working as an ICS as outlined in the White Paper, and formally became an ICS on 1st July 2022. The local system has implemented a changed delivery environment based on system and place-based working which will enable care to be delivered as close to home as possible, enabling

[4] Eight new hospitals to be built in England - GOV.UK (www.gov.uk)

providers to deliver integrated care in a way that recognises the differing needs of the population. The structure of the ICS can be viewed at Figure 11.

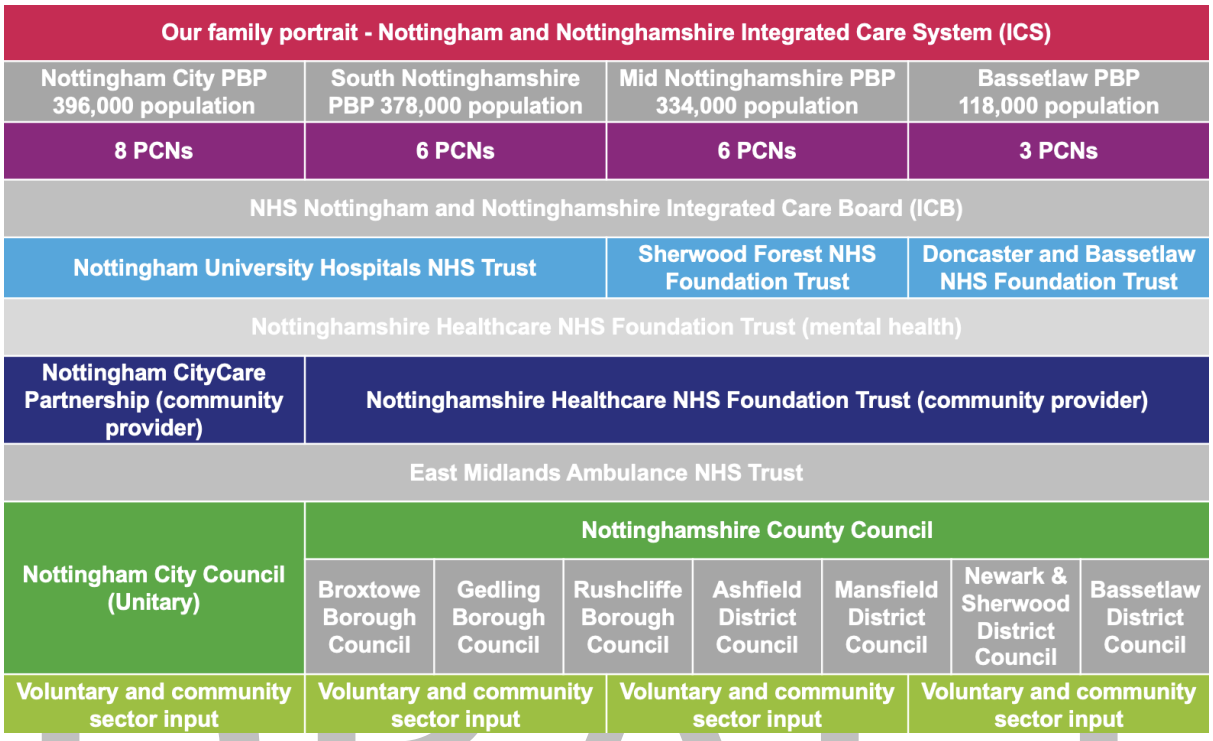


Figure 11: Structure of Nottingham and Nottinghamshire ICS

There are three levels of collaboration at place level:

- **Primary Care Networks (PCNs)** consisting of integrated health and care teams linking with wider local authority housing and community services across neighbourhood localities.
- **Place Based Partnerships (PBPs)** facilitating the integrated provision and delivery of outcomes for the population. Four PBPs have been agreed - Mid Notts, South Notts and Nottingham City and Bassetlaw.
- **Integrated Care System (ICS)** for the whole of Nottingham and Nottinghamshire health and care system.

Figure 11 illustrates the map of 'places' covered across the Nottingham and Nottinghamshire ICS. These are the four placed-based partnerships which make up the ICS. It is recognised that there is a growing population with increasing needs which are placing different demands on the health and care services.

The NUH sites are all located within Nottingham City and primarily serve the populations living in Nottingham City and South Nottinghamshire localities. Bassetlaw is served by Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust. Mid Nottinghamshire is served by Sherwood Forest Hospital and Newark Hospital, however, these populations may access services at NUH for some of the regionally recognised specialisms (e.g. major trauma centre). As a provider of tertiary services, the catchment area for NUH is wider than Nottingham.

Figure 12: Map of Nottingham and Nottinghamshire ICS

The acute service reconfiguration proposed by the Tomorrow's NUH programme takes into consideration the local population and demographic factors, the need to reduce known health inequalities, to utilise population health management data to consider levels of deprivation and poverty, which will thereby inform the changes needed to the provision of acute services across the health system.

2.3 Geography and demography of Nottingham and Nottinghamshire

2.3.1 Population and demography

There are currently 1.1 million people in the Nottingham and Nottinghamshire ICS, which is set to increase by 2% by 2024, and by 9% by 2039 (ONS Population Estimates 2018).[4]

The joint strategic needs assessments (JSNA) for both Nottingham City and Nottinghamshire County are completed to inform local decision making. JSNAs are undertaken by local authorities and Integrated Care Boards (ICBs) to assess the current and future health, care and wellbeing needs of the local community, and to enable planning and commissioning of integrated services that meet the needs of the whole community and population.[5]

This is aligned to the joint health and wellbeing strategies which identify the need to help reduce health inequalities and promote integration of services for all demographics of our population.

[4] ONS, 2022. https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections.

[5] Department of Health, 2011. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/215261/dh_131733.pdf

2.3.2 Age profile

The age profile of our population in Nottingham and Nottinghamshire is similar to the England average. The Nottingham City population has a smaller proportion of those aged 50+, and a high proportion of younger people even without its large student population.

People are living far longer in Nottinghamshire County, with the population continuing to age over the next 4 years. The population age over 65 is due to increase from 176,100 in 2021 to 196,100 in 2026 (11% increase) and the population over 85 is due to increase from 22,500 in 2021 to 25,200 in 2026 (12% increase).[6] Older people are more likely to experience disability and life limiting long-term illnesses. The majority of carers who provide 50 or more hours per week are aged 65+, often caring for a partner. Those carers are themselves more likely to experience poorer health than those of a similar age who do not provide care. [7]

The table in Figure 13 provides a summary of the Nottingham and Nottinghamshire ICS population compared to England.

[6] Nottinghamshire Insight, 2022. https://www.nottinghamshireinsight.org.uk/people/key-population-facts/

[7] Joint Strategic Needs Assessment (JSNA), 2021. Nottinghamshire County Joint Strategic Needs Assessment Evidence Summary.

	England		Nottingham and Nottinghamshire ICS		Index Nottingham and Nottinghamshire vs England	
	59,759,638		1,096,640		1,096,640	
	Female	Male	Female	Male	Female	Male
Age	29,909,960	29,849,678	544,681	551,959	544,681	551,959
95+	0.1	0.1	0.1	0.0	91	88
90-94	0.4	0.2	0.4	0.2	100	92
85-89	0.9	0.6	0.9	0.6	97	97
80-84	1.3	1.1	1.3	1.1	98	97
75-79	1.7	1.5	1.7	1.5	98	98
70-74	2.4	2.3	2.4	2.2	98	98
65-69	2.4	2.3	2.4	2.3	97	100
60-64	2.7	2.7	2.6	2.6	97	96
55-59	3.2	3.3	3.1	3.2	99	98
50-54	3.4	3.6	3.3	3.5	98	97
45-49	3.3	3.5	3.1	3.3	95	96
40-44	3.1	3.3	2.8	3.0	92	92
35-39	3.5	3.7	3.2	3.5	92	96
30-34	3.7	3.7	3.5	3.9	94	104
25-29	3.6	3.6	3.5	3.9	97	111
20-24	3.2	3.1	4.3	4.1	133	131
15-19	2.7	2.8	2.9	2.9	110	106
10-14	2.8	2.9	2.7	2.8	96	95
5-9	2.9	3.1	2.9	3.0	98	99
0-4	2.7	2.8	2.6	2.7	97	98

Figure 13: Nottingham and Nottinghamshire ICS forecast population and demographics[8]

2.3.3 Ethnicity

The population of Nottingham and Nottinghamshire overall is 88% white ethnic compared with 85% for England. However, within Nottingham City there is a higher proportion of residents from black and minority ethnic (BME) groups (34.6% - 2011 Census), an increase from 19% in 2001.[9] In the county there are proportionally more white ethnic group residents compared to the average across England, with Mid-Notts at almost 98% and South-Notts at 93%.[10]

2.4 Current health and care services in Nottingham and Nottinghamshire

2.4.1 Service provision and commissioning

The Nottingham and Nottinghamshire Integrated Care Board ICB commission a vast range of healthcare services from an array of providers. These include NHS trusts, primary care GPs, voluntary organisations and others who offer hospital, mental health and community-based care. Specialised services however are commissioned by NHS England often involving complex medical or surgical conditions. The current direction of travel is to much more closely align specialist commissioned services with locally commissioned services to ensure a

[8] https://www.nottinghamcity.nhs.uk/media/4321/g-gtr-nottm-governance-govassurance-governance-policy-final-nnccgs-policies-nn-commissioning-strategy-2020-22.pdf

[9] Nottingham City Joint Strategic Needs Assessment, Demography, 2020.

[10] Nottinghamshire Joint Strategic Needs Assessment, The People of Nottinghamshire, 2017

whole pathway approach is taken. This is to improve the health and care of patients across the footprint and population, as well as building and sustaining capacity and clinical expertise.

The Nottingham and Nottinghamshire ICS work on a place-based model of health care to deliver care as close to home as possible, enabling providers to deliver care in a way that recognises the differing needs of the population.

The pressures on the current services are unsustainable and require a significant transformation shifting to a more proactive model of care that focuses on lifestyle related disease. This is in tandem with ensuring the benefits of having increased access to tertiary providers are realised, with the use of innovation to drive quality in specialist hospital services when required.

2.4.2 Local authorities

Nottinghamshire County has a two-tier system of local government, where Nottinghamshire County Council is a first tier local authority. The second tier of government is made up of the following 7 borough/district councils:

- Ashfield District Council
- Bassetlaw District Council
- Broxtowe Borough Council
- Gedling Borough Council
- Mansfield District Council
- Newark and Sherwood District Council
- Rushcliffe Borough Council

These second-tier councils are responsible for functions including housing, parks and leisure, council tax collection, bins and pest control.

Nottingham City Council, on the other hand, is a unitary authority which provides all services. Within Nottingham and Nottinghamshire, it is the Nottinghamshire County Council and Nottingham City Council who provide social care. The ICB Board has two partner members in its membership from these local authorities.

2.4.3 Primary care

Primary care services provide the first point of contact in the healthcare system, and comprise general practice, community pharmacy, dental and optometry (eye health) services. As declared in the NHS long term plan (LTP), primary care will lead on improving the ‘whole person’ health of the local population, with a greater understanding of mental health, the benefits of social prescribing, personalised care, medicines management and how to age well with the support of services.

There are 133 GP practices across Nottingham and Nottinghamshire, which are organised into 23 primary care networks (PCNs) and aligned to the four placed-based partnerships illustrated in Figure 12. Nottingham City has 8 PCNs, Bassetlaw has 3 PCNs, Mid-Nottinghamshire has 6 PCNs and South Nottinghamshire has 6 PCNs.

2.4.4 Community services

Community health services are provided by a range of providers across Nottinghamshire. The largest provider is Nottinghamshire Healthcare NHS Foundation Trust who offer a range of services from the community, as well as providing a stock of community beds.

There are also high-quality community health services provided by the Nottingham City Care Partnership, in addition to other smaller providers of community services. A range of nursing and community healthcare services are provided from health visits, education for young families, community nursing, home-based rehabilitation services for older people, and nutrition and dietetics sessions.

Nottinghamshire Healthcare NHS Foundation Trust offers a range of services from locations across Nottinghamshire, which include:

- community health services; and
- offender health and prison services.

In May 2020, Nottinghamshire Healthcare NHS Foundation Trust received a Care Quality Commission (CQC) rating of 'requires improvement'. Two of the inspection areas were quality rated as 'good' (effective and caring) and three were rated as 'requires improvement (safe, responsive and well-led).[11]

Wider determinants of health such as social and community influences, can enable access to quality healthcare services, and thus contribute to overall health outcomes and health inequalities with community-based intervention.

2.4.5 Community care transformation

The ICS is coming together to deliver an ambitious system-wide programme of transformation in the community care services we provide to our citizens, through strategic and collaborative working.

The current community care offer provides the building blocks of integration which will be enhanced to deliver a single ICS model of care, adopting a strengths-based approach flexible to local population need. This is an ambitious transformation programme, with the full benefits taking a number of years to achieve. The ambition is for integrated community teams providing support for local populations based on the specific needs of neighbourhoods. People's independence will be optimised by addressing physical and mental health and social needs proactively before a state of crisis is reached. Our citizens will be empowered and supported to self-care, with support from within their communities, maximising the use of community assets.

The programme builds on learning from local, national and international transformation programmes and is focused on a number of key areas:

- the alignment of health and social care resources and workforce to implement neighbourhood/placed based community teams, delivering a consistent model of care across the ICS whilst ensuring services are responsive to local population need.

[11] CQC, 2020. https://www.cqc.org.uk/provider/RHA

- levels of support and care are driven by population health data and intelligence, with a focus on delivering outcomes that reduce inequalities in health and wellbeing.
- personal and community assets are fully utilised and developed to support outcomes, using a practice framework for an integrated health and social care personalised, strengths and asset-based approach that empowers individuals and communities to take control of their own health and care.
- working in partnership with our citizens, to support them to have control over their own health and wellbeing, and make connections with their communities and the services that can help to support their needs.
- empowering practitioners to support the implementation of the new care model, irrespective of employing organisation and role.

The effective working of integrated neighbourhood teams will be embedded across the ICS, ensuring that the right data is available to ensure the proactive identification of need. This will expand beyond the current resource, to make best use of community and voluntary sector assets. This work is currently in progress, with five accelerator sites piloting new ways of working across Nottingham and Nottinghamshire. It is envisaged that there will be implementation across all Primary Care Network (PCN) sites by September 2024 and that the new ways of working will become business as usual.

Following the successful roll out of the first phase of transformation, a second phase is planned which will consider which functions of specialist teams could then be delivered within the community according to local need. This would therefore enable the adjustment of thresholds for secondary care intervention with resource moved to the community to deliver care close to home, particularly for the management of long term conditions, and frailty. This second phase of the community transformation will necessarily require a strong interface with developing clinical models and pathways of the TNUH programme, as the specific clinical needs within neighbourhoods are determined. The planning for phase 2 will commence in quarter 1 of 23/24 and the timescale for delivery is completion by April 2025. Given that the timescales for TNUH and phase 2 do not currently align, it is not yet possible to quantify estimated impacts. There is however a firm commitment that the developing clinical pathways will be informed by the outputs of community transformation once these are available.

Through the delivery of this programme the ICS aims to:

- ensure people are cared for in the most appropriate setting for their needs
- reduce avoidable and unplanned admissions to hospital and care homes
- increase early identification and early diagnosis of ill health
- increase the value for money and ability to manage increased demand due to more efficient pathways
- increase the capacity in skilled workforce including other sectors e.g. voluntary, to deliver holistic models of care (including social prescribing and self-management) based on need thereby reducing waiting times and greater ability to manage increased demand.

The ICS are developing a new model of health and care that will bring together primary and community care services, ensuring care is provided close to home wherever possible. This

will ensure there is alignment with our hospital and other specialist services, to ensure that people access the right services for their needs in a timely way.

2.4.6 Mental health services

In Nottinghamshire, mental health services are provided by Nottinghamshire Healthcare NHS Foundation Trust, local authorities and the voluntary sector. The NHS LTP outlines several transformation programmes running to 2023/24, to improve mental health services, which will include increasing services commissioned from the voluntary sector.

Primary care psychological therapies are delivered by three providers in Nottinghamshire, the services are open access and people can self-refer for support. A mental health helpline is in place for anyone requiring support.

The majority of secondary care mental health services are delivered by Nottinghamshire Healthcare NHS Foundation Trust, from locations across Nottinghamshire. Services include:

- Perinatal mental health services;
- Liaison psychiatry services based at NUH and Sherwood Forest Hospitals;
- Children and young people's community and inpatient services;
- Community mental health services for adults and older adults including specialist services such as early intervention in psychosis;
- Crisis resolution and home treatment teams, which can be accessed through a 24/7 all age crisis line;
- Inpatient mental health services for adults and older adults and psychiatric intensive care; and
- High, medium and low secure mental health service and forensic mental health services.

2.4.7 Ambulance services

Ambulance services for our population are provided by East Midlands Ambulance Service NHS Trust (EMAS). EMAS provides emergency 999 and urgent care for the 4.8 million people within Derbyshire, Leicestershire, Rutland, Lincolnshire (including North and North East Lincolnshire), Northamptonshire and Nottinghamshire.

EMAS employs c. 3,700 staff at more than 70 locations, including two control rooms in Nottingham and Lincoln. The Trust operates a fleet of around 660 vehicles including emergency ambulances and fast response cars.

In July 2019, EMAS received a CQC rating of 'good'. Four of the inspection areas were quality rated as 'Good' (safe, effective, responsive and well-led) and one was 'outstanding' (caring).[12]

Non-emergency patient transport service (NEPTS) provision is currently provided by the private ERS medical provider, as well as voluntary providers in response to population needs.

[12] CQC, 2019. https://www.cqc.org.uk/provider/RX9

2.4.8 Acute services at Nottingham University Hospitals NHS Trust

NUH was formed in 2006 following a merger of Nottingham City Hospital and Queen's Medical Centre Trusts. It is now one of the biggest and busiest acute Trusts in England, employing 17,250 staff, with a budget of just over £1.5 billion, 98 wards, and 1927 beds across three main sites.

NUH provides district general health services to over 2.5 million residents in Nottingham, Nottinghamshire and its surrounding communities. Specialist services are provided to a further 4.5 million people from across the East Midlands, and nationally for some select specialist services.

The Trust is based in the heart of Nottingham (as shown in Figure 14), and operates acute hospital services from three main sites:

- The **Queen's Medical Centre (QMC)** is the site where the Emergency Department (ED), major trauma centre and the Nottingham Children's Hospital are located. It is also where the University of Nottingham's School of Nursing and Medical School reside.
- **Nottingham City Hospital** is where the focus is on planned care, the care of patients with long term conditions, and where some emergency admission units are located. This also includes the Burns Unit, Cardiac Centre, Cancer Centre and Stroke Services.
- **Ropewalk House** is where the Trust provides a range of outpatient services, including hearing services.

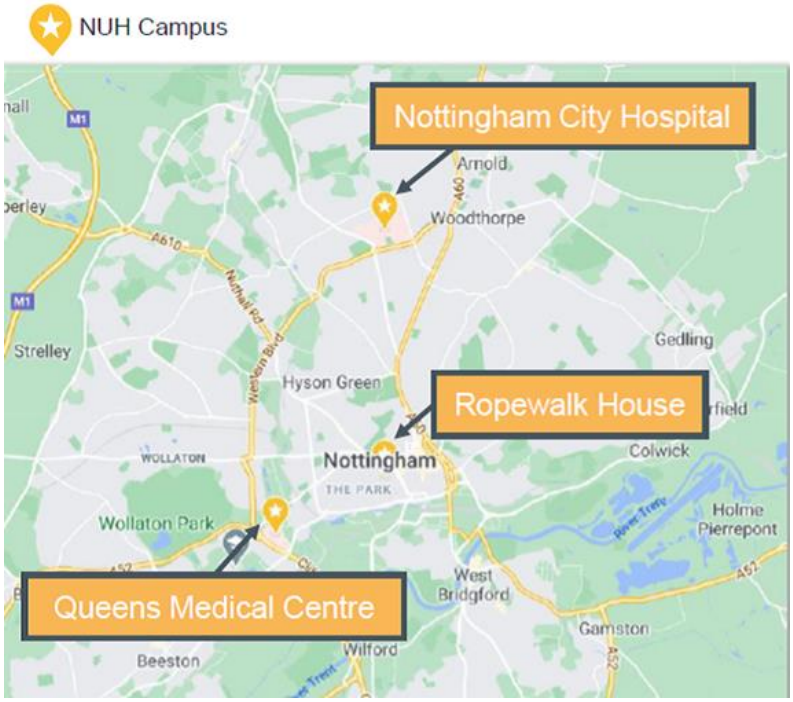


Figure 14: Map of Nottingham University Hospitals NHS Trust

The Trust is also a joint provider of care at the National Centre for Sports and Exercise Medicine in Loughborough and is developing the National Rehabilitation Centre at Stanford Hall to transform specialist rehabilitation services for NHS patients in the East Midlands.

In March 2019, NUH received a CQC rating of 'Good'. Three of the inspection areas were quality rated as 'Good' (Effective, Responsive and Well-led), one was outstanding (Caring), and one 'Requires improvement' (Safe). Issues were identified with staffing levels (medical and nursing), waiting times (emergency and elective services) and patient transfers to keep people protected from avoidable harm.

In December 2020, the CQC published their report following an unannounced inspection of NUH Maternity Services in October 2020. The visit resulted from HM Coroner being made aware of concerns. Maternity services were rated 'Inadequate' overall having previously being rated as 'Requires Improvement'.[13]

Following the inspections, under Section 31 of the Health and Social Care Act 2008, the CQC imposed conditions on the registration of maternity and midwifery services at Nottingham City Hospital and Queen's Medical Centre. This urgent action was undertaken to prevent exposure to the risk of harm. In addition, a warning notice was issued to NUH due to concerns found around the documentation for risk assessments and information technology systems. This notice gave NUH three months to make the necessary improvements.

During the inspections, several serious concerns were identified. For example, risk assessments which women were expected to have undertaken during their care were not always completed in line with national guidance. Staff did not always use a nationally recognised tool to identify women at risk of deterioration.

In addition, the service did not always have enough midwifery staff with the right qualifications, skills, training and experience to keep women safe from avoidable harm and to provide the right care and treatment. Managers regularly reviewed and adjusted staffing levels and skill mix but were limited to the resources available.

A further unannounced inspection was made of the maternity services at the Trust in May 2022 to check on the progress of suggested improvements to the service following previous inspections. This resulted in a rating of 'requires improvement' for both Nottingham City and Queen's Medical Centre. [14]

In September 2022, an independent review into maternity services at NUH commenced, commissioned by the NHS England national team, and chaired by Donna Ockenden. The review will focus on identifying areas of concern within maternity care at NUH and will provide information and recommend actions to help improve the safety and quality of maternity care and the handling of concerns at NUH when they are raised by patients and/or their families. The review report will be published within 18 months of commencement (by March 2024).

Whilst the TNUH programme is longer term changes and does not directly respond to current issues which are being considered in the maternity improvement plan and Ockenden review, it is pertinent to refer to them here to set the context. The proposed

[13] CQC, 2020. https://www.cqc.org.uk/news/releases/cqc-takes-action-drive-improvements-maternity-services-nottingham-university-hospitals

[14] CQC, 2022 https://www.cqc.org.uk/press-release/cqc-demands-rapid-and-widespread-improvement-maternity-two-nottingham-hospitals

acute service reconfiguration described in the PCBC is a longer-term continuation of the ongoing work to improve services.

2.4.9 Acute services at Sherwood Forest Hospitals NHS Foundation Trust

Sherwood Forest Hospitals NHS Foundation Trust provides services from three main sites. The Trust has c. 4,500 staff, c. 600 beds and a budget of c. £297Mn.

The Trust provides acute hospital services from three main sites:

- **King's Mill Hospital** is an acute general district hospital serving the population of north Nottinghamshire, and parts of Derbyshire and Lincolnshire. Sherwood Forest provides 90% of its services from King's Mill, including an emergency department, as well as maternity services, inpatient facilities, clinics and therapy services and more. King's Mill Hospital has general good quality estate and is currently under a Private Finance Initiative (PFI).
- **Newark Hospital** provides a range of outpatient clinics, therapy services, surgical and medical day case procedures, inpatient services and rehabilitation, as well as the Newark Urgent Care Centre.
- **Mansfield Community Hospital** provides community beds and is home to the Sherwood Rehabilitation Unit, a specialist multidisciplinary rehabilitation team.

In May 2020, Sherwood Forest Hospitals received a CQC rating of 'Good'.[15] Four of the inspection areas were quality rated as 'Good' (Safe, Effective, Responsive and Well-led) and one was 'Outstanding' (Caring). King's Mill Hospital was also identified as 'Outstanding'.[16]

2.5 Governance arrangements

This section describes the governance arrangements surrounding the TNUH programme as part of the New Hospital Programme, and subsequently the governance around the Pre-Consultation Business Case (PCBC). This section describes the most recent governance structure which was commenced from September 2022. It also takes into account the new guidance principles published by the Department of Health and Social Care (DHSC) in May 2022 on planning, assuring and delivering service change for patients[17]. In essence, it is the Integrated Care Board (ICB) who are ultimately responsible for statutory approval of the PCBC, and Nottingham University Hospitals NHS Trust (NUH) who are responsible for delivering the capital solution through the development of the Programme Business Case (PBC). However, the new governance arrangements reflect the recognition that both the ICB and NUH board need to be completely aligned and fully support both ventures. This governance for TNUH is all part of the wider governance from regional and national stakeholders, including the New Hospital Programme and Regional NHS bodies, who will be involved in approval and sign off.

2.5.1 Tomorrow's NUH

The Tomorrow's NUH programme encompasses two strands of work which have a strong interface but are necessarily distinct from one another. The TNUH PCBC document brings

[15] CQC, 2020. https://www.cqc.org.uk/provider/RK5

[16] CQC, 2020 https://www.cqc.org.uk/location/RK5BC

[17] Addendum to Planning, assuring and delivering service change for patients (March 2018), NHS, 2022

these two strands together into a single business case, which fulfils the functions required of the service change and capital cases. The two strands are:

- The Pre-Consultation Business Case (PCBC): this is the case to describe the proposals for the changes to services which will be enabled by access to capital funding for estates improvements. The PCBC has been developed and led by Nottingham and Nottinghamshire ICB, and the ICB will take the proposals within the PCBC through a full consultation with the public.
- The Programme Business Case (PBC): this is the case which describes the proposals for changes to the hospital estate for which capital funding will be required. The proposed estates configuration is underpinned by the proposed clinical model. Nottingham University Hospitals NHS Trust (NUH) are responsible for the development of the PBC.

The ICB, NUH and other stakeholders have worked together as an integrated team to produce the outputs required for both the PCBC and the PBC and encapsulate these into a single document.

The decision-making processes for the overall programme are as follows:

- Final decision making on any **major service changes and public consultation** will reside with the ICB.
- Final decision making on the **allocation of capital** will reside with national regulators. The decision to award capital can only be taken by the DHSC in liaison with NHSE and Her Majesty's Treasury.
- Final decision making on the **redevelopment of the NUH estate and clinical model** will reside with the NUH Trust Board.

2.5.2 PCBC governance

A robust governance structure has been put into place for the development of the PCBC that provides confidence that the programme is well managed with sufficient reporting and programme control activities.

The PCBC development has been managed by a dedicated programme team within the ICB who have worked in an integrated virtual team with staff and clinicians at NUH and in the wider system. The oversight of the PCBC is provided by the ICB and the TNUH Programme and Partnerships board. A set of workstreams which have been jointly delivered by the ICB and NUH feed directly into these forums. Figure 15 demonstrates this governance and how it fits into the wider TNUH programme governance.

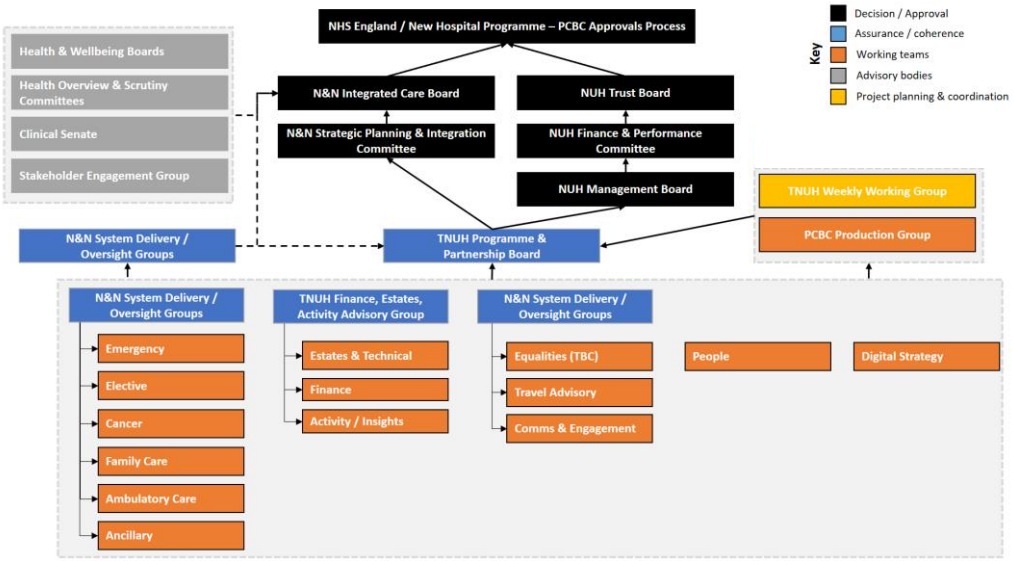


Figure 15: TNUH Governance Structure and PCBC approvals

In summary, the approach to the programme management of this PCBC includes:

- A **clinically-led programme** with senior local clinicians who have developed and influenced local solutions, ensuring that they are clinically sound and based on external clinical advice.
- **Involvement of staff and the public** in the development of informed solutions.
- Regular opportunities have been provided for **stakeholders to influence and inform the clinical model**, and this will continue as the model is further refined following consultation.
- All **partner stakeholders both within the ICS and from neighbouring systems have been kept informed** about the programme and its impact on their organisation via a Strategic Oversight Group to ensure system alignment.
- From September 2022 a single Programme and Partnership Board has been in place which has ensured that there is robust governance in place for the PCBC with full system alignment.

2.5.3 Integrated Care Board (ICB)

The Integrated Care Board (ICB) is responsible for the NHS clinical commissioning decisions across Nottingham and Nottinghamshire. The Board have overall accountability for the development of the proposed service reconfiguration including public engagement/statutory public consultation and NHS England (NHSE) assurance of the agreed PCBC. The ICB will engage with other ICBs as appropriate, and also NHSE in discharge of their commissioning duties for specialised commissioning.

The process for the development of the PCBC is led by the ICB and fully complies with the NHSE reconfiguration guidance and other related legislation. Key features of this are a duty to promote meaningful public engagement on service options that are affordable and deliverable.

2.5.4 Tomorrow's NUH Programme and Partnership Board

The TNUH Programme and Partnership Board was created as part of the new governance structure from the previous TNUH Programme Board in September 2022. This was in recognition that TNUH is both a capital and service change project, with membership refreshed to ensure that all relevant partners are afforded the opportunity to engage with the TNUH proposals.

The board is chaired by the Chief Executive of Nottingham and Nottinghamshire ICB, with the Chief Executive of NUH as the vice-chair, and senior leaders from both organisations are present. System stakeholder representation is provided by Sherwood Forest Hospitals, City Care, Nottinghamshire Healthcare Trust, East Midlands Ambulance Service, Healthwatch Nottingham and Nottinghamshire, Nottingham City Council, Nottinghamshire County Council, regional NHS England, the New Hospital Programme and an ICB lay member with a specific responsibility for ensuring the voice of the patient is heard. The neighbouring systems of Derby and Derbyshire, Lincolnshire and Leicester, Leicestershire and Rutland are also around the table. The board is tasked with overseeing all products associated with reconfiguration and with engaging and involving partners in the plans. The board is not a decision-making body, however, but a forum where products (e.g. the PCBC) are tested and assured before they are recommended to the ICB for approval. The PCBC production group and TNUH Weekly Working Group feed into the TNUH Programme and Partnership board as demonstrated in Figure 15.

2.5.5 Health Scrutiny Committees

Local authorities have an essential role in the development of a major change to health services and there is a specific requirement that they are consulted with and are informed and engaged in the process. Local authorities have a duty to refer service changes to the Secretary of State and the national Independent Reconfiguration Panel if they deem that this requirement has not been met. There has been a continuous dialogue with Nottingham City and Nottinghamshire County Councils' Health Scrutiny Committees to provide accountability and transparency to ensure that the needs of the community are met and where necessary make recommendations for improvement.

2.5.6 New Hospital Programme

The New Hospital Programme is another stakeholder linked to the PCBC and wider TNUH programme. TNUH comprises a part of this wider government initiative, and as the provider of the investment to carry out the ambitions of TNUH, NHP proves a critical stakeholder in the wider governance and overall sign off.

3 Engagement approach

This chapter describes the engagement process we carried out to secure a solid foundation to develop our proposals. We have carried out continuous engagement since the beginning of the TNUH programme to comply with our legal duty as an NHS organisation to involve patients and the public in the planning of service provision, the development of proposals for change and decisions about how services operate. This means we have sought representation from within NUH, other NHS and non-NHS partners and the citizens of Nottingham and Nottinghamshire.

Our engagement has adhered to our principles to consult whilst proposals are formative, provide information and time to enable intelligent consideration and response, and take consultation into account before making a decision on service change. By speaking with people from all backgrounds and leveraging a range of fora, including traditional engagement, virtual sessions and communicating via social media, we have made our engagement inclusive.

This has been conducted in the two phases so that issues could be flagged by stakeholders to be addressed in more detail and shape our proposals:

- Pre-consultation engagement phase 1: between 21st November and 15th December 2020, over 670 people participated in engagement on the initial model of care, including specific representation from special interest groups
- Pre- consultation engagement phase 2: between 7th March and 5th April 2022, over 1,940 people participated in engagement to identify the best possible configuration of services

There were seven key conclusions drawn from the engagement:

- The majority of participants were supportive of the overall proposals
- There is support to have emergency care services co-located, to allow patients access to relevant treatments whilst on-site.
- Travel, parking and access to public transport were consistent themes across the engagement.
- Patient choice was strongly reflected in public feedback, especially around women's and family needs
- There was a mixed reaction to the prospect of more remote consultations and virtual appointments.
- There was support for the cancer care proposals. The majority felt that cancer care should be located in the hospital, co-located with specialist services on one site
- Participants were supportive of the proposals for elective care if it meant that operations would be protected

In addition, we have engaged with relevant statutory bodies such as the clinical senate and the health overview and scrutiny committees (HOSCs).

The key issues have all been addressed through different means – for example through wider integrated care system strategies and aims, continued and targeted engagement efforts and specific programme plans. As a result, we have confidence of a strong basis for going out to public consultation.

3.1 Introduction

In this chapter we set out how we have engaged people in the TNUH proposals. Key themes and learnings from the engagement sessions have been identified to inform various development stages. This has been supported by a number of communication and engagement activities. Undertaking such activities has been key to both enabling and demonstrating strong public and patient engagement.

The programme has been supported by a communications and engagement workstream which has been responsible for harnessing communication and engagement effectively. This includes communication and engagement with staff at Nottingham University Hospitals NHS Trust (NUH), widespread public and stakeholder involvement, and involving NHS and social care leadership on a system-wide basis. The communications and engagement workstream has supported a series of engagement events that underpin the stakeholder engagement planning and management. The pre-consultation business case (PCBC) reflects the following phases of work:

- Pre-consultation engagement phase 1 – clinical design principles
- Pre-consultation engagement phase 2 – options for consultation
- Conclusions from pre-consultation engagement
- Plan for public consultation (see chapter 11)

We have provided a clear link between documented patient and public experience and how engagement, analysis of local patient public experience and national user reports have influenced the models of care. Clear engagement and transparency through the options appraisal process are also key.

To deliver a robust process there must be evidence that the proposal satisfies the government's tests of service reconfiguration and is affordable, in both capital and revenue terms. One of the government's tests of service reconfiguration is strong public and patient engagement.[5]

To meet these tests of strong public and patient engagement, patients and the public have been involved in the development, planning and decision making of proposals for this service reconfiguration. Effective involvement has meant being open and transparent about proposals, enabling local stakeholders to have the opportunity to influence change.

After submission of the PCBC to the Nottingham and Nottinghamshire Integrated Care Board (ICB), there will be a period of formal public consultation with an opportunity for the wider public to feedback on proposals. The communication of these proposals has been guided by a number of principles to allow for inclusion, transparency and trust.

[5] NHS England, 2018. https://www.england.nhs.uk/wp-content/uploads/2018/03/planning-assuring-delivering-service-change-v6-1.pdf

3.2 Engagement principles

The four engagement principles that underpin the foundation of the pre-consultation engagement plan for the TNUH programme are based on the Gunning principles[6] . These are:

- **Consultation must be at a time when proposals are still at the formative stage.** This means that a final decision has not yet been made, or pre-determined, by the decision-makers.
- **The proposer must give sufficient information for any proposal to permit intelligent consideration and response.** This means that the information provided must relate to the consultation and must be available, accessible, and easily interpretable to provide an informed response.
- **Adequate time is given for consideration and response.** This means that there must be sufficient opportunity for patients, the public and staff to participate in the consultation.
- **The product of consultation is conscientiously taken into account before a decision is made.** This means that decision-makers should be able to provide evidence that consultation responses were taken into account before a final decision is made.

In addition to the Gunning principles, the following additional principles have been adopted in line with best practice. These are:

- Making sure our **methods and approaches are tailored** to specific audiences as required.
- Identifying and using the best ways of reaching the largest amount of people, and providing **opportunities for vulnerable and seldom heard groups** to participate.
- Providing **accessible documentation** suitable for the needs of our audiences, including easy-read options.
- Offering **accessible formats** including translated versions relevant to the audiences we are seeking to reach.
- Arranging our engagement activities so that they cover the **local geographical areas** that make up Nottingham and Nottinghamshire.
- Informing our partners of our **activity and the sharing of our plans** at the earliest opportunity.

These principles have been used to define the approach we have taken to engagement.

3.3 Approach to engagement

We have taken two key approaches to engagement prior to any decision-making to health services. The first approach is engagement with system-wide clinical staff members to agree on and refine the new clinical model. The second approach is engagement prior to the consultation period to inform patients and the public about how the proposals have been developed, to seek views from diverse communities, and for people to inform the decision-making process.

[6] Local Government Association, 2019. https://www.local.gov.uk/sites/default/files/documents/The%20Gunning%20Principles.pdf

3.3.1 Approach to clinical engagement and involvement

There are six clinical workstreams, which are aligned with the NUH divisions and the key areas of service reconfiguration within TNUH, as shown in Figure 32. The workstreams are overseen by a clinical lead from NUH and, to ensure a balanced system perspective covering primary and secondary care, there is also an identified GP lead. Alongside the clinical workstreams supporting the development of the programme, there is an ongoing process of engagement across the whole of the NUH workforce. Please see section 3.7 for more details.

3.3.1.1 Clinical Advisory Group

The Clinical Advisory Group (CAG) comprised of six clinical leads, the Nottingham University Hospitals NHS Trust (NUH) medical director, the Clinical Commissioning Group (CCG, superseded by the Integrated Care Board in April 2022) joint clinical chair and the programme GP clinical lead. The approach to clinical engagement was designed using a patient pathway approach between wider system partners and involvement from all six NUH divisions in the clinical workstreams. The NUH divisions are:

- medicine
- surgery
- clinical support services
- family health
- cancer
- ambulatory

To ensure a balanced system perspective between primary and secondary care, there was clinical involvement in each clinical workstream with both a GP lead and a clinical lead from NUH. Key clarifications and developments were planned through the working groups to obtain wider system clinical views and those of the clinical workstreams. The outputs were brought back through CAG to ensure consistency and acceptability.

3.3.1.2 Individual working groups

Key specialist-specific developments and revisions to the clinical model are managed by individual working groups. Working group outputs are reviewed and signed off by the CAG. Where changes to services as part of TNUH will potentially impact on individual specialties and divisions, clinical leads from other parts of the system have engaged in discussions, both in bespoke meetings and through the strategic oversight group. Examples of this process include meetings with clinicians from Sherwood Forest Hospitals to discuss urology provision and maternity capacity and patient flows.

3.3.1.3 Feedback to Clinical Design Authority

The GP lead provides regular feedback to the Nottingham and Nottinghamshire Clinical Design Authority, a clinical forum focussed on system transformation

3.3.2 Stakeholder reference group (SRG)

A stakeholder reference group (SRG) was established to provide support, advice and challenge to the patient and public involvement work for the TNUH programme. The group is formed of lay or patient representatives, members of staff working with health and care organisations or voluntary sector organisations. The duties of the SRG are:

- Reviewing plans for engagement and consultation to ensure that they are inclusive, accessible and focussed on the impacts the programme will have
- Review engagement materials to ensure that they are inclusive and accessible and will enable constructive feedback
- Review engagement reports to ensure that they properly reflect feedback from the public
- Support the programme in highlighting the key feedback points that should be responded to and reflected in plans as they develop
- Provide challenge to the programme to ensure that feedback is influencing plans
- Support the production of a highlight report from the group to the Programme and Partnership Board

This allowed for patient experience groups to feed back their comments, concerns and queries in a systematic way. The SRG also cascaded information to communities around the programme, including how people can become involved, and to maximise participation in wider engagement activities.

3.3.3 Approach to pre-consultation engagement

Our approach to communications and engagement has supported a process of pre-consultation that is robust and transparent. A range of stakeholders, including local patients, carers and residents, were given the opportunity to engage with each stage of proposal development, and then to influence the programme from an informed perspective as the PCBC was developed.

The SRG was established to support active engagement for each stage of development and potential impact of the reconfiguration proposal. The SRG was mobilised with representation from the health and care system, which included:

- local and NHS organisations and bodies
- Voluntary, Community and Social Enterprise (VCSE) organisations
- patient experience groups
- Healthwatch (chair)

The first phase of engagement, which was in 2020, set out the aspiration for how services could look in the future across emergency care, family care, elective care and cancer services. This process helped to identify a set of proposals for each of these areas, and this is what was tested with stakeholders and the public during the second phase of engagement in 2022.

3.3.4 Healthwatch Nottingham and Nottinghamshire

Healthwatch Nottingham and Nottinghamshire, an independent local champion for people who use health and social care services, were commissioned to carry out engagement with groups that the Nottingham and Nottinghamshire Integrated Care Board (ICB) sometimes struggles to reach directly, and with whom they have an established relationship as a trusted advocate. This provided a key link between the work of the programme and the citizens of Nottingham and Nottinghamshire. Healthwatch also provide an independent chair to the SRG which is comprised of key community representatives, patient leaders and local organisations, including representation from the voluntary and community sectors. Members had been selected because of their ability to feed in the views of wider groups and networks, and cascade information out, and thus expand the reach of the programme's engagement. The Chief Executive of Healthwatch was the independent chair of the group and also represented the group in key programme workshops on options development and in presentations on the findings of engagement to the CCG Governing Body and the Tomorrow's NUH Programme Board.

Healthwatch played three key roles in supporting the Tomorrow's NUH programme:

- Scrutiny of local health and care commissioners to ensure that we listened to the public, provided excellent care, provided quality signposting and were transparent.
- Made a difference by collecting and providing insight from patients and communities to make recommendations to improve services for the public. The insights were then scrutinised to help influence improvement.
- Worked in partnership across local, regional and national networks of Healthwatch and the Care Quality Commission (CQC) to ensure issues and opportunities were acted upon and best practice shared.

Healthwatch served as an external agency and were supported by a number of methods and materials to maximise levels of engagement and outreach.

3.3.5 Specific engagement undertaken

We undertook a series of specific activities to ensure that the engagement was accessible to a diverse range of communities with multiple routes to access, obtain and provide feedback.

We launched a one- month phase of public engagement for pre-consultation phase 1, and a one-month phase of public engagement for pre-consultation phase 2.

Our aim was to ensure that robust stakeholder, patient and public engagement informed the development of the PCBC, including potential solutions for the development of any options for change. The communications and engagement objectives were designed to:

- Generate meaningful and actionable patient, citizen and stakeholder feedback and insights that could be used to develop the PCBC.
- Collate, analyse and consider the feedback we receive to inform the development of the PCBC.
- Ensure that the Integrated Care Board (ICB) met its statutory duty to involve the people affected in the development of plans for service changes.
- Ensure the ICB met its statutory duty to involve the local authority / authorities in any development of proposals for substantial variation to services.

- Ensure that our pre-consultation engagement was transparent and met statutory requirements and best practice guidelines.
- Undertake significant and meaningful engagement with local stakeholders.
- Clearly articulate the implications, impact and benefits of our proposals.
- Create a thorough audit trail and evidence base of feedback.
- Develop a comprehensive programme of communications and engagement activity that delivers these objectives in a COVID-19 context, through non-contact methods.

In addition, we also carried out engagement with relevant statutory bodies including the Health Overview and Scrutiny Committees, the Clinical Senate and the Local Health Resilience Partnership. See section 10 for further information on this.

3.4 Pre-consultation engagement phase 1 – clinical design principles

The first phase of pre-consultation engagement took place from 21st November to 15th December 2020. During this engagement process, the outline clinical model was described, so people were able to provide their feedback on the model developed for the programme. At this time, our proposals were in a formative stage.

3.4.1 Methods and materials

Healthwatch and the North of England Commissioning Support Unit (NECSU) were commissioned to develop collateral to support the pre-consultation engagement phase.

Three virtual engagement events were staged for people to give feedback about the proposals and to ask any questions they had to Clinical Commissioning Group (CCG) representatives. A total of three virtual events were delivered:

- **Virtual Event 1**: 8th December 2020 (11 attendees)
- **Virtual Event 2**: 8th December 2020 (11 attendees)
- **Virtual Event 3**: 11th December 2020 (12 attendees)

Individuals were also given the opportunity to discuss their thoughts about the proposals for the emergency, family and cancer care services. The three focus groups included:

- **Focus Group 1** - **Emergency care**: 9th December 2020 (5 attendees)
- **Focus Group 2 - Family care:** 10th December 2020 (2 attendees)
- **Focus Group 3 - Cancer care:** 10th December 2020 (4 attendees)

A set of briefing materials and a survey were developed to support the programme, with the survey running for a four week period from 21st November to 15th December 2020. **527 participants** participated in the engagement by either completing an online survey, attending an engagement event or focus group, or provided a response to the promotion of the engagement on social media. Feedback was also collated from across social media channels and through direct enquiries via phone and email. Materials were developed in easy-read format and available in translated versions on request.

Healthwatch also gathered the views of **150 people** across Nottingham and Nottinghamshire, focusing on people form specific cohorts including:

- black, Asian, minority ethnic and refugees (BAMER)
- people with long term conditions / poor health outcomes
- people with a disability

- frail older people
- maternity service users
- young people
- lesbian, gay, bisexual and transgender people (LGBT)

In addition to the survey, events programme and focus groups, we undertook a comprehensive set of briefings with local community organisations with an interest in, and / or impact from, the programme. The development of an Integrated Impact Assessment (IIA – see also chapter 7) was then aligned to engagement activity, with the organisation undertaking the IIA analysis attending key engagement events and meetings to directly influence development.

3.4.2 Pre-consultation engagement phase 1 findings

A workshop was held on 7th January 2021 with the purpose of collectively agreeing the key messages to take forward from the pre-consultation engagement reports from NECSU and Healthwatch.

The key points were as follows:

- People overall were supportive of the plans but wanted more detail.
- Care closer to home and less unnecessary time spent in hospital are seen as benefits of the proposals.
- People supportive of specialist mental health services in hospital, connected to community mental health services
- People could see the benefits, in particular of centralising emergency and maternity and of separating elective and emergency care services.
- More community cancer screenings seen as positive, but people queried if we were actually going to undertake more community screenings.
- Access and accessibility for patients were seen as important.
- Location and accessibility was seen important to people, that included parking, venues and transport in particular.
- Use of remote appointments was seen as both a benefit (particularly for those with childcare responsibilities) and a concern (for those facing barriers to accessing services this way).
- Concerns and questions arose about the staffing model, including whether the proposed model was sufficient to meet demand. There was also concern that moving services into the community may dilute specialist care, and that there would not be sufficient staff in community and primary care.
- Concerns arose generally about moving services into the community as primary care and community services are perceived as already stretched, and concern about how well joined up services would be across primary care, community and acute services.
- Concern that implementing changes will result in disruptions to services.
- Good communication across the system was seen as important, and special access and communication needs should be part of plans
- Credibility of the model was questioned e.g. ‘too good to be true’.
- More engagement with families felt to be needed on maternity proposals.
- Concerns about choice in maternity services.

- Areas that are not covered within plans were flagged e.g. older people, palliative care etc.

It was noted that Healthwatch were commissioned to target specific communities who may be underrepresented in the wider engagement programme, and that the profile of respondents reflected this.

It was acknowledged many of the key themes across the Healthwatch and NECSU engagement reports were consistent. Having identified and agreeing to the key themes from the engagement activities, key messages were agreed and taken forward.

3.4.3 Agreed key messages to take forward

We agreed the following points as key to take forward in any further engagement, programme developments and within the future planned consultation:

- We need to be clearer and more transparent about the finances.
- We need to cover cross-cutting themes such as older people and palliative care within the model.
- Explaining the whole model including the link between out-of-hospital care and acute services, and how we will staff and resource services is key.
- We need to explain the staffing model in a way people can understand to reassure them that the model can be resourced.
- We need more detail on the proposals to enable meaningful engagement.
- We need to reference other transformation work that supports and enables the plans to reassure people we are looking at care holistically.
- Areas we note in our proposals but don't fully explain need to be clear for public understanding, so as not to leave more questions than we answer.
- Explaining how physical access to the hospital within each option will work or be improved is important.
- Further engagement should be undertaken with carers.
- The feedback shows that we can be open and transparent and work in a co-productive way with patients and the public as proposals are further developed and refined.

These key messages were used to inform the next phase of pre-consultation engagement on the options for consultation.

3.5 Pre-consultation engagement phase 2 – options for consultation

The second phase of pre-consultation engagement options for consultation on the options for consultation took place from 7th March to 5th April 2022 in order to identify the best possible configuration of services across sites, to provide the best fit with the service offer and best value for money. Figure 16 highlights this engagement.

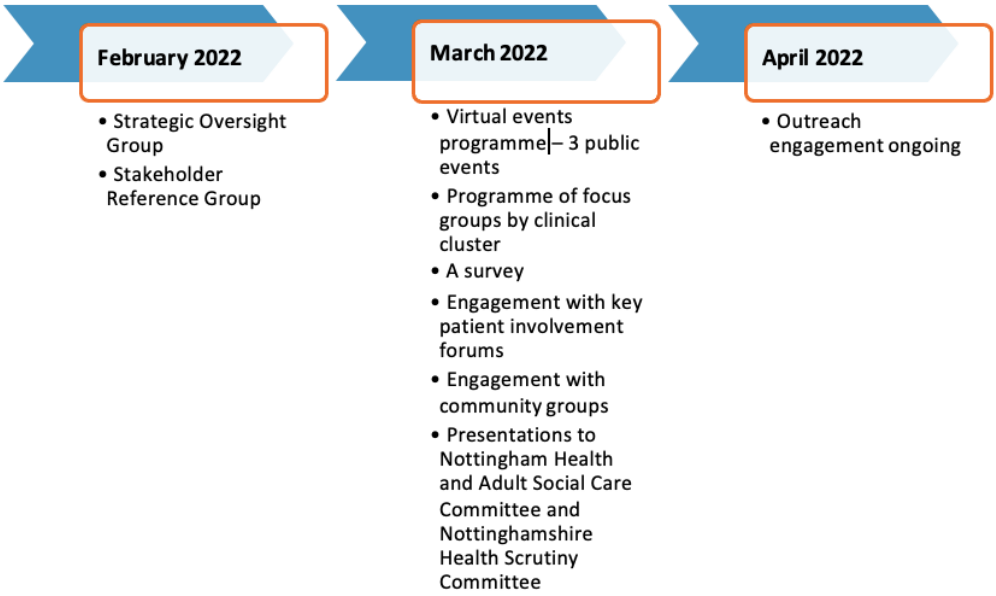


Figure 16 Phase 2 pre-consultation engagement

The aims of the second phase of pre-consultation engagement were to continue the conversation with the public to:

- Test the latest iteration of the proposed clinical model, seeking the views of the public about what future hospital services and facilities could look like
- Engage with groups and communities across Nottingham and Nottinghamshire, strengthening existing relationships and developing new ones
- Support the delivery of a successful public consultation in the future

3.5.1 Methods and materials

During this phase of engagement there was a total of **1,948** individuals participating through either completing an online survey, attending an engagement event or focus group, providing a response to the promotion of the engagement on social media (see Appendix 1:).

3.5.1.1 Elected member briefings

Eight virtual / face to face briefings for MPs and councillors were attended by Clinical Commissioning Group (CCG) representatives, providing information about the proposals, methods of engagement and requesting any support in dissemination to constituents.

3.5.1.2 Public engagement events

Three engagement events were hosted for members of the public to give feedback about the proposals and to ask any questions they had, to Clinical Commissioning Group (CCG, precursors of the Integrated Care Board until April 2022) and Nottingham University Hospitals NHS Trust (NUH) representatives. These were conducted online via Microsoft Teams.

At the start of each event, attendees were given an overview of TNUH and the outline clinical model and given the opportunity to ask questions or provide any comments they had about the proposals using the chat function.

In total, 34 individuals attended the public engagement events.

A recording of the public session was made available on the CCG YouTube channel for people who were unable to join the live event.

Key groups and communities were identified through an extensive stakeholder mapping database undertaken by the CCG. An invitation was sent to these stakeholders, offering a member of the programme team to attend community/groups meetings, provide presentations and obtain feedback.

In total, the programme team attended 36 sessions and spoke to over 330 individuals.

3.5.1.3 Specific interest sessions

Individuals were given the opportunity to discuss their thoughts about the proposals for three clinical areas (cancer, family care and outpatients) through tailored sessions. These sessions were led by CCG and NUH representatives. At the start of each event, attendees were given an overview of the programme and the details of the specific clinical area and had the opportunity to ask questions or provide any comments they had about the proposals. A discussion guide was also developed for each group to ensure that key questions were addressed. In total, 18 individuals participated in these sessions. Additional sessions were offered around other interest areas but were cancelled due to low uptake.

3.5.1.4 Interviews

Where individuals were unable to complete a digital or paper survey and were unable to attend one of the sessions, the engagement team were available to undertake interviews, over the telephone or face-to-face.

3.5.1.5 Survey

Members of the public, NHS staff and stakeholders were invited to complete an online survey about the proposals. The survey was circulated electronically to individuals and groups whose details were held on our stakeholder database.

Paper surveys were also available on request which contained the same questions as the online survey, with a freepost return option. There were no requests for other languages or formats.

The survey comprised a number of questions, where responses could be made via rating scales or through free text. In total, 613 individuals provided a response to the survey.

3.5.1.6 Media

A press release was issued to local and regional media, and as a result, gained coverage across the media spectrum – print, TV and radio. The article also appeared on Nottinghamshire Live – the online edition of the Nottingham Post, attracting nearly 160 comments.

Social media was also employed to support the engagement, with both CCG and NUH platforms being used to promote this phase of activity. Through Facebook advertising, targeted at more deprived areas within our geography, we were able to reach 36,339 people, from which 848 engaged with the post by either clicking on the link to the TNUH website page, reacting to it (using emoticons) or sharing the post with other Facebook users.

3.5.1.7 Communications

Internal communications were used to underpin the key messaging for the engagement and to encourage CCG and NUH staff to take part in the survey. Information was disseminated through staff newsletters, on TeamNet, Trust intranet and staff-facing social media channels and through the whole staff briefing.

3.5.1.8 Data analysis and reporting

All written notes taken during the public events, community group meetings, and qualitative responses from the survey were thematically analysed. Quantitative data was analysed to produce descriptive statistics. The findings for each of the five clinical areas are based on these analyses. Where survey respondents answered all of the demographic questions, this has enabled comparison of the four specific populations that may be disproportionally impacted by the proposed changes.

Survey demographics

In total, 613 individuals responded to the survey and 392 provided responses to all of the demographic questions presented. The demographic information for this cohort is summarised below:

- Most respondents were from Nottingham, Rushcliffe, Broxtowe and Ashfield. Some responses were received from residents in bordering areas such as Erewash, Amber Valley and South Kesteven
- A high proportion of respondents chose to provide only the first part of their postcode and so it was not possible to identify their location
- The majority were female (60.5%) whilst 15.8% were male and 4.1% other; nearly all indicated that their gender matched their sex registered at birth (76.3%). The age profile of respondents was those mostly aged between 45 – 54 years (19.3%)
- The vast majority were White British (69.9%) and heterosexual / straight (66.8%)
- 104 indicated that they had a disability, long-term illness or health condition (23.2%), whilst 8.1% were currently pregnant or had been in the last year. Most were married (51%), whilst 9.4% were single, 2.0% divorced/civil partnership dissolved and 9.4% cohabitating. Smaller proportions were widowed or a surviving partner from a civil partnership (2.8%) or in a civil partnership (0.8%)
- 147 indicated that they had caring responsibilities (37.5%). Most stated that they were Christian (32.1%) or did not have a religion (38.8%). Most responded to the survey as a member of public (72.4%) and/or a member of NHS staff (38.5%)

3.5.2 Pre-consultation engagement phase 2 findings

Findings from all of the responses received as part of the engagement activity, including the survey, focus groups, engagement events and responses received on social media were analysed by the TNUH team.

The statistics presented specifically relate to the survey data.

The themes were developed from all of the qualitative data collected through all of the methods of engagement.

The proposals within Tomorrow's NUH were considered as five clinical areas, and in summary the engagement showed that:

- 72% strongly / somewhat support the proposals for emergency care
- 64% strongly / somewhat support the proposals for family care
- 80% strongly / somewhat support the proposals for elective care
- 75% strongly / somewhat supported the proposals for cancer care
- 69% strongly / somewhat supported the proposals for outpatient care

Conclusions from the Phase 2 public engagement report showed:

- The majority of participants were supportive of the overall proposals that were outlined.
- Throughout the engagement activity it was clear there was support to have emergency care services co-located, to allow patients access to relevant treatments whilst on-site. However careful consideration around staffing and additional resources for this proposal, along with ensuring appropriate signposting to this service is required.
- Travel, parking and access to public transport were consistent themes across the engagement.
- Patient choice was strongly reflected in public feedback, especially around women's and family needs, particularly the co-location of fertility and gynaecological services.
- There was a mixed reaction to the prospect of more remote consultations and virtual appointments. Concerns were raised about the appropriateness for certain health conditions and patients.
- There was support for the cancer care proposals. It was highlighted that the fatigue caused by treatment, in additional to the physical and mental impact of these treatments, meant that patients wanted to access care closer to home. The majority felt that cancer care should be located in the hospital, co-located with specialist services on one site, as it would be advantageous to alleviate pressures, concerns and the emotions of patients and families, especially those who may be undergoing cancer treatment.
- Participants were supportive of the proposals for elective care if it meant that operations would be protected and less likely to be postponed or cancelled.

3.6 Pre-consultation engagement phase 3 – targeted engagement

The third phase of pre-consultation engagement took place between February 2023 and March 2023 and through the two previous phases of engagement we identified three areas where we would benefit from some targeted engagement work as we move towards the public consultation.

We wanted to understand the following:

1. Services at Ropewalk House (Audiology, Diabetic Eye Screening, Breast Screening and Cochlear Implants) – if these services were moved, where would patients prefer to access them?
2. The experience of residents of Basford, Bestwood and Sherwood who use services at City Hospital – if residents were no longer able to access services at City Hospital, where would they prefer to access them?

3. Facility for women's, children and family services (e.g. maternity, neonatal and children's services) – what do citizens think this new facility should be called?

3.6.1 Methods and materials

In total, just under 1,250 individuals were reached by completing an online survey, attending engagement meetings or events in the community, or engaging with the promotion of the engagement on social media.

3.6.2 Meetings and events

Key groups and communities were identified through an extensive stakeholder mapping database undertaken by the ICB Engagement team. An invitation was sent to these stakeholders, offering a member of the Programme Team to attend community/groups meetings, provide presentations and obtain feedback. In addition the programme team attended public events that were already arranged to specifically speak to citizens about Tomorrow's NUH.

In total, 23 meetings and events (9 in person and 14 virtual) were attended where we engaged directly with stakeholders about the three topics.

3.6.3 Survey

Members of the public, staff and stakeholders were invited to complete an online survey about the proposals. The survey was circulated electronically to individuals and groups whose details were held on our stakeholder database. Paper surveys were also available on request (there were no requests for other languages or formats).

The survey comprised a number of questions, where responses could be made via rating scales or through free text. In total, 264 individuals responded, with 222 completing the survey online and 42 sharing their feedback on a paper version (12 individuals were supported to fill in the paper survey through a conversation, and 30 self-completed).

3.6.4 Media

Social media was also employed to support the engagement, with the ICB Facebook platform being used to promote this engagement activity. Through Facebook advertising, targeted at the more deprived areas within our geography, we were able to reach 21,204 people, of which, 384 engaged with the post by clicking on the link.

3.6.5 Data analysis and reporting

In total, 264 people responded to the survey and 247 provided responses to all of the demographic questions presented. The demographic information for this cohort is summarised below.

Most responded to the survey as a member of public who had accessed the services highlighted in the survey (61%).

The largest proportion of respondents were from Nottingham City, Gedling, Broxtowe and Ashfield. A small number of responses were received from residents in bordering areas, such as Derbyshire and Lincolnshire.

More than three quarters of the respondents were women (including trans women: 77.2%) whilst 15.4% were men (including trans men), 1.5% would prefer to self-identify and 0.4%

identified as non-binary. Nearly all respondents indicated that their gender matched their sex registered at birth (96.2%). For the majority, the age of respondents varied between 35 – 64 years (64%).

The majority were White (British, Irish, European, or other) (85%) and heterosexual/straight (83%).

83 people indicated that they had a disability (34%). 57 indicated that they had caring responsibilities (23%). 106 stated that they did not have a religion or were Christian (43%).

3.6.6 Pre-consultation engagement phase 3 – targeted engagement findings

The statistics presented specifically relate to the survey data. The themes have been developed from qualitative data collected through all methods of engagement.

Ropewalk House – Travel and proposed relocation of services

- 46% found travelling to Ropewalk House extremely/somewhat easy
- 35% found travelling to Ropewalk House extremely/somewhat difficult

If services were moved:

- 34% would prefer to be seen at a location closer to where they live.
- 32% would prefer to be seen at City Hospital.
- 18% would prefer to be seen at QMC

Experiences of residents (Basford, Bestwood and Sherwood) - Proposed relocation of some services from City Hospital to QMC

- 25% strongly/somewhat support moving services from City Hospital to QMC.
- 51% strongly/somewhat oppose moving services from City Hospital to QMC.

If services were moved:

- 78% would prefer to be seen at QMC.
- 14% would prefer to be seen at Kings Mill Hospital.

Facility for Women, Children and Families - What should this be called?

We proposed 6 names for this facility and asked people to rank them from their favourite to least favourite. There was no overall consensus on the naming of this facility with top three being:

- 1st choice: Family Care Hospital
- 2nd choice: Family Care Centre
- 3rd choice: Women and Children's Hospital

Conclusions from the Phase 3 public engagement report showed:

- Travel to Ropewalk House was described as positively by many respondents who live in Nottingham City, due to the facility's city location, and the fact it is well-served by public transport. However, we received a limited number of responses received from those who live in the county.
- There were individuals who found the location of Ropewalk House difficult to access because it is situated on a steep hill. In addition, even those individuals who thought

Ropewalk House was somewhat or easy to access, thought the hill would be a challenge for those with mobility issues.

- There was no consensus on where people would prefer to go if services were not delivered at Ropewalk House. Those who preferred a hospital setting highlighted the importance of good transport links. Alternatively, those individuals who would prefer to access appointments in a community setting close to home said this would save time and reduce travel costs.
- It is unsurprising that residents living in Basford, Bestwood and Sherwood were less supportive of proposals that would move services further away from them (20% strongly/somewhat support the proposed relocation of some services currently located at City Hospital). These views must be considered in the context of what we heard through our second phase of pre-consultation engagement, where there was broad support for similar services to be co-located, as this would make access to the correct treatment in the right setting much easier for patients, reduce waiting times for appointments and ensure continuity of care (78% strongly/somewhat supported the overall proposals).
- If services were to be relocated from City Hospital to the QMC or King's Mill Hospital, then individuals expressed that they would prefer to go to the site that is most familiar to them. Those who would prefer to go to the QMC also referenced the various public transport links. Those individuals who would choose to go to King's Mill Hospital, said it was easier to access by car.
- The opinions on the name of the new facility are polarised. The use of 'Women' is not popular because it is not inclusive or reflective of the modern family unit. Those who prefer to call the new facility 'Women and Children's' did not like the use of the word 'Family' and vice versa. There were also mixed views on whether the new facility should be referred to as a 'Centre' or 'Hospital'. We will never achieve full agreement to the name of this service from all residents so we need to find a compromise which has sufficient consent rather than full agreement. The balance of feedback means that we can identify a suitable name for final consultation.

3.7 Engagement with local authorities and elected representatives

We have engaged regularly with local authority health overview and scrutiny committees and will formally consult with those local authorities whose populations may be impacted by our proposals. This consultation will be in line with our duties under Section 14Z45, Section 242 and Section 244 of the *National Health Service Act 2006* (as amended by the *Health and Social Care Act 201*2). The duty is also contained in the *Local Authority (Public Health, Health and Wellbeing Boards and Health Scrutiny) Regulations 2013*.

Throughout the programme, including in pre consultation engagement phases, we have regularly met and briefed health scrutiny colleagues in particular the Chair, Vice Chair and lead officers for Nottingham City Council and Nottinghamshire County Council Health Scrutiny Committees (HSCs). We kept the committees briefed on timelines, progress, outcomes of patient, public and staff engagement, reviews, as well as overall aim and direction of the programme. Figure 17 summarises when these updates were presented to the Committees.

Presentation date	Engagement forum
17 September 2020	Nottingham City HSC
10 November 2020	Nottinghamshire HSC
12 November 2020	Nottingham City HSC
20 January 2021	Nottingham City HSC
26 January 2021	Nottinghamshire HSC
13 July 2021	Nottinghamshire HSC
15 July 2021	Nottingham City HSC
17 March 2022	Nottingham City HSC
29 March 2022	Nottinghamshire HSC
19 May 2022	Nottingham City HSC
14 June 2022	Nottinghamshire HSC

Figure 17 Local authority engagement

Both HSC's have been supportive of the developing proposals and keen to ensure that the engagement and ensuing consultation are inclusive of all of Nottingham and Nottinghamshire's communities, and offering support to facilitate links through their networks as appropriate. Some of the key themes emerging from discussions at the HSC meetings are as follows:

- That travel and access to the hospital sites are carefully considered, particularly in relation to parking and access by public transport
- That engagement and consultation includes the range of community service providers as well as acute hospital staff, and that trade unions are involved
- That the developing proposals for Family Care are carefully managed alongside the work currently taking place to improve maternity serviced and the Ockenden review.
- That health inequalities are considered in developing the proposals
- That, whilst the programme offers many opportunities to innovate and embrace new technologies, an over reliance on digital provision could potentially lead to an increase in health inequalities.

We have maintained a regular flow of information to senior representatives of all the local authorities, including unitary, county, district, and borough councils, potentially impacted by our proposals and with an interest in the health and care services provided for their local populations. This has been mainly achieved through the distribution of regular updates and briefings.

Local authority colleagues are also engaged through the ICS Executive Leadership Group which meets fortnightly and provides an overview of the programme's progress for briefing and discussion as required. To support partnership working through enhanced understanding of each other's strategic priorities, local authorities also use that forum to informally brief NHS colleagues on developments and priorities in their areas with regular 'deep dives' into work they are doing where the NHS can be a supportive and/or collaborative partner. Working relationships are good and there are opportunities for smaller group briefings and conversations as needed, including with local authority leaders.

We have met regularly with elected representatives – Members of Parliament, council leaders and other local councillors. Communications have included email updates as well as briefing sessions, as reflected in Figure 18.

Presentation date	Engagement forum
4 March 2022	Briefing session with Chair and Vice Chair of Nottinghamshire HSC
4 March 2022	Briefing session with MPs
8 March 2022	Briefing session with Chair and Vice Chair of Nottingham City HSC
8 March 2022	1-2-1 briefing session with MP
18 March 2022	Briefing to Discover Ashfield Board

Figure 18 Elected representative engagement

3.8 Ongoing engagement

There is an ongoing programme of internal communications and engagement within Nottingham University Hospitals NHS Trust about the Tomorrow's NUH programme, recognising the importance of keeping staff updated about developing proposals for service reconfiguration and the progress of the programme.

In addition to a series of 'Chapter Documents' that set out the progress of the programme as it progresses (available on the Intranet and on the Trust website along with a regularly updated list of FAQs), there have been a number of online workshops and presentations for staff to join publicised through the weekly Trust Briefing newsletter, through staff-facing social media and via screen savers. The most recent of these, in early November 2022, was attended by around 250 members of staff. Nine 'pop up' stands were held during October across the Trust in areas of high footfall, and at different times of day to capture as many members of staff as possible. This was an opportunity for staff to discuss the programme with the team and to take copies of the chapter documents.

Postcards, with a QR code link to a simple survey to gauge ongoing levels of awareness and interest in the programme, have been given out in staff vaccination clinics and also at training days. One of the questions in the survey gives people an opportunity to request a

visit to their area from the programme team. The survey responses are regularly monitored so that these requests can be followed up.

There has also been a programme of visits and attendance at a range of internal meetings and away days. These have been, and continue to be, both targeted (at areas where staff could be particularly affected by the proposals, for example as their service could potentially move site or to a different part of the site), and in response to requests for an update on the programme. An overview of these is set out in Appendix 2.

Key themes emerging from staff briefing sessions are as follows:

- Workforce – how we will ensure we have enough staff, and concerns about the impact on staff if they had to change their working base. Staff are keen to understand in detail what plans will mean for them.
- Parking – lots of concerns, particularly in relation to QMC if more services are to be based on site, and short-term impact of parking provision off site during the build.
- Likely funding and how far it might stretch, in order to understand the extent of the likely change, and queries about whether some of the more problematic areas of backlog will be addressed through TNUH.
- Potential impact of TNUH on current planned service changes i.e. will plans have to be put on hold in order to align with the programme.
- Impact of the hot/cold site split on patient care, particularly in relation to the cancer element of the model, and the impact for support services such as pathology or pharmacy. Staff were keen to seek reassurance that the plans would not negatively impact patient safety.
- Integration with wider system change e.g., development of community diagnostic hubs, and how more extensive use of technology (e.g., remote monitoring/ virtual appointments) is being factored into plans.
- Timescales for more detailed service level planning and discussions – staff want to know when they will be able to talk through what their service might require, and how they could influence planning.

The engagement with NUH staff is a continuous process throughout the programme so we can ensure we reflect the staffs voice in our plans. As the programme moves beyond the decision-making stage, NUH staff will co-create the detailed implementation plans.

The internal communications plan to June 2023 is attached in Appendix 2.

3.9 Summary

Based on all of the engagement to date there were a number of key themes which came through consistently from all sources. These are presented in Table 1, along with the response from the programme on the issues raised.

Table 1: Summary of key themes and programme response throughout engagement

Development Area	Issues Raised	Programme Response
Workforce	Concerns on the impact of staffing in terms of resource, training, and skills to meet the demand and retention with regards to impact of changing staff's usual work base	• The NUH People Delivery Plan has been created with a road map and priorities pertaining to workforce planning and recruitment to ensure a vast and robust workforce and reach NUH's aim of becoming a top NHS employer (see Appendix 2 • TNUH Workforce Engagement Plan
	Concerns around moving more care to primary and community and the availability of resources as these are areas which are already perceived as struggling	• The ICS is working to deliver a programme of community care transformation which looks to maximise the use of community assets, explored in section 5.2 (see Appendix 3)This programme of transformation is closely aligned with the TNUH programme and how secondary services are reconfigured to ensure alignment with community and primary care.
	Concerns on impact for travel for patients with potential increased travel times and issues with public transport	• A travel plan is being produced for the full public consultation to build on the travel impact analysis and look at options for communities most impacted by the proposed changes

	Access within the QMC site including parking for staff and patients and how to find services	• As part of our Tomorrows NUH Vision we will have a smart, digitally enabled hospital which will include using digital wayfinding. The ambition will be the utilisation of an app that will allow patients to find their way around the hospital with ease and will alert patients of when they need to set off from their location to the appointment and gives them an estimated time to arrive at the appointment location.
	The increase in remote and virtual consultations may exclude some groups	• As part of the ICS data, analytics, information and technology strategy (DAIT), support will be provided to the community to mitigate the risk of perpetuating health inequalities through training and help with digital, furthermore the DAIT board is committed to understanding of additional barriers experience by the public with the impact of the COVID-19 pandemic on digital access to health. Further detail is in section 5. • There will be further engagement with the public on this issue to highlight virtual consultations are just one option for care model, with face to face still available
	Implementing changes will result in disruption to services	• A robust implementation plan for the construction, changes and enablers is continuously being developed with risks for the programme continuously monitored. Further detail is in section 12.
Care model	Impact on patient choice with move of family health services to QMC in terms of maternity services	• Continuing to work closely with local Maternity Voice Partnership and Voluntary, Community and Social Enterprise (VCSE) sector to ensure an ongoing dialogue with the public. Further detail is in section 11.

	Concerns around where gynaecology and fertility services are going to be based	• Ensuring careful consideration to how gynaecology and fertility services are delivered and incorporating feedback on this from the public consultation. Further detail is in section 11.
	Some areas were not flagged within the original plans – for example older people and palliative care	• There are no significant changes to care of older people however the outline clinical model which underpins the clinical design principles is designed in such a way to enhance population health and an integrated system which provide appropriate out of hospital care for the whole population. Further detail is in section 5.
Inequalities	The impact on service changes for deprived communities centred around City Hospital	• Consideration to health inequalities is central to the TNUH programme and has been considered throughout – engagement for consultation takes particular consideration of harder to reach populations and methods of engagement / further detail is in section 11. • In addition, the ICS health inequalities strategy outlines a clear vision on how these will be addressed. Further detail is in section 5.

4 Case for change

This chapter introduces the context for service reconfiguration at NUH, the urgency of the change required and the objectives for the programme. Our case for change has been developed with our clinicians. We have looked at current and future demand, dissected our current clinical models and synthesised the direction of travel across the Nottingham and Nottinghamshire to understand areas where we are not meeting the needs of our population and where we can improve quality and outcomes. In particular, we have identified three main challenges with our main acute provider, Nottingham University Hospitals (NUH) NHS Trust:

- The clinical model and supporting estate are not configured in a way to address growing health needs and deliver quality care for the future.
- Some of our clinical services are not sustainable and do not consistently deliver best practice care. This is primarily because we have several services split across sites, duplicating finite resources and meaning that services are not optimally co-located.
- We have many ageing buildings that are expensive to maintain and are no longer fit for the purpose of providing modern healthcare.

We have an ageing population, who live with multiple co-morbidities and experience high levels of deprivation. By 2035, the number of 65 to 85 year olds in Nottingham and Nottinghamshire will increase c. 30% and the number of 85+ year olds will increase c. 90%. Deprivation levels are high in Nottingham City, ranking with an IMD that is 11th out of 317 districts. Evidence shows episodes of hospital care can reduce independence and increase future care needs, particularly for the frail and elderly. In light of this we recognise the need for a new model of care.

The configuration of our hospital services poses a challenge to the safety and sustainability of our clinical care. Some of our most at-risk emergency patients, those undergoing cancer treatment and women and babies must be transferred between sites to receive support from specialists in co-dependent services. This includes over 4,100 emergency transfers and approximately 150 high-risk women being transferred out of area each year. In some cases, working across both sites puts a strain on the workforce, exacerbating recruitment and retention issues. We currently run a maternity unit two hospital sites which creates duplication, competition for the same pool of staff and less-resilient rotas. Underlying staffing issues impact the quality of care we provide. Within our elective services, theatre staffing levels are a dominant constraint and have been limiting the volume of elective activity we are able to undertake and only 60% of patient are treated within the 18-weeks of referral compared with a target of >92%. Our future proposals must address the three interlinked issues of access to interdependent specialties, inter-hospital transfers and workforce issues.

The hospital estate is a critical limiting factor to our aspirations for a new care model to improve outcomes for patients. Poor quality estate has a negative impact on patient outcomes and experience. At NUH, our backlog maintenance £407.31m, of which 38% are critical and significant infrastructure risks. Left unchecked these pose a risk to continuity of care and safety for patients and staff. 25% of buildings on the City site are older than the NHS itself (pre-1949) and are not fit for purpose. We encounter multiple serious incidents, risks and other breeches that could cause harm to patients. These issues will continue to worsen and we need significant remedial action to enable us to transform care. The national New Hospital Programme (NHP) scheme investment provides the opportunity address all of these factors.

4.1 Introduction

We know that to realise our ambition to transform health and care services locally, so that people live longer, healthier, and happier lives, we will need to embrace new ways of working, leverage best practice and harness the power of technology across Nottingham and Nottinghamshire. The pandemic has underlined the need for transformation in our health and care services. We propose to change the way we support people to be healthy, deliver clinical services and utilise our hospital estate.

Our case for change has been developed with our clinicians and stakeholders. We have looked at current and future demand, dissected our clinical models and synthesised the direction of travel across Nottingham and Nottinghamshire to understand areas where we are not meeting the needs of our population and where we can improve quality and outcomes. In particular, we have identified three main challenges with, Nottingham University Hospitals Trust:

- The clinical model and supporting estate is not configured in a way to address growing health needs and deliver quality care for the future.
- Some of our clinical services are not sustainable and do not consistently deliver best practice care. This is primarily because we have several services split across sites, duplicating finite resources and meaning that services are not optimally co-located.
- We have many ageing buildings that are expensive to maintain and are no longer fit for the purpose of providing modern healthcare.

We have an urgent need for change across Nottingham and Nottinghamshire to achieve real benefits for patients, staff and communities. Major change is the only real and sustainable bridge to get us from where we are now, to where we need to be.

We have the opportunity to address the core challenges, improve services for our population and deliver modern healthcare services for our patients. We are committed to improving the safety of our services and the health outcomes to our patients, but are facing challenges that, without investment and changes, we will not be able to overcome.

It is the national New Hospital Programme (NHP) scheme investment that provides us with a unique once-in-a-generation opportunity to invest in our services to improve health outcomes for our patients, improve facilities for our workforce and play our part in a sustainable local and regional health service.

4.2 We are not always meeting the needs of our local population

We need to recognise the needs of our patients and reduce health inequalities where there are avoidable and systematic differences in health between different groups of people in our population. This programme, in addition to many other system-wide schemes, will contribute towards improving health inequalities and wider determinants of health.

Demographic and related socioeconomic factors have the greatest impact on overall health outcomes. Health and wellbeing are identified as key challenges faced in Nottingham and Nottinghamshire, as shown in Figure 19. This specifically refers to healthy life expectancy, inequalities and wider determinants of health, which are all covered in this section.

Figure 19 Factors effecting health outcomes7

Population health and health improvement strategies are required to manage the prevention of ill health and manage long-term conditions. Creating an environment in which people are able to keep active, maintain an appropriate weight and get support to stop smoking are all linked to improved health and wellbeing, taking more regular physical activity reduces the risk of premature mortality by 30%[8]. This will entail changes to service location, capacity, and provision across the care pathway.

4.2.1 Our population is growing older and spends more time in ill-health

There are some significant differences in life expectancy and healthy life expectancy (the amount of time spent living in poor health) across Nottingham and Nottinghamshire. The problems associated with years spent in poor health will be exacerbated in the future as our population becomes older.

We need to keep pace with local population changes. By 2035, the number of 65 to 85 year olds in Nottingham and Nottinghamshire will increase c. 30% and the number of 85+ year olds will increase c. 90%.[9] This will be increasingly pronounced in Nottinghamshire County where people are living far longer, with the population continuing to age over the coming years. The population age over 65 is due to increase from 176,100 in 2021 to 196,100 in 2026 (11% increase) and the population over 85 is due to increase from 22,500 in 2021 to 25,200 in 2026 (12% increase)[6].

This increase in the elderly population poses a significant challenge to the sustainability of our services, particularly given the increasing rates of age related illnesses. For example, the under 75 mortality rate from cancer considered preventable for Nottingham in 2021 was

[7] Nottingham and Nottinghamshire Integrated Care System 5 Year Plan, 2019/20 – 2023/24

[8] Improving Health and Wellbeing in Nottinghamshire, 2019 https://www.ageuk.org.uk/globalassets/age-uk/documents/programmes/health-and-wellbeing-alliance/july-2019-health-and-wellbeing-resources-pack-for-nottinghamshire-compressed.pdf

[9] https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/ageing/articles/livinglongerhowourpopulationischangingandwhyitmatters/2018-08-13

[6] Nottinghamshire Insight, 2022. https://www.nottinghamshireinsight.org.uk/people/key-population-facts/

72.4 per 100,000 compared with an East Midlands region average of 53.1[10]. The number of cases is rising and by 2028 there will be 55,700 people in Nottingham and Nottinghamshire living with cancer, double the number in 2014[11].

Nationally, it costs twice as much to treat a 65-year old than a 30-year old, and is even higher for older age groups[12]. Costs are driven by the ongoing care needs of this group, exacerbated by the reliance on expensive hospital care. Within Nottingham and Nottinghamshire, over 75s make up less than 10% of our local population but $^1/_3$ of emergency admissions and $^1/_2$ of emergency bed days, this increases to $^2/_3$ of emergency bed days when including over 65s[13].

This puts a strain on the capacity and financial resilience of our services, resulting in poor outcomes from delayed treatments or patient transfers.

4.2.2 There are high levels of deprivation and inequality across the region

There are high levels of deprivation in certain parts of Nottingham and Nottinghamshire and inequalities in terms of the outcomes that people experience. The level of deprivation in an area can be used to identify those communities who are most in need of services, although typically these communities experience worse outcomes. This is one of the biggest challenges we face as a health system, given that wider determinants of health contribute 80% towards health outcomes[14].

The Indices of Multiple Deprivation (IMD) is one of the most common measures of deprivation which applies weighting to a number of themes, which includes housing, education and skills, income deprivation and crime. Nottingham City has one of the highest levels of deprivation in England, ranking with an IMD that is 11th out of 317 districts, and some of the Lower Super Output Areas are in the worst 10% nationally. Nottingham City, where QMC, City Hospital and Ropewalk House are located, comprises of 182 lower super output areas (LSOAs) – this is on a scale where a ranking of 1 indicates highest deprivation, to 32,844 which indicates lowest deprivation[15]. As a result, the proportion of people from the most deprived quintile attending the NUH emergency department is 36.6% compared to the England average of 26.8%.

Figure 20 shows the patterns and disparities in deprivation across the Nottingham City area. Deprivation is a strong driver of illness and poor levels of health, which has become more evident as a COVID-19 differential. Our ICS has large variations in the levels of deprivation. For example Nottingham City, Mansfield and Ashfield are some of the most deprived districts in England compared to Rushcliffe, which has significantly lower levels.[3]

[10] Office for Health Improvement & Disparities, Public health profiles

[11] NUH Divisional Clinical Services Strategy 2018

[12] UK health and social care spending https://www.ifs.org.uk/uploads/publications/budgets/gb2017/gb2017ch5.pdf

[13] Nottingham and Nottinghamshire Integrated Care System 5 Year Plan, 2019/20 – 2023/24

[14] Nottingham and Nottinghamshire ICS, Health Inequalities Strategy 2020-2024, 2020 https://healthandcarenotts.co.uk/wp-content/uploads/2022/04/Notts-ICS-HI-strategy-06-October-v1.8.pdf

[15] https://www.nottinghaminsight.org.uk/themes/deprivation-and-poverty/#:~:text=Nottingham%20has%20high%20levels%20of,using%20the%20average%20score%20measure.&text=Nottingham%20City%20comprises%20of%20182,to%20the%20measures%20of%20deprivation.

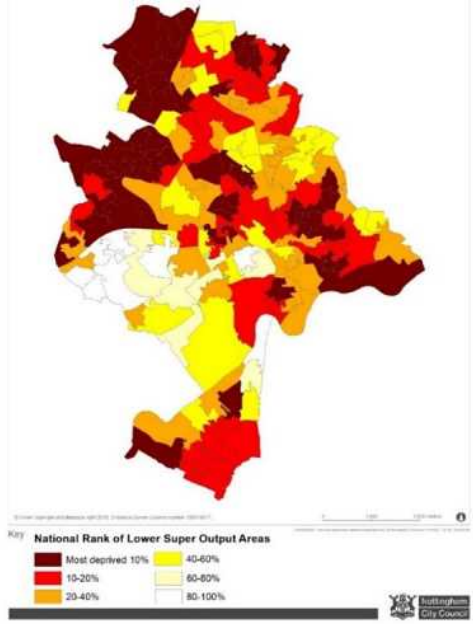


Figure 20 Indices of Deprivation 2019 - Index of Multiple Deprivation for Nottingham City16

It is our deprived communities that have the greatest exposure to a range of factors that impact adversely on the health of individuals, families and communities, including fuel poverty, poor housing, higher unemployment and low paid jobs, lower educational attainment and poorer access to services; as illustrated in Figure 21.

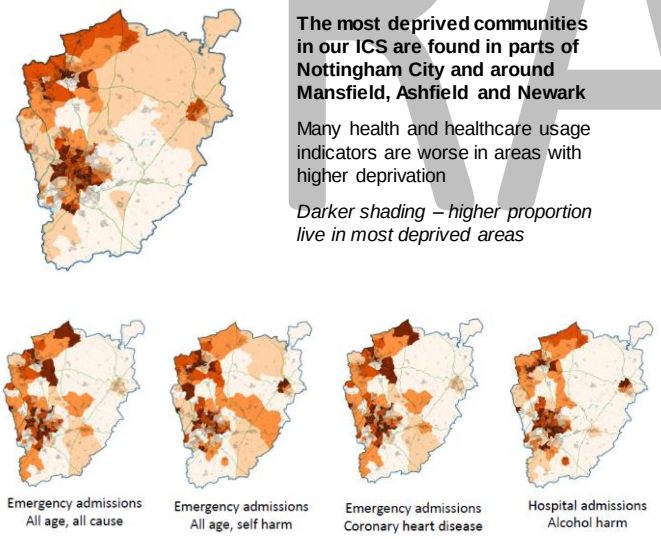


Figure 21 Patterns of deprivation in Nottinghamshire17

Overall there are significant variations in deprivation levels and health inequalities across the ICS which present a challenge to how we configure services in the future. We need to ensure that our clinical services are focused on addressing population health needs in a

[16] Nottingham City Council, Indices of Deprivation – City Compendium, 2019

[17] Nottingham and Nottinghamshire Integrated Care System 5 Year Plan, 2019/20 – 2023/24

proactive manner and that services are integrated so that care is accessible and delivered in the right place, at the right time.

4.2.3 There are differences in life expectancy and health outcomes across Nottingham and Nottinghamshire

Within Nottingham City, citizens have a lower life expectancy than elsewhere in the country and may expect to spend a longer period of their life in poor health and therefore have greater need of health and care services.

Compared with the England average, Nottingham's life expectancy for both males (76.6 years) and females (81.0 years) is significantly lower than the England average (79.4 male; 83.1 female). Although there has been an upward trend, as shown in fig 22, the gap between the Nottingham and England average has grown. Nottingham's life expectancy for men is currently ranked 138th out of 150 local authorities in England and 134th for women.

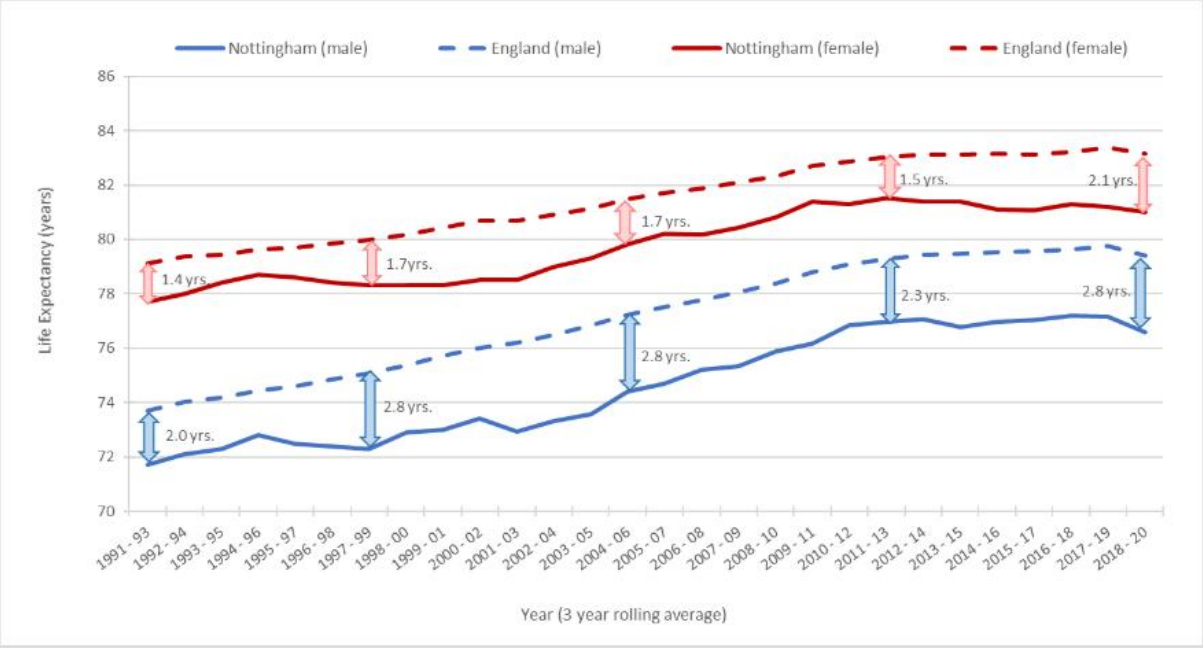


Figure 22 Trend in England and Nottingham life expectancy[18]

Figure 23 details the average life expectancy against healthy life expectancy for citizens in Nottingham City (although there are variations within different areas of the city). Public Health England (PHE) Health Inequalities in the East Midlands Report (2017) identified that Nottingham has the highest preventable mortality rate (along with several other cities). This has been identified by top five risk factors (obesity, alcohol and drug use, poor diet, occupational risks and smoking) that lead to years lived in disability.

[18] Nottingham City Council, Nottingham City: Life Expectancy and Healthy Life Expectancy (2022)

	Life expectancy (years)	Healthy Life Expectancy (years)	% of life in poor health	Number of years in poor health
Males	76.6	57.4	32%	19.2
Females	81.0	57.1	30%	23.9

Figure 23 Life expectancy vs. healthy life expectancy for Nottingham City citizens[19]

The largest contributors to the life expectancy gap in both males and females are circulatory disease, covid-19 and cancer which account for 65% of mortalities, as shown in Figure 24. Not only do these illnesses result in high mortality, they also traditionally place a high burden on healthcare resources. Across the ICS, 11.6% of emergency admissions each year are due to COPD, stroke, heart failure, asthma, diabetes, heart attacks, angina and hypertension[20].

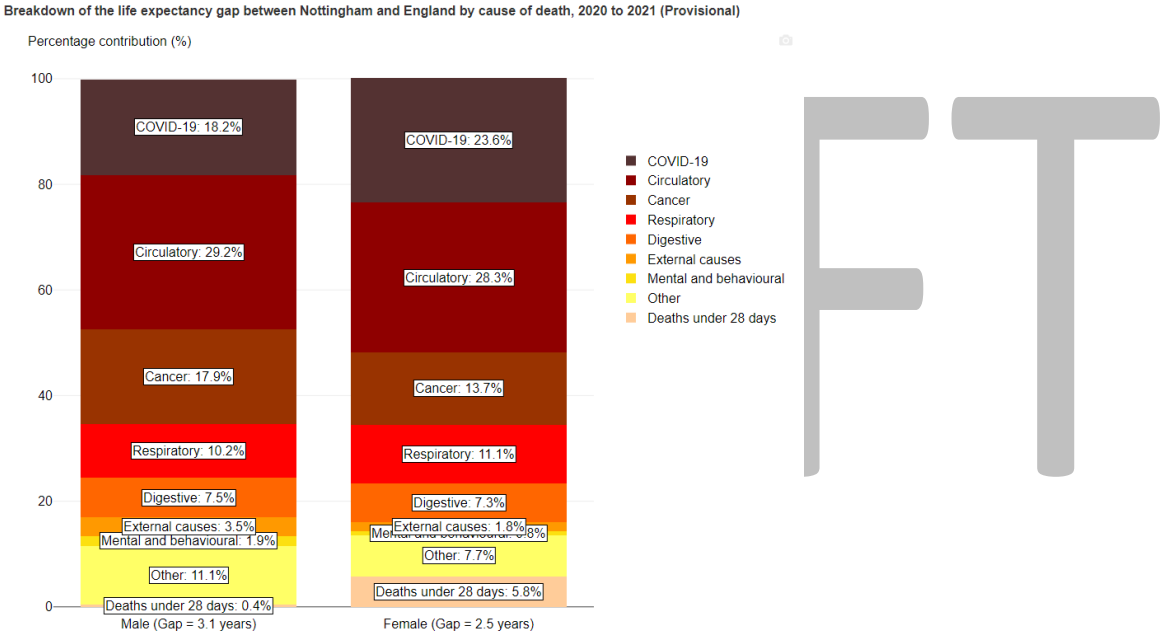


Figure 24 Breakdown of Nottingham causes of mortality[21]

On the other hand, in Nottinghamshire, citizens spend marginally less time in poor health than those in the city. This is reflected in Figure 25. The extent to which this is true varies depending upon where in the County they live – for 2017-19, life expectancy at birth for citizens in Mansfield is 78 for males and 81.5 for females, whereas for Rushcliffe life expectancy is 81.5 and 84.5 for males and female respectively. The 2011 Census reported

[19] Nottingham City Council, Nottingham City: Life Expectancy and Healthy Life Expectancy (2022)

[20] https://mk0healthandcary1acq.kinstacdn.com/wp-content/uploads/2020/04/8398-Clinical_Strategy_V6-1.pdf

[21] Nottingham City Council, Nottingham City: Life Expectancy and Healthy Life Expectancy (2022)

that in general, levels of disability and poor health were higher in the more deprived areas of Nottinghamshire.

	Life expectancy	Healthy Life Expectancy	% of life in poor health	Number of years in poor health
Males	79.6	63.4	20%	16.2
Females	82.7	61.6	25%	21.1

Figure 25 Life expectancy vs. healthy life expectancy for Nottinghamshire citizens[22]

4.2.4 We have high numbers of people with long term conditions

The number of people with multiple long term conditions is increasing which puts a strain on health services. Nationally, around 15 million people in England have a long term condition[23], in Nottingham 18.1% of people have a limiting or long term condition, higher than the 17.6% average in England[24]. Patients with multiple long-term conditions typically have poorer quality of life and clinical outcomes, longer hospital stays, are more costly to the health service, and may experience poorer continuity of care[25].

We know that older people are more likely to develop long-term health conditions such as diabetes, heart disease and breathing difficulties. They are also more at risk of strokes, cancer, and other health problems. Across Nottingham and Nottinghamshire, people often suffer with more than one chronic condition at a time and the prevalence of people living with multi-morbidities is forecast to rise dramatically across the population, significantly increasing the complexity of those people who do need health and care support.

Overall, the Nottingham and Nottinghamshire population is living longer with an increasing proportion of people living with multi-morbidities. We therefore need to address multi-morbidity prevalence to increase healthy life expectancy.

4.2.5 There are significant barriers to accessing services for some of our most vulnerable citizens

Severe and multiple disadvantage (SMD) is defined as experiencing two or more forms of the following forms of disadvantage: mental health issues; homelessness; offending; substance misuse. Given the nature of SMD, there is poor cross sector collaboration and coordination which acts as a barrier to people trying to access services.

[22] Life Expectancy at birth and Healthy Life Expectancy, 2017-2019, PHE Fingertips Data

[23] Long Term Conditions Compendium of Information: Third Edition (2012) https://www.gov.uk/government/publications/long-term-conditions- compendium-of-information-third-edition

[24] Health Inequalities Nottingham, East Midlands Academic Health Science Network https://emahsn.org.uk/images/EMAHSN_Health_Inequalities_-_Nottingham.pdf

[25] Improving the care of people with long-term conditions in primary care: protocol for the ENHANCE pilot trial, 2015 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5636040/

People experiencing SMD are likely to report poorer quality of life, face social stigma, and experience levels of multimorbidity are typically similar to those of more elderly people in the general population[26]. Nottingham City has the 8th highest prevalence of SMD in England. The Joint Strategic Needs Assessment (2019) estimated that there were 5000 citizens in the city experiencing SMD, and that these citizens would experience different barriers to accessing health and care services.[27]

Individuals with SMD are also more likely than the general population to have other needs, such as long-term health conditions or disability; or be subject to domestic or sexual abuse (particularly women); or to suffer community isolation (particularly Black, Asian and Minority Ethic people).

4.2.6 People could be better cared for closer to home, where appropriate

Evidence[28] shows that episodes of hospital care can reduce independence and increase future care needs, particularly for the frail and elderly. The longer the stay, the greater the risk of getting infections and muscle decline[29]. The associated loss of physical function, confidence and independence increases short and long-term care needs. Patients often feel lonely and isolated in a hospital ward and prefer to be cared for at home. For many conditions traditionally treated in hospital, community-based alternatives are now available and can be provided safely and effectively. Almost one in four admissions to acute hospitals could be avoided if there was better support for self-care and more early intervention services to prevent people's conditions deteriorating[30].

Evidence[31] shows that, at any given time, up to one in six patients in a hospital bed are not actively receiving acute hospital treatment and could be treated in an alternative setting (this includes treatment at home or in a step-down facility). Many of these patients are waiting for packages of care or placement.

In line with the NHS Long Term Plan we need to develop services that can meet the needs of our population, with a focus on preventing avoidable disease, supporting people to stay well and to avoid admission to hospital. When people do need to be admitted to hospital, we need to ensure the right services are available to them, quickly, in the most appropriate place, and that we can help them get back home again as quickly as possible.

The NHS Long Term Plan sets out a service model that takes the focus of care out of hospitals into the community, reducing pressure on emergency hospital services and allowing hospitals to provide consistently high quality, better care for patients who need hospital care, whilst playing its part in supporting a digitally enabled care network across the

[26] Multimorbidity, disadvantage, and patient engagement within a specialist homeless health service in the UK: an in-depth study of general practice data, BJGP Open, 2017 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6262212/#bib10

[27] Nottingham City Joint Strategic Needs Assessment: Severe and Multiple Disadvantage 2019

[28] Safe, compassionate care for frail older people using an integrated care pathway (NHS England, 2014)
[29] Hoogerduijn et al 2007; Lafont et al 2011.
[30] Reducing emergency admissions (House of Commons Committee of Public Accounts, May 2018)
[31] For example, Discharging older patients from hospital (National Audit Office, 2016); NHS hospital bed numbers: past, present, future (Kings Fund, 2021)

region. By working as a system, we can improve care for patients and optimise available capacity in the acute hospitals to treat more acutely unwell patients.

Technological advances offer the opportunity to provide many new models of care, e.g., virtual outpatient clinics or remote monitoring within the patient's normal place of residence, to provide better access or improve the quality of care for the population and can facilitate the increasing shift of care to out of hospital settings.

4.3 Our services are not clinically sustainable

We have a strong evidential base for the challenges we face and the gap between where we are now and where we want to be to deliver our ambitions for the people of Nottingham and Nottinghamshire. A new clinical model of care is required. This model must focus on integrated system working and performance standards, and deliver care from the right location, whether in-hospital or out-of-hospital, for a range of services. Part of this means we need to provide the right adjacencies between clinical areas and capacity to meet the demand.

4.3.1 Introduction

We know that the current model for delivering healthcare in Nottingham and Nottinghamshire does not achieve the best outcomes for our population and we face significant issues in meeting the quality and performance standards our patients expect against some of the key NHS targets. The high number of medically safe patients waiting for discharge remains one of the root causes of several other performance issues, constraining effective hospital flow and the utilisation of our bed base to support patients requiring acute care. Providing timely, high quality care for our patients within a new clinical model will be essential to meeting these standards.

4.3.2 Adult emergency care services

Our adult emergency care services are primarily challenged by the current split site configuration. This model relies on inter-hospital transfers, stretches our workforce and prevents us from achieving national quality standards and delivering national and local strategies.

We compromise the safety of high risk patients by transferring them between our hospital sites. There is evidence which suggests that that patient transfers, particularly unplanned transfers, are associated with longer length of stay and increased risks to clinical safety[32]. We currently transfer 4,196 emergency case between sites each year. Of this, approximately 1,155 transfers are in respiratory from QMC to City Hospital. This equates to c.50% of patients attending the respiratory assessment unit (RAU) at City Hospital transferred from the emergency department (ED) at QMC. These transfers significantly delay specialist review and impacting quality of care. On average it is 12+ hours before an emergency patient receives specialist input. This issue was noted by the Care Quality Commission in an inspection in 2019.

[32] British Journal of Anaesthetists (2017) 'Transfer of the critically ill adult patient' British Medical Journal (2019) 'Inter hospital transfer and patient outcomes

We have high medical bed occupancy of patients medically fit for discharge and inadequate availability of assessment beds which causes problem with hospital flow. Constrained flow out of ED, rather than surging attendance levels, is contributing to overcrowding and 14% of patients staying longer than 12-hours in ED in 2022, compared to a target of <2%. This is a consistent theme and was as high as 23% with 28 delay related harms compared to an England average of 6.8. An effective consultant-led model of care has been shown to be more efficient in delivering care, with decreased length of stay, more efficient use of beds, decreased rates of readmission and decreased need for patient follow-up[33].

Within burns and plastics, we are unable to maintain a compliant specialist registrar (SpR) doctor rota and there is a high frequency of cross-site working required at night and on call. The split site also impacts the level of consultant supervision provided on both sites. Vacancies in these key areas means that specialist input is not always readily available which slows down decision making, impacting on the quality of care patients receive. As a result, waiting times and staff attitude are the two main reasons our friends and families test (FFT) for accident and emergency consistently remains below target >90% for very good and good (in August 2022 we achieved 74%).

We are unable to co-locate vital interdependent services as recommended by national, regional and local strategies. The NHS Long Term Plan (LTP) outlines the requirement for Type 1 A&E departments to move to a comprehensive model which includes 7-day same day emergency care (SDEC), frailty services covering all specialities, and consolidation on urgent care on a "hot site"[34]. By providing a comprehensive, single site with access to specialist input and interdependent services, patients have rapid access to specialist emergency care, reducing steps in the pathway. In 2019/20, overcrowding and access to vital co-located services contributed to only 44% of ED attendances being seen within 4-hours and 8% of patients leaving without being treated, compared with 2% nationally. Providing SDEC and access to other facilities will enable improved flow though ED, facilitating discharge

4.3.3 Family health

Within family health we face challenges due to splitting maternity services across two sites, spreading workforce and capacity too thinly, and by not providing co-dependent paediatric and general surgery at City Hospital.

Limited cot capacity within NICU leads to high-risk women being treated out of area. Limitations in Neo-natal Intensive Care Unit (NICU) capacity are leading to approximately 150 high-risk women being transferred out of area each year. An average of 696 neonatal intensive care days is provided in out of area units each year due to the lack of capacity at NUH. In October 2019 for the QMC site alone, the Trust delayed the planned deliveries for 12 women, totally 45 days of delay, and 3 of these were transferred to out of area.

[33] Leading for Quality the foundation for healthcare over the next decade (Royal College of Physicians, 2010)

[34] https://www.longtermplan.nhs.uk/

In addition to limited physical capacity there is insufficient neonatal intensive care unit (NICU) activity across the region to sustain a unit on each site. Current guidelines recommend >2,000 care days are required per year to make a unit safe and sustainable based on evidence that strongly suggests larger, regional units with higher levels of activity area associated with better outcomes[35]. Currently both sites provide Level 1 NICU but neither have >2,000 care days of activity. Even accounting for the 696 out of area care days delivered, the combined total number of care days would still be insufficient to sustain a unit on each site. NUH have been able to access capital funding as part of a Maternity and Neonatal redesign programme which increase the number of cots at QMC, retaining its status as the lead intensive care centre for the region. The programme includes the relocation of the highest acuity cots to QMC from City and redesignation of beds serving high risk mothers in maternity wards in QMC. The City Hospital will be redesignated to a Local Neonatal Unit. These changes will be in place by December 2024 and will enable NUH to care for all high-risk mothers and babies within Nottingham and Nottinghamshire, ensuring that the QMC functions as the lead centre for the East Midlands Network.

A consolidated workforce, with a strong sense of identity and common purpose would contribute to a more resilient workforce. The current split site model means that staff are fragmented, leading to issues with finding staff to fill duplicate rotas. Inconsistent rota cover makes the service more vulnerable as smaller rotas are less resilient to absences. In the case of gynaecology, due to outliers and fragmented pathways, ward managers are required to do a daily intake of patients across wards, which leads to inefficiencies in case management, additional costs and risks to continuity in patient care.

The service specification for networked maternal medicine services, defines co-dependencies with other specialties or facilities that should be met by maternity services. Of the most critical dependencies there are gaps at both site – including general surgery and paediatrics[36]. Our current service is not meeting the service specification requirements. At City Hospital, we are reliant on telephone advice in general surgery and on-call availability for paediatric services. This means that some new-born babies must be transferred for surgery and women with underlying conditions may not receive the right level of support. Evidences shows that “indirect” causes of maternal death are still pervasive and multidisciplinary team (MDT) working could help reduce these instances. Failure to provide full MDT cover at City Hospital compromises the quality of care we are able to deliver to mothers.

In October 2020, the CQC undertook an inspection of NUH maternity services. The inspection report was published on 2nd December 2020 and rated maternity services at Nottingham City Hospital (NCH) and Queens Medical Centre (QMC) as inadequate overall. The CQC issued enforcement conditions in relation to regulated activity in Maternity & Midwifery Services. A further unannounced inspection of maternity services at Nottingham City Hospital (NCH) and Queen’s Medical Centre (QMC) was undertaken by the CQC from 1st – 4th March 2022. The Trust was notified of potential Section 31 enforcement action, with a

[35] Optimal Arrangements for Neonatal Intensive Care Units in the UK including guidance on their Medical Staffing, British Association of Perinatal Medicine, 2014 https://www.nna.org.uk/assets/bapm_optimal-nicu-size-2014.pdf

[36] England Maternity Transformation Programme ‘service specification for networked maternal medicine services’

section 29a Warning Notice issued to the Trust in relation to staffing, triage and observations. The CQC reported that staff deployment, both midwifery and obstetricians, within maternity services at NCH and QMC is impacting the safety of women using triage services. The Trust has taken steps to improve the service through its Maternity Improvement Programme, in consultation with the Nottinghamshire Health Scrutiny Committee. However some of the actions to address the central issues resulting from split site working will only be addressed through the consolidation of services (see Appendix 5).

In September 2022, an independent review into maternity services at NUH commenced, commissioned by the NHS England national team, and chaired by Donna Ockenden. The review will focus on identifying areas of concern within maternity care at NUH and will provide information and recommend actions to help improve the safety and quality of maternity care and the handling of concerns at NUH when they are raised by patients and/or their families. The review report will be published within 18 months of commencement (by March 2024).

4.3.4 Elective care

Our elective services are under strain as a result of co-location with emergency care and are not fully integrated across Nottingham and Nottinghamshire to provide care closer to home. This is particularly acute during the winter months when elective capacity is repurposed for emergency care. Our inability to efficiently discharge patients and provide integrated care across Nottingham and Nottinghamshire results in cancelled elective activity, and poorer outcomes.

There are also outpatient services at Ropewalk House in the City Centre, including local audiology and breast screening services and a regional implant service.

There is a great deal of evidence highlighting the benefits of separating elective and emergency care including reducing the number of cancelled elective operations (and corresponding improvements in waiting times), reducing healthcare acquired infections and ultimately improving mortality and morbidity rates[37]. We see this play out at NUH in terms of meeting performance standards, such as the 18-week referral to treatment target, against which 60% of patients were treated compared to the target of >92% in 2022. This in turn exposes the organisation and the wider system to consequences.

National and regional strategies focus on providing care closer to home and reducing health inequalities. Within Nottingham and Nottinghamshire this amounts to a shift of care from the acute to the community setting, including perioperative care which should increasingly take place in the community setting using outreach services supported by technology[38]. Our current pathways are not standardised and, particularly in outpatients, we often fail to provide the right care in the right place, causing unnecessary travel for our patients. For example, despite Ropewalk's central Nottingham location, it is not well situated in relation to our most deprived communities. It offers little scope to provide one stop shop models

[37] Source: Royal College of Surgeons (2020) 'Waiting Times' ; Ceasar (2019) 'Delayed and cancelled orthopaedic surgery' ; Royal College of Surgeons (2007) 'Separating Emergency and Elective Surgical Care' ; NHS Long Term Plan ; BMJ (2017) 'Are medical outliers associated with worse patient outcomes'

[38] https://mk0healthandcary1acg.kinstacdn.com/wp-content/uploads/2020/04/8398-Clinical_Strategy_V6-1.pdf

and is isolated from related services on the acute sites. This is a consistent theme across outpatients where we have failed implement new models of care consistently.

Lack of protected capacity also has a knock-on impact on productivity and our patients are exposed to an increased risk of healthcare-associated infections (HCAI). To deliver the plan for elective recovery we will need to improve the flow through our hospitals. NUH has previously struggled to maintain satisfactory patient flow due to a number of inter-related factors. These include high medical bed occupancy at QMC, delays in the discharge of patients who are medically fit for discharge and the availability of assessment beds. In August 2022 we had 153 patients staying more than 24-hours after medically fit for discharge compared to a target of <=64. Achieving the planning guidance ambition of no more than 64 medically safe patients awaiting a pathway 1, 2 or 3 discharge would release the equivalent of over three wards of beds and would enable us to have sufficient hospital capacity to maintain effective flow for our non- elective patients and avoid non-elective demand constraining elective activity. As an Integrated Care System we are developing plans to ensure safe and timely discharges for our patients to ensure that no one stays in hospital any longer than is necessary, and this has informed our plans for the number of beds we will need in the future. See Chapter 5 Vision and Models of Care.

Across NUH there are 416.77 vacancies across the surgical team (as at December 2022), particularly in anaesthesia and nursing. Theatre staffing levels are a dominant constraint and have been limiting the volume of elective activity we are able to undertake. Staff feel dissatisfied and disengaged (NHS Staff Survey results 2021: We have a voice that counts 6.5/10 against a national average of 6.7/10). Staff on surgical wards are frequently required to manage medical outlying patients and often face whole lists being cancelled at short notice. Issues with recruitment compound the issues we face from cancelling surgery, which in turn means we must pay high levels of premium pay to deliver cancelled elective activity.

4.3.5 Cancer care

The majority of our cancer services are provided from City Hospital, where we have the largest specialist non-surgical cancer treatment facility in the East Midlands. We have the opportunity to further refine cancer care, to deliver exemplar services, which exceed national standards and are at the forefront of research and innovation. The split site model prevents us from realising this ambition. We cannot currently deliver a comprehensive MDT model and sometime struggle to provide timely treatments.

The current model delivering oncology and haematology from City Hospital is separate from the majority of emergency care and acute medicine and presents challenges to collaborative cross-specialty working. Evidence suggests that MDT management of cancer patients not only results in the change of treatment of patients, but also significantly increase survival[39]. This is reflected in clinical guidance across tumour types. This is a particular issue for our metastatic spinal cord compression (MSCC) patients, where there is a clinical need for increased collaboration between oncologists and surgical teams, and the model currently depends on patient transfers between sites.

[39] The effect of multidisciplinary team care on cancer management, Pan Afr Medical Journal, 2017 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3215542/#CIT0012

Within regional strategies there is an ambition to streamline the diagnosis and treatment pathway, particularly through a shift away from acute hospital sites. Cancer two-week wait referrals remain high, with ongoing pressure particularly in our breast pathway. Across all cancers, in 2022 only 69% of patients are seen within 2 weeks of GP referral compared to a target of >93%. Delays in treatment and specialist input put our patients at risk of deterioration, leading to poorer outcomes and greater pressure across the system.

Currently our elective services at City Hospital are consolidated with emergency activity. This means that elective cancer surgical services experience the same risk of cancellation as the rest of our elective services. This is reflected in the declining performance across referral to treatment targets; while we typically meet referral to specialist consultation, we failed to achieve diagnosis to treatment and referral to treatment targets in 2019/20.

4.3.6 Ambulatory care

Tomorrow's NUH provides an opportunity to build on existing transformation plans and redesign ambulatory care, focusing on the needs of our patients to develop pathways which minimise disruption to people's lives whilst delivering world class clinical outcomes.

There are a number of opportunities for improving ambulatory care which are in Table 2 below:

Local and accessible care	Outpatient services delivered in a centralised location means travel time and cost for patients. NUH has the opportunity to redesign the outpatient model to deliver services closer to home, in the community or in people's homes through virtual care.
Flexible delivery models	Providing a diverse range of delivery models is essential to meeting patient needs including: • Face to face with a multi-disciplinary approach • See and treat clinics • Primary and secondary joint clinics (reduce the artificial 'handover' of patients from primary to secondary care) • Primary/community accessible virtual hot clinics • Patient initiated follow ups
Pathway standardisation	• Redesigned pathways which standardise care will help to reduce unwarranted clinical variation. Developed in collaboration with system partners • Pathways will aim to deliver care in a safe setting that limits patients exposure to Healthcare Acquired Infection.

Table 2 Opportunities for Improving Ambulatory Care

4.4 Our buildings are not suitable for modern healthcare

The quality and configuration of our buildings has an impact on our ability to deliver high quality care and affects the experience of patients and staff. Broadly, these issues are defined in terms of their impact on safety and sustainability (e.g. backlog maintenance) or their effect on patient care (e.g. provision of specific facilities).

4.4.1 Poor quality estate impacts on patient outcomes and experience

Evidence shows that poor quality estate has a negative impact on patient outcomes and experience. Furthermore, having adequate capacity to meet demand including flexible space, will improve the timeliness and efficiency of care and deliver improved patient outcomes, for example:

- The Royal College of Emergency Medicine[40] found that Emergency Department overcrowding leads to high morbidity and mortality levels
- Royal College of Surgeons[41] found that cancelled operations due to capacity constraints can lead to more complex surgery for patients including for more advanced cancers due to extended waiting times
- Rechel et al[42] found that efficient, timely flow through the hospital improves patient outcomes
- Choi et al[43] found a significant relationship between indoor daylight and average length of stay

Lawson and Phiri (2003) The Architectural Healthcare Environment and its Effects on Patient Health Outcomes[44] compared the outcomes of patients treated in modern hospital wards with similar patients cared for in older hospital environments. The conclusions showed that refurbished wards had better recovery results and shorter times for the healing process.

- The Health Foundation (2019) 'Lack of investment in NHS infrastructure undermining patient care[45]'
- Sadler et al (2011) 'The business case for building better health care facilities[46]' changes in architecture, design and décor of health care facilities can improve patient care.
- noise-reducing measures – negative effects of noise are associated with a patient's recovery, quality of sleep and increased levels of stress
- uplift in single patient rooms – studies have shown that single-bed rooms and good air quality substantially reduce infection incidence and reduce mortality

[40] The drive for quality: How to achieve safe, sustainable care (Royal College of Emergency Medicine, 2013)
[41] Waiting times survey (Royal College of Surgeons, 2020)
[42] Rechel, B., Wright, S., Barlow, J., & McKee, M. (2010). Hospital capacity planning: from measuring stocks to modelling flows. Bulletin of the World Health Organization, 88, 632-636
[43] Choi, J. H., Beltran, L. O., & Kim, H. S. (2012). Impacts of indoor daylight environments on patient average length of stay (ALOS) in a healthcare facility. Building and environment, 50, 65-75.
[44] Lawson, B., Phiri, M., & Wells-Thorpe, J. (2003). The architectural healthcare environment and its effects on patient health outcomes: A report on an NHS Estates Funded Research Project. London: Stationery Office
[45] Lack of investment in NHS infrastructure undermining patient care (The Health Foundation, 2019)
[46] Sadler, B. L., Berry, L. L., Guenther, R., Hamilton, D. K., Hessler, F. A., Merritt, C., & Parker, D. (2011). Fable hospital 2.0: the business case for building better health care facilities. Hastings Center Report, 41(1), 13-23

- reduced length of stay through improved line of sight and better access to daylight

Zhang et al[47] found patient outcomes improved by improved sleep through design features such as noise reduction and single-bed rooms.

4.4.2 We have high levels of backlog maintenance

We have high-levels of backlog maintenance which pose a risk to operational continuity and impacts our overall financial position. The backlog maintenance costs across QMC and City Hospital in 2020/21 were £407.31m and continuing to rise every year. This equates to 38% critical and significant infrastructure risk. If left unaddressed, the condition of the estate will deteriorate. This can cause power outages, flooding and failing mechanical equipment that will lead to interrupted patient services. There have been a number of critical incidents since 2019. There are known issues with the ventilation in theatres on both campuses which could exacerbate our elective recovery challenges if we need to suddenly take theatres offline. In addition, we understand it is an NHP programme requirement to reduce all critical and significant infrastructure backlog in the Estates Return Information Collection (ERIC).

Site maps detailing the level of backlog maintenance required can be seen in Figures 26 and 27 below:

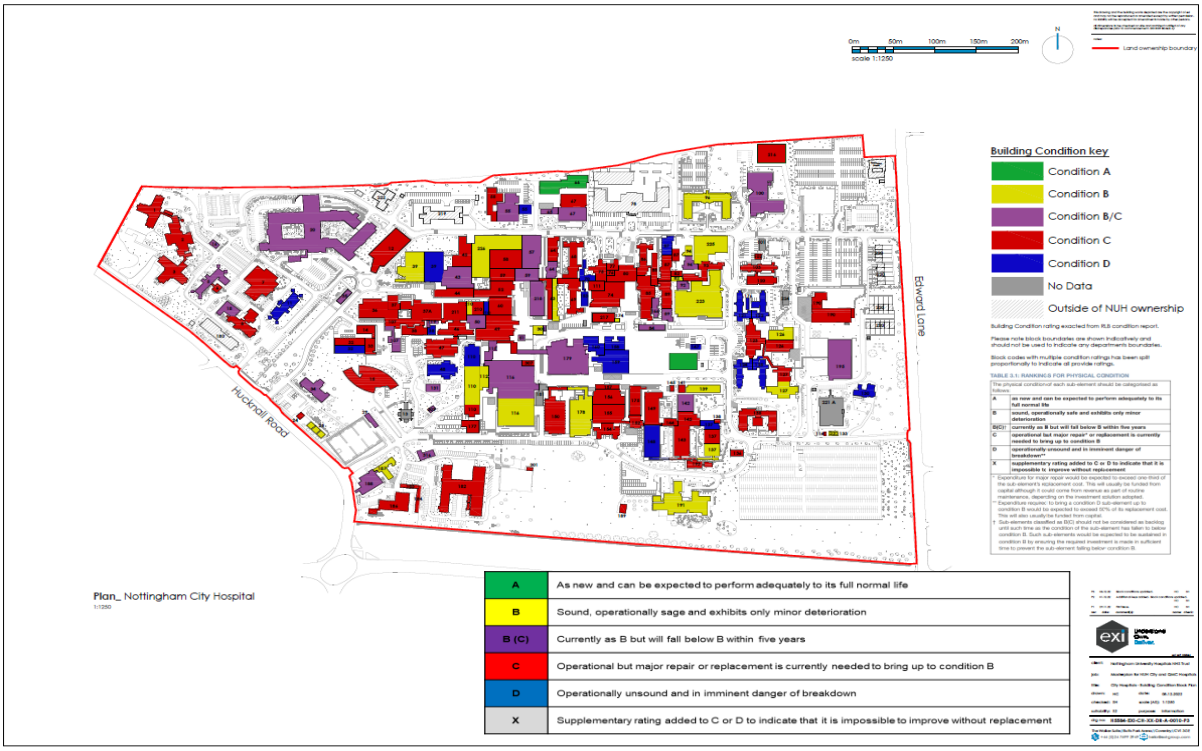


Figure 26 Backlog maintenance map of City Hospital site

[47] Zhang, Y., Tzortzopoulos, P., & Kagioglou, M. (2019). Healing built-environment effects on health outcomes: Environment–occupant–health framework. Building research & information, 47(6), 747-766

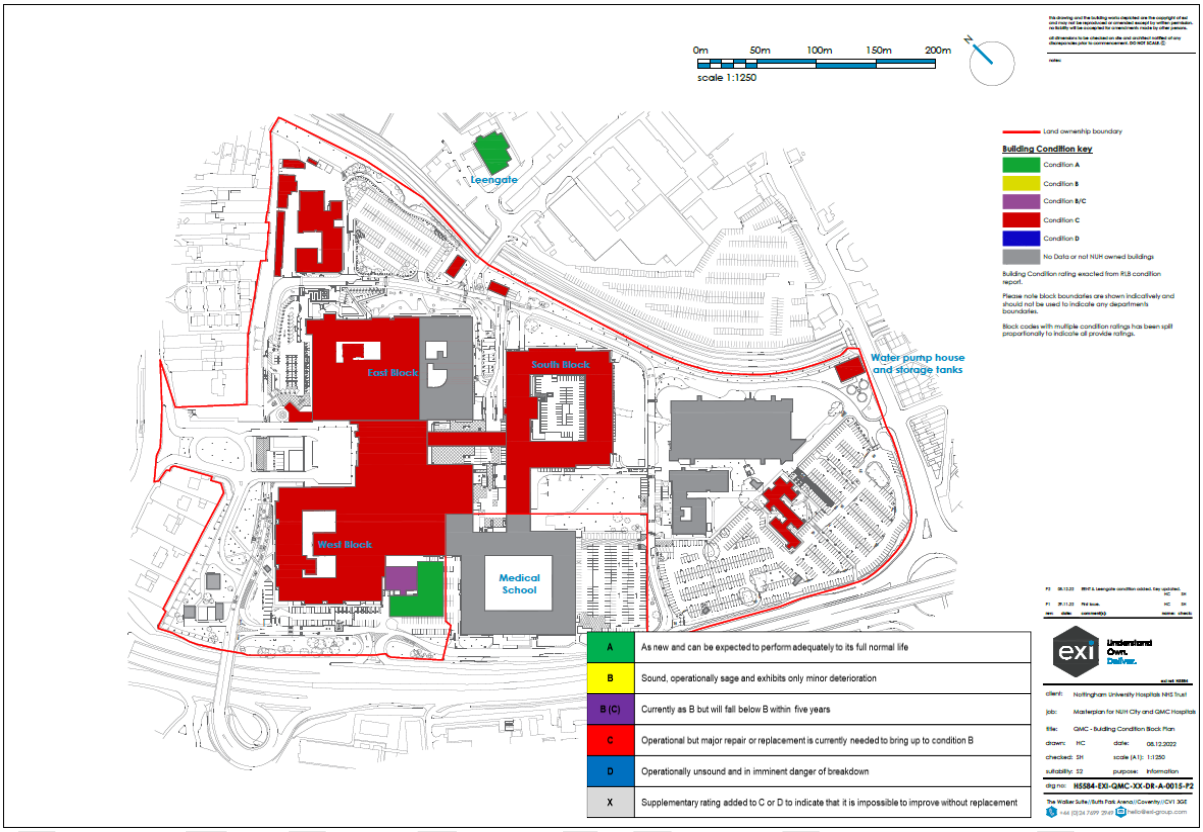


Figure 27 Backlog maintenance map of the QMC site

4.4.3 Our estate is inflexible and not fit-for -purpose

The QMC and City Hospital are inflexible and no longer fit for purpose. 23% of buildings on the City Hospital site are older than the NHS, meaning they were designed without the necessary engineering capacity to accommodate modern healthcare. Consequently, 14 of the NUH's 25 'Significant' risks relate to estate and capacity. As our services continue to change, we will increasingly be forced to work from old, legacy estate that does not suit the clinical model.

During August 2022, we experienced multiple same sex accommodation breeches due to poor quality estates. All breaches occurred in critical care. Whilst national guidance indicates critical care is exempt from same sex accommodation (SSA) breaches due to intensive patient requirements, this becomes invalid when the condition of patients improves and they are ready to step down to ward and hospital flow, as we cannot effectively step down patients to release critical care capacity.

The estate has an impact on clinical quality. Every acute clinical service reports estate related challenge which can lead to issues with delivering clinical services, both now and in the future. There are three main issues:

- Building configuration: the configuration of services across different buildings leads to extended travel distances for patients and creates duplication and inefficiency. The hospital estate has a direct impact on patient experience and is contributing to higher operational costs.

- Estate compliance: the NHS has extensive technical standards and guidance in the form of HBNs and Health Technical Memoranda (HTMs) that are currently not being met meaning we are not able to deliver on high standards of infection and prevention control (IPC). For example, there is a need to provide guideline-compliant theatres with access to interventional imaging.
- Provision of specialist areas: certain services require dedicated rooms. Without the provision of these areas, it is not possible to deliver the clinical model. For examples, there is a lack of dedicated space for child and adolescent mental health services (CAMHs), including consultation and inpatient areas. This means royal college guidelines[48] for close working between CAMHs, social care and youth justice agencies as well as with secondary care colleagues cannot consistently be achieved.

Poor-quality infrastructure must be addressed by building new facilities and addressing backlog maintenance in our worst quality accommodation. Providing a fit-for-purpose, flexible estate for the future is key to delivering a new model of care and addressing the health and care needs of our population.

4.5 Future vision

Our future vision is constructed around four key ambitions.

4.5.1 We will deploy population health strategies

We will deploy population health and health improvement strategies to manage the prevention of ill health and manage long-term conditions through changes to service location, capacity and provision

Population health is an approach we will be taking to improve physical and mental health outcomes, promote wellbeing and reduce health inequalities across our population. We will take a partnership approach with an added focus on wider determinants of health, recognising the interdependent issues that affect people's health and wellbeing.

There are opportunities for all partners to work more collaboratively to reduce avoidable admissions, address health inequalities and improve population health outcomes. Our ambitions are to:

- Identify high risk and vulnerable cohorts of patients through population health management, supporting self-management of conditions with easy access to services.
- Develop holistic pathways enabling integrated working between primary, secondary, community and social care through greater use of technology and robust infrastructure.
- Utilise staff innovatively, ensuring they are able to work to the ceiling of their professional competency to support the prevention agenda (such as social prescribers or occupational therapists within the ED).
- Increase use of screening to identify potentially life-threatening conditions earlier.

[48] https://www.rcpsych.ac.uk/docs/default-source/improving-care/better-mh-policy/college-reports/college-report-cr182.pdf?sfvrsn=8662b58f_2

4.5.2 We will develop new models of care

We will develop a clinical model of care with a focus on integrated system working and performance standards, care will be delivered from the right location, whether in-hospital or out-of-hospital, for a range of services

We have identified that some of the key challenges we face are the result disaggregated services that are not integrated with the wider range of health and care services across the system. We need to address this by developing pathways that ensure appropriate capacity across Nottingham and Nottinghamshire to improve performance and access, in particular with regard to transfers, waiting times and the number of cancelled operations.

Our ambitions are to:

- Minimise patient transfers as much as possible
- Further develop pathways that support early diagnostic and treatment of conditions for patients, utilising national best practice and innovative methods of delivery (i.e. one stop shops, virtual clinics).
- Embrace integrated care pathways, utilising new facilities to provide alternatives to admission.
- Future-proof capacity to meet the annual growth in demand
- Align with national and regional strategies

4.5.3 We will provide the right adjacencies between services

We will recognise the need to provide the right adjacencies between clinical areas and capacity to meet the demand

To deliver the scale of demand and prospective new models of care we will develop our hospital estate to provide the right adjacencies and flexibility. This will positively impact on patient experience and the flexible deployment of our workforce so that we can safely staff rotas.

Our ambitions are to:

- Ensure that co-dependent services are present so that patients can receive the best possible care in a timely fashion
- Have facilities sufficient in scale and flexibility, learning from recent COVID-19 experiences, to meet future population demand.
- Transform service provision with technology enabled clinical space that will seek to improve patient outcomes

4.5.4 We will address poor-quality infrastructure

We will address our poor-quality infrastructure by building new and addressing backlog maintenance in our worst quality accommodation, providing a fit-for-purpose, flexible estate for the future

A modern health care estate will enable systemic benefits to patients and staff using the space and improve our financial position. We aspire to create a healthcare environment that is responsive to both patient and clinical needs. That is configured in a way that maximises experience and efficiency through intelligent design. Where we do not have the option to build new, we will aim to reduce our dangerous levels of backlog maintenance which pose a

threat to operational continuity. Furthermore, we will explore opportunities for whole system estate rationalisation that could be secured through major investment in the wider Nottingham estate.

Our ambitions are to:

- Develop an estate that is efficient to operate
- HBN compliant facilities that are capable of flexing to meet new models of care
- Have facilities that reduce the possibility of infection transmission

4.6 Our investment objectives

A set of system level outcomes were detailed in the ICS Systems Outcomes Framework, which is the overarching Framework that guides how the system monitors its impact for the population of Nottingham and Nottinghamshire.

The framework design is based on four core components set out in Figure 28.

<table>
<tr><td>3 Domains</td><td>High-level domain groupings or classifications are based on the triple aim:<table><tr><td>1 Health and wellbeing</td><td>The impact of health and care services on the health of our population.</td></tr><tr><td>2 Independence, care and quality</td><td>The overall quality of care and life our service users are able to have and their experiences of our health and care services.</td></tr><tr><td>3 Effective resource utilisation</td><td>The state of our health and care infrastructure and its ability to deliver quality care and improve health and wellbeing long term.</td></tr></table></td></tr>
<tr><td>10 Ambitions</td><td>High-level aspiring ambitions for our Nottingham and Nottinghamshire population mapped against the 3 domains.</td></tr>
<tr><td>28 Outcomes</td><td>System level outcomes and results our health and care system will aim to achieve to deliver our ambitions.</td></tr>
<tr><td>84 Measures</td><td>Indicators to demonstrate progress towards or achievement (or not) of our outcomes.</td></tr>
</table>

Figure 28 ICS Systems Outcomes Framework

To address the case for change, we have defined a set of investment objectives to ensure it maximises the benefits of the capital investment associated with this programme (see Figure 29). These investment objectives will be used throughout the PCBC to compare different options and to maximise the value of changes across the health system.

The investment objectives were formally signed off and approved by stakeholders at the Tomorrow's NUH Programme Board with wide stakeholder representation on 16th September 2020. Whilst the objectives were agreed back in 2020, they are regularly reviewed and remain cogent to the aspirations of our system and continue to be aligned to the requirements of HM Green Book and the New Hospital Programme.

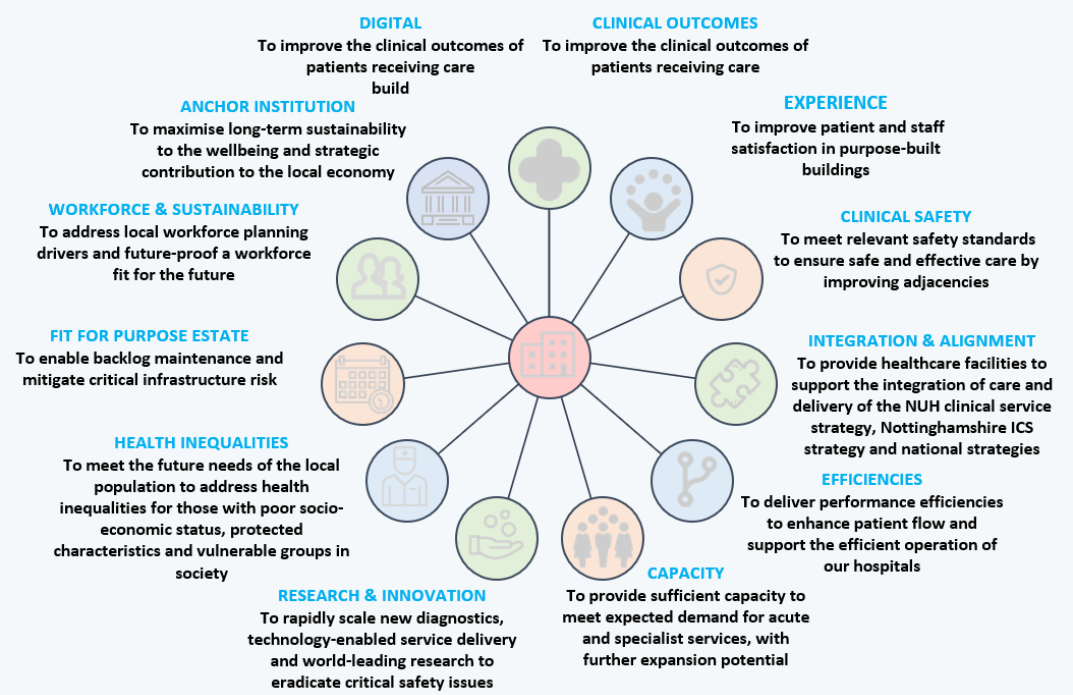


Figure 29 TNUH investment objectives

The objectives will support the health system to deliver improved health outcomes and the wellbeing of patients. They are objectively observable and measurable, so that they are suitable for monitoring and evaluation. The investment objectives have been designed so that they are:

- Specific (outlines a clear statement of what is required)
- Measurable (includes a measure to monitor progress and to know when the objective has been achieved)
- Achievable (agreed by stakeholders to ensure the objectives are challenging and attainable),
- Realistic (focusses on outcomes and not service outputs) and;
- Time-limited (agreed by stakeholders for when the objectives must be achieved).[49]

Figure 30 demonstrates the objective measurements identified by TNUH for each of the investment objectives map to both:

- the ICS Outcomes Framework which will demonstrate how TNUH is supporting the system to deliver improving health outcomes.
- the HM Treasury categories of: Effectiveness / Economy / Efficiency / Compliance / Replacement

The primary investment objective for the Tomorrow's NUH programme is clinical outcomes which has an objective of improving the clinical outcomes of patients receiving care.

[49] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938046/The_Green_Book_2020.pdf

HM Treasury Category	Investment Objective	Investment Objective Measurements
Quality	**CLINICAL OUTCOMES** *To improve the clinical outcomes of patients receiving care*	To deliver best practice care in line with NICE guidelines To reduce unwarranted variation in clinical outcomes in line with GIRFT by [Target year of opening (2030) + 2 years]
Experience	**EXPERIENCE** *To improve patient and staff satisfaction.*	To achieve >90% very good and good ratings across all areas by [2030 + 2 years] Improve staff satisfaction scores in the annual NHS survey by 5% by [2030 + 2 years]
Compliance	**CLINICAL SAFETY** *To meet relevant safety standards to ensure safe and effective care by improving adjacencies.*	To score 'outstanding' in all CQC inspection domains by [2030 + 2 years] Reduction of hospital acquired infections to 0 for MRSA and <10 per month for Cdiff by [2030 + 2 years]
Replacement	**INTEGRATION & ALIGNMENT** *To provide healthcare facilities to support the integration of care and delivery of the ICS Outcomes Framework, Nottinghamshire ICS Strategy and national strategies.*	To ensure all Tomorrow's NUH plans are in line with local and national strategic priorities To provide integrated care pathways with an increase in care being provided in the community by reducing demand from 4.8% to 1.8% by [2030 + 2 years]
Efficiency	**EFFICIENCIES** *To enhance patient flow and support the efficient operation of the healthcare system.*	To deliver LoS in line with best practice by [2030 + 2 years] To reduce cancellations for elective activity due to lack of beds to 0% by [2030 + 2 years] To reduce inpatient transfers across sites to 0 by [2030 + 2 years]

HM Treasury Category	Investment Objective	Investment Objective Measurements
Replacement	**CAPACITY** *To provide sufficient system-wide capacity to meet expected demand for acute and specialist services, with further flexibility and expansion potential to future-proof.*	To provide capacity to meet forecast activity growth in line with the capacity and demand model [2030 + 2 years]
Effectiveness	**RESEARCH & INNOVATION** *To rapidly scale new diagnostics, technology-enabled service delivery and world-leading research.*	To increase clinical research by recruiting >2 patients per 1,000 to NIHR studies by [2030 + 2 years]
Efficiency	**DIGITAL** *To utilise the opportunities offered by digital to enhance the accessibility, timeliness and quality of care.*	To achieve virtual outpatient appointments of 38% by [2030 + 2 years]
Economy	**HEALTH INEQUALITIES** *To address health inequalities for those with poor socio-economic status, protected characteristics and vulnerable groups in society.*	To provide integrated care pathways with an increase in care being provided in the community by reducing demand from 4.8% to 1.8% by [2030 + 2 years] To ensure services are located to maintain or improve travel access for the local population (patients and staff) with a special reference to vulnerable groups
Compliance	**FIT FOR PURPOSE ESTATE** *Improve patient experience and outcomes by reducing backlog*	To significantly reduce backlog maintenance from c£130m to < £50m% by [2030 + 2 years] To reduce estate related risks on Trust risk register by [2030 + 2 years]

HM Treasury Category	Investment Objective	Investment Objective Measurements
	maintenance and mitigate critical infrastructure risk.	
Efficiency	**WORKFORCE & SUSTAINABILITY** *To address local workforce planning drivers and future-proof a workforce.*	To improve retention rates from c12% to <10% by [2030 + 2 years] To achieve staff sickness rates of <3.6% by [2030 + 2 years]
Economy	**ANCHOR INSTITUTION** *To make wider strategic contributions to the local economy.*	Attract 3rd party interest and investment in the local area Contributes to the local health economy's financial sustainability Delivers the return on investment for the Trust and wider system

Figure 30 TNUH Investment Objectives Measurements

5 Vision and models of care

This section describes how we will deliver care that meets quality standards, is aligned to best practice guidelines and reflects local and national strategies. To support the ambition of delivering health and care services so that people in Nottingham and Nottinghamshire can live longer, happier, healthier and more independent lives, clinicians have come together to design a clinical model of care. This describes new ways of configuring services and delivering care with the aim of improving clinical outcomes, ensuring excellent patient and staff experience and addressing health inequalities, and is driven by our case for change.

Our clinical model of care is comprised of three key areas of focus:

1. **Integrated care:** providing more joined up services has been identified throughout engagement; collaboration across the wider system to optimise how and where services are delivered across Nottingham and Nottinghamshire will enable a more preventative approach and improve access for patients.
2. **Population health**: we face increasing demand and complexity of health needs, there are significant changes in treatments, technologies and the way care is delivered and ever-increasing financial pressures. Against this backdrop we will reduce health inequalities and improve patient outcomes.
3. **Local and specialist hospital services:** safe and high-quality care depends on the availability of interrelated services and a critical mass of activity; our hospital services should be configured to support best practice care pathways.

Implementing our plans for integrated care will have an impact on how many people require hospital care in an acute setting. To calculate future bed requirements, we have considered the current strategies in place across Nottingham and Nottinghamshire and how these will mitigate future growth in demand, driven by regional demographic growth. As a result of these interventions, we expect we will require 213 additional acute hospital beds by 2030.

Our clinical model of care is expected to bring a wide range of positive impacts across clinical and patient, workforce, technology and estates. The clinical model of care is summarised by six clinical design principles:

1. All care pathways should focus on integrated working with system partners to deliver appropriate out of hospital care including self-care and prevention.
2. All emergency secondary care services should be consolidated on one site where necessary dependencies are available 24/7
3. Elective care inpatient facilities and day case surgery should be delivered separate from emergency care in order to protect elective capacity, maintaining access to critical care.
4. All women's and children's hospital services should be consolidated and co-located with adult emergency care.
5. Cancer care hospital services should have access to critical care and all associated medical specialties. Elective and ambulatory cancer care will follow principles respective elective and ambulatory clinical design principles
6. Ambulatory care pathways (outpatients and day cases) should be redesigned to minimise disruption to patient's lives, providing care in accessible locations whilst maximising the potential of new and emerging technologies.

The clinical model development has been overseen by a dedicated Clinical Advisory Group (CAG) and around 350 stakeholders were engaged in the design process for the clinical model (design principles signed off in September 2020).

5.1.1 Introduction

The Nottingham and Nottinghamshire Integrated Care System (ICS) has an ambition to transform health and care services, so our neighbourhoods, places and systems will seamlessly integrate to provide joined up care and every citizen will enjoy their best possible health and wellbeing. To support delivery of this ambition, clinicians from across the system have led the development of a proposed clinical model for the TNUH programme, which is underpinned by six clinical design principles. The proposed clinical model is underpinned by a set of six clinical design principles. This clinical model describes new ways of both configuring services and delivering care with the aim of delivering exemplar clinical outcomes, ensuring excellent patient and staff experience, and addressing health inequalities.

5.1.2 NHS Long Term Plan (LTP)

The NHS LTP confirms how healthcare delivery in the future should look:

- **Technological developments** will increasingly enable care to be delivered closer to home e.g. our digital technologies are not fit-for-purpose, and we have an opportunity to future-proof new ways of working and maximise the use of novel technologies.
- More **efficient use of our skilled workforce**, adapting the mix of experts to meet evolving demands e.g. our current workforce is impacted by national shortages and competition from the independent sector, resulting in reliance on premium pay.
- Patients have **increasingly complex needs** e.g. our patients requiring certain specialty input are being transferred across sites to receive care.

The LTP established Integrated Care Systems (ICSs) as central to delivering its core ambition. The health and social care organisations across Nottingham and Nottinghamshire have come together as an ICS to commission and oversee the delivery of integrated care across the region. They are working towards the four aims of an ICS:

- Improve outcomes in population health and healthcare
- Tackle inequalities in outcomes, experience and access
- Enhance productivity and value for money
- Support broader social and economic development

Our future actions will be informed by the strategic priorities agreed by the Nottingham and Nottinghamshire Integrated Care System (ICS), and the associated strategies such as the ICS Clinical and Community Services Strategy (CCSS) and ICS Health Inequalities Strategy, the developing Integrated Care Strategy.

5.1.3 Nottingham and Nottinghamshire ICS

The ICS will work together across NHS, local authorities, and the voluntary sector to support people throughout their lives, helping them to live healthy lives, and to support them when they become ill. Upon its official designation as a statutory body on 1st July 2022, the ICS agreed five system priorities:

1. Prevention, inequalities and wider determinants of health

2. Proactive care, self-management and personalisation
3. Urgent and emergency care
4. Mental health
5. Value, resilience and sustainability

The ICS is committed to leveraging all its assets to deliver integrated care and we will need to align our future practices and service models to address the ICS priority areas.

5.1.3.1 Integrated Care System clinical and community services strategy (CCSS)

The ICS clinical and community services strategy (CCSS – see Appendix 4) sets the context for wider system transformation and engagement with all system partners across system, place and neighbourhoods, as described in Figure 31.

Figure 31 Collaboration across Nottingham and Nottinghamshire[50]

The CCSS ambition is about the whole system working together to support people throughout their lives, helping them to live healthy lives and supporting them when they become ill. Through this, we have reinforced the commitment in the NHS LTP that the NHS will need to be:

- more joined up and co-ordinated in its care;
- more proactive in the services it provides; and
- more differentiated in its support offer to its individuals.

We have set out a long term (five year plus) sustainable overarching vision for our health and care delivery system and provides the agreed strategic direction and framework for which future service development and reconfiguration will be considered against.

Our strategy is the start of a process of transformation and is driving a programme of service reviews across the health and care system. These have brought together doctors, nurses and other health professionals to work side-by-side with patients to look at how the

[50] ICS CCSS https://healthandcarenotts.co.uk/wp-content/uploads/2020/04/8398-Clinical_Strategy_V6-1.pdf

way we deliver care can be improved. Detailed service reviews have been carried out in twenty areas as part of this work.

The overarching ICS CCSS was developed with over 200 clinicians, care professionals, voluntary organisations and patient representatives. The clinical model is based around a life continuum – recognising that people will move both up and down the continuum in terms of the support and intervention they need.

The ICS CCSS has provided a strong foundation for the Nottingham and Nottinghamshire Integrated Care Strategy and Five Year Joint Forward Plan (expected July 23).

5.1.3.2 Integrated Care Strategy 2023-27

The Nottingham and Nottinghamshire Integrated Care System (ICS) Integrated Care Strategy 2023-27 sets out a way forward as to how the system can best improve services, access, outcomes, experiences and, critically, tackle health inequalities.

It is built on a series of important principles - placing a greater emphasis on supporting wellbeing and preventing ill health; ensuring equity in the approach to supporting people and their communities; and seeking to better integrate services.

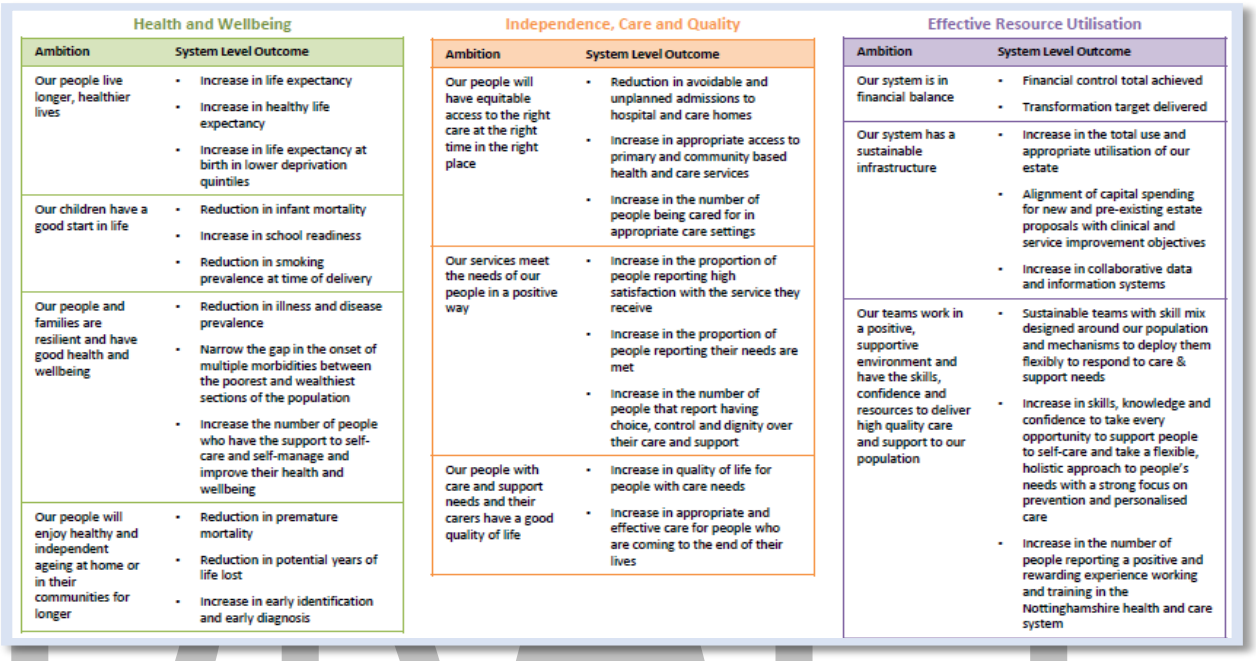
The strategy sets out that over the next five years the system will:

- Reframe health and wellbeing as an asset, not a cost, recognising that without good health and wellbeing, life becomes infinitely harder for people from all backgrounds,
- Focus on children and young people, including the most vulnerable such as those with autism, special educational needs, disabilities and looked after children. They are the future and everything that can be done to support them to make a healthy start in life is an investment that benefits all.
- Increase investment in wellness, as well as sickness, and focus resources in such a way that frail older people are supported to remain independent in their own home and reduce current reliance on hospital and social care.
- Recognise that while some services are universal, access to the majority is not and where inequity in access or outcomes exists, the system will seek to rectify it.
- Use data and intelligence to help understand issues better, like smoking and obesity. The system will tailor and personalise support for people, so that they feel empowered to make healthy changes in areas that are important to them and their families.
- Work together as a system, embracing the views and experiences of local people. Working on the basis of what is best for the population, best for the system and best for our organisation, in that order and, in doing so, enable our staff to work across the system in genuinely integrated ways.
- Make careers in health and care an attractive option for all, especially our young people, so that our workforce is representative of the people we serve.
- Spend our money wisely, recognising the challenged economic circumstances and we will seek to support local business when we are buying goods and services.
- Be honest, transparent and accountable for delivering what we set out in this strategy and we will be the first ICS to report progress in ways that puts health and wellbeing on a par with finance, wealth and productivity.

5.1.3.3 *Integrated Care System outcomes framework*

To deliver the vision, the ICS has developed a system level outcomes framework (see Figure 32) that all partners across the system are working together to jointly deliver.

The purpose of the framework is to provide a clear view of our success as an ICS in improving the health, wellbeing and independence of our citizens and transforming the way the health and care system operates. The framework sets out short, medium and long term outcomes that the whole ICS will work together to achieve based on ten ambitions.



Health and Wellbeing

Ambition	System Level Outcome
Our people live longer, healthier lives	• Increase in life expectancy • Increase in healthy life expectancy • Increase in life expectancy at birth in lower deprivation quintiles
Our children have a good start in life	• Reduction in infant mortality • Increase in school readiness • Reduction in smoking prevalence at time of delivery
Our people and families are resilient and have good health and wellbeing	• Reduction in illness and disease prevalence • Narrow the gap in the onset of multiple morbidities between the poorest and wealthiest sections of the population • Increase the number of people who have the support to self-care and self-manage and improve their health and wellbeing
Our people will enjoy healthy and independent ageing at home or in their communities for longer	• Reduction in premature mortality • Reduction in potential years of life lost • Increase in early identification and early diagnosis

Independence, Care and Quality

Ambition	System Level Outcome
Our people will have equitable access to the right care at the right time in the right place	• Reduction in avoidable and unplanned admissions to hospital and care homes • Increase in appropriate access to primary and community based health and care services • Increase in the number of people being cared for in appropriate care settings
Our services meet the needs of our people in a positive way	• Increase in the proportion of people reporting high satisfaction with the service they receive • Increase in the proportion of people reporting their needs are met • Increase in the number of people that report having choice, control and dignity over their care and support
Our people with care and support needs and their carers have a good quality of life	• Increase in quality of life for people with care needs • Increase in appropriate and effective care for people who are coming to the end of their lives

Effective Resource Utilisation

Ambition	System Level Outcome
Our system is in financial balance	• Financial control total achieved • Transformation target delivered
Our system has a sustainable infrastructure	• Increase in the total use and appropriate utilisation of our estate • Alignment of capital spending for new and pre-existing estate proposals with clinical and service improvement objectives • Increase in collaborative data and information systems
Our teams work in a positive, supportive environment and have the skills, confidence and resources to deliver high quality care and support to our population	• Sustainable teams with skill mix designed around our population and mechanisms to deploy them flexibly to respond to care & support needs • Increase in skills, knowledge and confidence to take every opportunity to support people to self-care and take a flexible, holistic approach to people's needs with a strong focus on prevention and personalised care • Increase in the number of people reporting a positive and rewarding experience working and training in the Nottinghamshire health and care system

Figure 32: System level outcomes framework[51]

The ICS' strategic priorities are centred around collaborative ways of working with people in the health and care system. The system level outcomes framework will enable the system to:

- **Drive improvements in health and wellbeing across places and communities**. The aim is to improve health outcomes, promote wellbeing, and reduce health inequalities across the local population.
- **Improve health and care for people with the worst health outcomes**. The aim is to work in partnership with other sectors and services to improve health and wellbeing for the people at greatest risk of poor health, and to improve outcomes for those at greatest risk of poor health.
- **Support people and leaders working in health and social care**. The aim is to develop collective, compassionate and inclusive leadership promoting wellbeing, and enabling individuals and teams to work at their best.

[51] Nottingham and Nottinghamshire Integrated Care System 5 Year Plan, 2019/20 – 2023/24

5.1.3.4 Integrated Care System health inequalities strategy

Our vision for health inequalities is that everyone has the same opportunity to lead a healthy life no matter where they live or who they are, and that our front line professionals are valued and supported to deliver high quality care.

The health inequalities strategy for the Nottingham and Nottinghamshire ICS outlines a number of wider determinants of healthcare, reflected in Figure 33, which are critical to improving health outcomes.

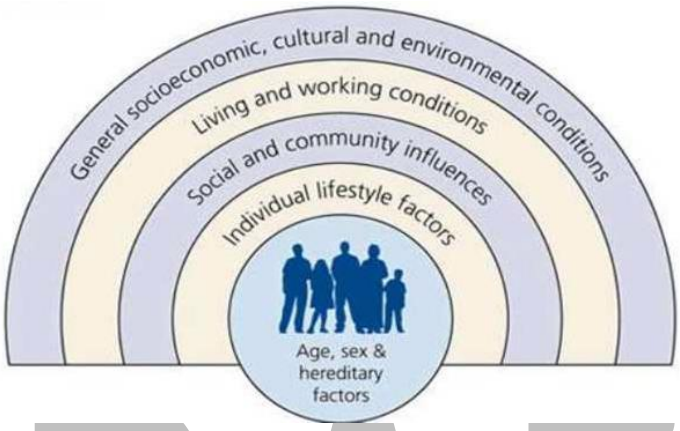


Figure 33 26Wider determinants of health

Tangible actions are therefore required to address health inequalities and to clearly articulate some of the impact the TNUH programme will have on improving health outcomes. We will be working across the health and care system to address:

- individual lifestyle factors;
- social and community influences; and
- socioeconomic conditions; and living and working conditions.

The ICS health inequalities strategy for Nottingham and Nottinghamshire is designed to help establish a shared commitment and vision for addressing health inequalities across the health system, underpinning delivery of both the ICS CCSS, and the 5-year ICS strategic plan.

As a citizen living in Nottingham and Nottinghamshire this means:

- we will not worsen health inequalities and we will work to reduce them;
- we will support our population by providing them with the skills, training and tools to access digitally enabled health and care services, in order to empower and enable them to manage their health and care, reduce health inequalities and social isolation; and
- we will listen and engage with communities who need most support, deepening partnerships with community and voluntary sectors.

As a person receiving support from our health and care system this means:

- health and care services are accessible for all, particularly those at risk of exclusion because of personal, economic or social factors;

- we will improve how we proactively identify the health and care needs of our population in order to identify and put in place support and treatment that our population need in order to stay well; and
- we will accelerate preventative programmes which proactively engage those at greatest risk of poor health outcomes.

As a person working in our health and care system this means:

- health and care staff are valued and supported to maintain wellbeing and so deliver high quality care in all settings;
- we will strengthen leadership and accountability, with a named executive Board member responsible for tackling inequalities in place in every ICS partner, alongside actions to increase the diversity of senior leaders; and
- we will provide the people involved in providing health and care with the information and tools to understand and respond to health inequalities.

The health inequalities strategy is supported by a place-based systems approach to tackling the complex causes of health inequalities and the opportunities to address these at different levels. This is framed against three types of intervention: civic-level, community-based and service-based (see Figure 34).

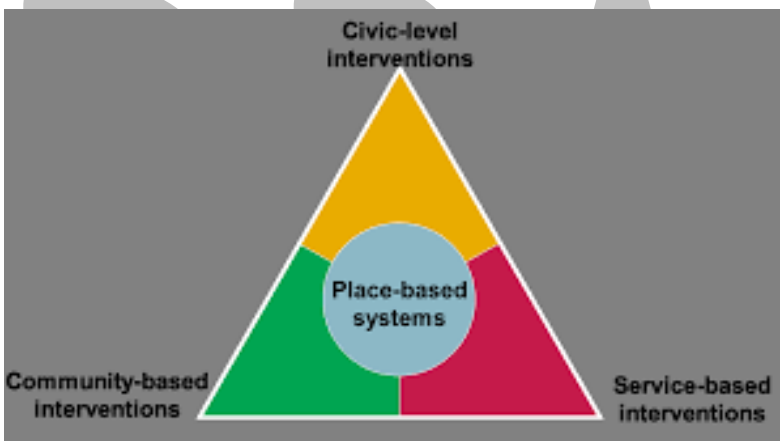


Figure 34 Health inequalities framework

This PCBC sets out how the proposed service reconfiguration will contribute to addressing health inequalities at these different levels through civic, community and service-based interventions. These types of intervention will guide and shape the specific actions we take together to address the health inequalities identified.

5.1.4 Our clinical model of care

Our clinical model of care is ambitious in its aims to increase the duration and quality of people's lives. We want our citizens to have access to more joined up, proactive and differentiated services. Within the model we describe how we intend to deliver this both in and out of hospital. Our model is comprised of three key areas of focus:

- **Integrated care:** providing more joined up services has been identified as a priority throughout the engagement; collaboration with the wider system to optimise how and where services are delivered across Nottingham and Nottinghamshire will enable a more streamlined approach to care and improve access for patients. We

will utilise a 'Making Every Contact Count' across all pathways of care will ensure we embed prevention and self-care across the system

- **Population health**: we face an increasing demand and complexity of citizens' health needs; there are significant changes in treatments, technologies and the way care is delivered; and ever-increasing financial pressures. Against this backdrop we must reduce health inequalities and improve patient outcomes.
- **Local and specialist hospital services**: safe and high-quality care depends on the availability of co-dependent services and a critical mass of activity; our hospital services will be configured to support best practice care pathways as part of the broader continuum of care.

We want to build on the strengths of our acute care providers. NUH has achieved national and international recognition for many of its specialist services including stroke, renal, neurosciences, cancer services and trauma. The Trust are also at the forefront of many research programmes and are the only NHS trust and university partnership in the country to have three successful bids for biomedical research units.

While we know that the complex, long-term conditions we are challenged with require more than simply hospital interventions, access to specialist acute services remains key to ensuring that people are cared for across the life continuum. These services must be aligned to ongoing, integrated care so that people can be kept healthy at home once their acute episode is finished.

Therefore, the proposed clinical model of care has been designed to align with our wider local plans and objectives, particularly around integrated care. This pre-consultation business case (PCBC), however, responds to the opportunity from the New Hospital Programme (NHP) and has a specific focus on hospital services – an area where we currently have challenges, as outlined in our case for change.

We believe that our clinical model of care will deliver a wide range of positive impacts, including clinical benefits, workforce benefits, technology benefits and estates benefits. We expect improved clinical outcomes and experience for patients, including fewer adverse drug events and infections, shorter hospital stays and increased provision of care closer to home. We expect an improved way of working for staff, and opportunities for the implementation of new technologies and research programmes.

5.1.4.1 Clinical Design Principles

The clinical model is underpinned by a set of six clinical design principles which were jointly agreed by clinical stakeholders at the start of the programme. This chapter demonstrates how each principle has informed the development of the proposed model of care.

These principles are:

1.	All care pathways should focus on integrated working with system partners to deliver appropriate out of hospital care including self-care and prevention

2.	All Emergency Secondary Care services should be consolidated on one site where necessary dependencies are available 24/7
3.	All Women's and childrens acute services should be consolidated and co-located with adult emergency care
4.	Elective care inpatient facilities and day case surgery should be delivered separate from emergency care in order to protect elective capacity, maintaining access to critical care
5.	Cancer care acute services should have access to critical care and all associated medical specialties.
6.	Ambulatory care pathways (outpatients and day cases) should be redesigned to minimise disruption to patient's lives, providing care in accessible locations whilst maximising the potential of new and emerging technologies

5.1.5 Clinical engagement in developing our clinical model of care

A total of 348 clinical and non-clinical stakeholders were involved in designing the TNUH clinical model of care. Our approach to clinical engagement was designed using a patient pathway approach involving NUH clinicians and wider system partners. There are several forums for clinical engagement.

Each workstream developed a detailed case for change, future vision, future pathway and dependencies and adjacencies to form a clinical model which supports the clinical design principles.

The clinical model was signed off by the TNUH Programme Board in March 2021.

5.1.5.1 Clinical advisory group (CAG)

The clinical model development has been overseen by a dedicated Clinical Advisory Group (CAG), established in 2020. They provided leadership focusing on ensuring a robust, evidence-based clinical model and were responsible for signing off the outputs of individual workstreams and working groups.

The Clinical Advisory Group CAG comprises:

- NUH Medical Director (chair)
- CCG joint Clinical Chair
- Programme GP Clinical Lead
- TNUH programme clinical workstream leads:
    - Emergency care
    - Elective care
    - Family care
    - Cancer care
    - Ambulatory
    - Ancillary care (clinical support services)

- NUH professional leads (Nursing, Allied Health Professionals, Science and Technologists)
- University of Nottingham Medical Academic lead
- Clinical leads from health and care partners

The CAG reports directly to the Tomorrow's NUH Programme and Partnership board and is chaired by the NUH medical director.

The governance is summarised in Figure 35.

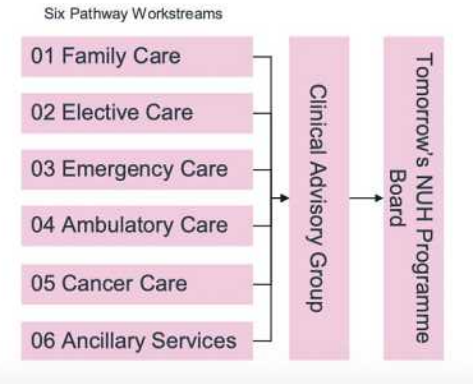


Figure 35 Clinical model engagement and governance

5.1.5.2 Clinical workstreams

There are six clinical workstreams, which are aligned with the key areas of service reconfiguration within TNUH, as shown in Figure 6. The workstreams are overseen by a clinical lead from NUH and, to ensure a balanced system perspective covering primary and secondary care, there is also an identified GP lead.

Programme Workstream	Trust Clinical Division	SCOPE
01 Family care	Family health	All care relating to women's and paediatric specialties, including obstetric pathways.
02 Elective care	Medicine Surgery	All (non-cancer) planned care on the referral to treatment pathway, including pre-operative assessments, day-case procedures, elective inpatient procedures and postoperative care (including discharge to follow-up period).
03 Emergency care	Medicine Surgery	All non-elective, unplanned care including emergency department (ED) attendances, emergency admissions (from all sources) emergency surgical procedures and postoperative care (including discharge to follow up period).
04 Ambulatory care	Ambulatory	All outpatient appointments (new and follow up), outpatient procedures and treatments not requiring admission.

05 Cancer care	Cancer and Associate Specialties	All cancer care through the entire cancer pathway, including screening programmes, diagnostics, treatment, recovery, surveillance and end of life care.
06 Ancillary services	Clinical Support Services	All diagnostic services, pharmacy services, therapy services and other wrap-around services that support the above workstreams.

Figure 36 Clinical workstreams

Key specialist-specific developments and revisions to the clinical model are managed by individual working groups. Working group outputs are reviewed and signed off by the CAG to ensure consistency and acceptability. Where changes to services as part of TNUH will potentially impact on individual specialties and divisions, clinical leads from other parts of the system are engaged in discussions, both in bespoke meetings and through the strategic oversight group.

5.2 Integrated care

5.2.1 Introduction

The ICS is taking a system wide approach to improving the health of the population in Nottingham and Nottinghamshire. We are already working as a system across nine key programmes, as shown in Figure 37, to provide more joined up services that are driving quality improvements across clinical standards.

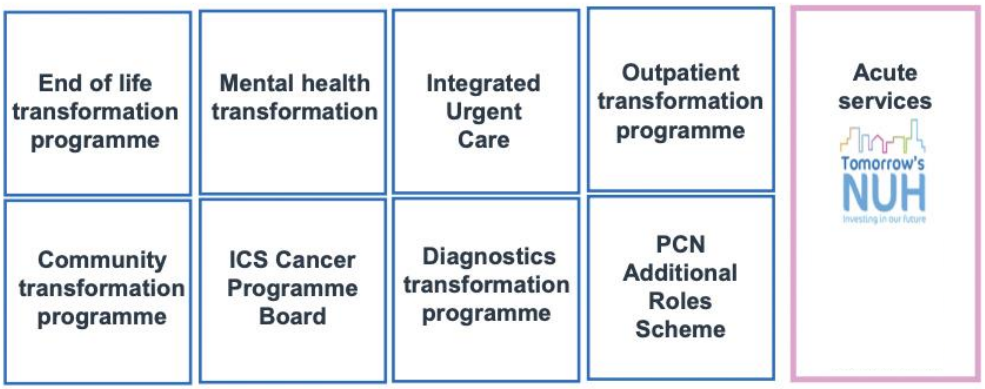


Figure 37 System transformation priority areas

Our clinical model for integrated care focuses on developing integrated pathways with system partners to deliver appropriate care closer to home where that is right for the patients, and this will include supporting self-care and prevention. To ensure that our clinical model addresses the case for change, we have developed an approach to integrated care that is aligned to national and regional guidance and strategies.

5.2.2 Strategic context

Our plans for integrated care and population health have been shaped by the following guidance and strategies:

- **NHS Long Term Plan[113]:** highlights genuinely integrating care in our communities as a priority, including creating true integrated teams of GPs, primary and community health and social care staff, expanding community health teams to keep people at home and increase support to care homes.
- **NHS Ageing Well programme[52]:** the development of services designed around and focused on those who use them, that enable people to age well, supporting people who are identified as frail to manage their health and wellbeing according to their needs.
- **Home First policy[53]:** supporting patients at home or in an intermediate care service. This is often implemented alongside a 'discharge to assess'[54] model, whereby home is the default pathway, and the assessment is completed at home, with ongoing support services for up to six weeks.
- **Other guidance and evidence:** including from the National Institute for Clinical Excellence (NICE), and NHS England.
- **Developing strategy:** the Nottingham and Nottinghamshire ICS are developing both an Integrated Care Strategy and a Five Year Joint Forward Plan which build on previous system strategies and will be intrinsically linked to TNUH as it progresses.

5.2.3 Integrated care approach

Our vision for integrated care is aligned to the ICS clinical and community services strategy (CCSS). Across Nottingham and Nottinghamshire, the strategic aim is to increase the duration of people's lives and to improve those additional years, allow people to live longer, happier, healthier and more independently into their old age.

The aim of the CCSS is to develop a model of care delivered by the whole health and care system working together, providing more proactive care with a focus on prevention and early intervention, and on providing services closer to people's homes. The strategy recognises that this will be a long-term programme over the next 5 years and beyond, and will require long term investment in health and care estates and infrastructure.

A recognised progression of care needs has been utilised within the development of this strategy. These include:

- Staying healthy – primary prevention and education, and wider determinants of health.
- Living well – primary and secondary prevention, maternity and children's services, universal personalised care, and living with a long term health or care need.
- Care in a crisis – care that is needed in an emergency or same day / urgent basis.

[52] Ageing well and supporting people living with frailty (NHS England)

[53] Reducing length of stay: Home first approach (NHS England)

[54] Quick Guide: Discharge to Assess (Department of Health and NHS England)

- Managing illness – planned acute or specialist care (including cancer care), and support with the aim to return back to living well.
- End of life – patient centred care involving joint decision making.

As we deliver this strategy, we will seek to support people with what matters to them, which is described within the CCSS and related in Figure 38. This means providing support in their own home or offer care within their local communities and neighbourhood towns, increasing the range of services and expertise available to enable this. This includes expanding the availability of social prescribing, building services in the community, and increasing rapid response services to support patients within their home.

Figure 38 What matters to people in Nottingham and Nottinghamshire[55]

We recognise that people will move up and down the care continuum throughout their lives, requiring different levels of care and support, as illustrated in Figure 39. To achieve this, we are dependent on embedding flexibility, enabled by a high-skill workforce, shared IT systems, and a fit-for-purpose estates.

Care continuum	Health and wellbeing needs
Staying healthy	• Primary prevention and education • Wider determinants of health
Living well	• Primary and secondary prevention • Maternity and children's services • Universal personalised care

[55] ICS CCSS https://healthandcarenotts.co.uk/wp-content/uploads/2020/04/8398-Clinical_Strategy_V6-1.pdf

	• Living with a long-term health or care need including mental health
Care in a crisis	• Care that is needed on an emergency or same day / urgent basis
Managing illness	• Planned acute or specialist care (including cancer care) and support with the aim to return back to living well
End of life	• Patient centred with joint decision making

Figure 39 CCSS progression of care needs[56]

5.2.4 Population health management approach

Across Nottingham and Nottinghamshire, we use population health data to better understand the health and care needs of our local population, helping to focus and tailor resources where they have the most impact.

By identifying local 'at risk' cohorts, we design and target interventions to prevent ill-health, and to improve care and support for people with ongoing health conditions. Recognising what factors are driving these poor outcomes helps us to adapt future local healthcare services to improve the overall health of the population.

Using and building upon current data sources from public health, primary care, secondary care, social care and mental health to achieve and improve patients' outcomes, reducing unwarranted variation, making the best use of the resources available while lowering costs to meet the ICS system level outcomes framework and align with the 'triple aim' objectives.

This will require a combined system approach to leverage the capabilities and capacity of partner organisations. We have set out a 6-stage process to achieve our ambitions, as shown in Figure 40.

[56] ICS CCSS https://healthandcarenotts.co.uk/wp-content/uploads/2020/04/8398-Clinical_Strategy_V6-1.pdf

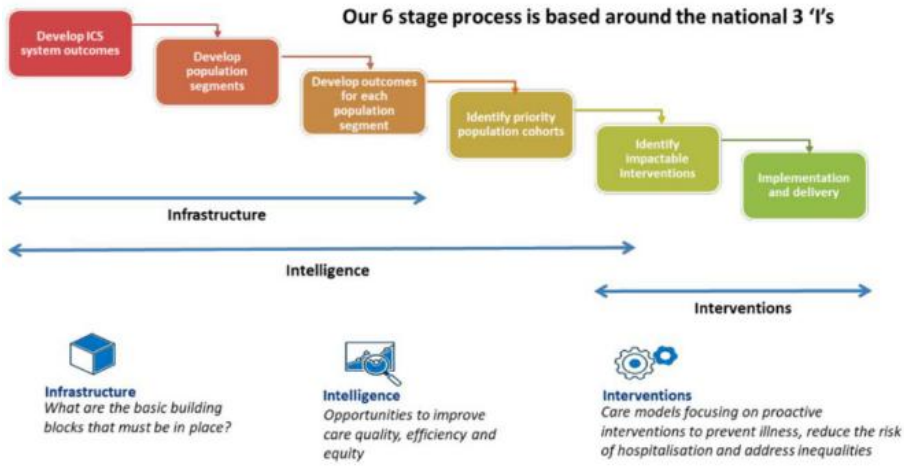


Figure 40 ICS 6-stage population health management approach[57]

We have completed deep dives into chronic obstructive pulmonary disease (COPD), diabetes and ageing well (see Appendix 6) that follow this process. Figure 41 provides an example of evidence-based interventions for ageing well which have been derived from an in-depth analysis of populations health and care needs. These interventions would be targeted based on a population segmentation of needs ranging from self-care to high intensity, ensuring that care can be personalised to improve outcomes and use resources efficiently.

Figure 41 Exemplar of evidence based interventions for ageing well

[57] Ageing Well Deep Dive, Nottingham and Nottinghamshire ICS

5.2.5 Integrated Care System detailed service reviews

As part of a long-term process of transformation, we have completed service reviews that bring together health professionals and patients to look how we can improve care. Our reviews have been truly collaborative, putting patients and clinicians at the centre of the process and enabling different organisations to come together to share knowledge, experience and expertise.

We have completed twenty service reviews which provide clarity on some of the wider system interventions and changes needed for different services, details of which can be found within Appendix 7:

- Colorectal
- Cardiovascular disease
- Children and young people
- Depression and anxiety
- Diabetes
- End of life care
- Ear nose throat
- Eye health
- Frailty
- Gastroenterology
- Heart health
- Maternity and neonatal
- Musculoskeletal
- Oncology
- Personality disorders
- Respiratory
- Skin health
- Urgent care
- Urological health
- Women's health

5.2.6 Working with local authorities

The success of both our integrated care model and our proposals for acute care relies on successful collaboration with our local authority colleagues to deliver high quality personalised care, enabling people to stay in their home wherever clinically possible. This will require integration of funding, information systems and workforce, underpinned by significant support for culture change and organisational development.

We are already working jointly with local authorities on a number of schemes, including:

- **Enhanced Health in Care Homes**

The NHS and Local Authorities are working in partnership to ensure that the range of targeted support provided to care homes meets the needs of residents, staff and the system.

- **Local Area Co-Ordination**

The NHS and Local Authorities are working collaboratively around the introduction of Local Area Co-Ordination into Nottingham and Nottinghamshire, ensuring that we identify people early and connect them with assets in their local community.

This strong partnership will continue as we refine and implement our proposed clinical model of care.

5.2.7 Working with primary care networks (PCNs) and place based partnerships

Our clinical model recognises the importance of working with wider organisations including community and primary care services, local authorities and voluntary sectors through our primary care networks (PCNs) and place based partnerships.

We have engaged with primary care and community care during development of the clinical model. Our engagement has identified ten key areas, centred around increasing care in the community and providing services closer to home[58]:

1. Include community models for:
    a. Outpatient services including diagnostics and procedures
    b. Perioperative care
    c. Cancer care – diagnostics, treatment and post treatment
    d. Development of alternative consultation models (telephone, video, online)
2. Acknowledge the need to develop community hubs including diagnostic/ treatment facilities in fit for purpose premises with appropriate IM&T infrastructure
3. Explicitly describe the models for integrated working between system partners which are required to facilitate appropriate use of secondary care resources including:
    a. reduction of inappropriate emergency admissions
    b. reduction of unwanted variation in outpatient referrals
    c. further development of alternative pathway models (to admission and outpatient referral) including widespread advice and guidance service
    d. further development of models of care to support early discharge/reduce length of stay
4. Include an aspiration to develop shared clinical records /integrated clinical systems across the health and care system
5. Explicitly address the development of virtual consultation/telecare services and the importance of these to the integrity of the TNUH clinical model
6. Develop emergency pathways for all specialities which are independent of the emergency department (unless clinically appropriate for individual patients) to streamline patient care, avoid duplication, potentially reduce length of stay and reduce demand on the emergency department
7. Agree evidence based clinical pathways including pre-referral investigations and management / referral thresholds
8. Develop effective channels of communication between primary and secondary care facilitating prompt access for patients needing to be referred into secondary care pathways/prompt sharing of information with GPs
9. Acknowledgement of the importance of mental health services across all workstreams and the wider system
10. Acknowledge the importance of self-care and prevention across all workstreams and the wider system

[58] TNUH Outline Clinical Model

5.2.8 Conclusion

Clinical design principle: All care pathways should focus on integrated working with system partners to deliver appropriate out of hospital care including self-care and prevention.

The key principles contributing to this design principle are:

- The patient is the focus: personalised care approach, taking into account both physical and mental health needs, patient choice and carer considerations
- Care is appropriate: the most appropriate care, by the most appropriate person/team in the most appropriate setting at the most appropriate time
- Access is equitable for all: barrier to accessing care for vulnerable patients should be identified and addressed
- Patients are partners: shared decision making supported by professionals
- Staff well-being is supported: the importance of health and wellbeing to staff and workday experience is recognised and prioritised.

5.3 Emergency care

5.3.1 Introduction

With approximately 600 daily attendances to the Emergency Department (ED), QMC is one of the busiest departments in the country. Whilst the attendance rates decreased through the Covid lockdowns they have returned to pre-pandemic levels but with increased complexity of presenting conditions and significant demand from the elderly population. Patients are also admitted as emergencies directly to the City campus via several emergency receiving areas and due to the current service configurations a significant number of patients needing emergency care are transferred between the hospital sites. Our clinical model seeks to build on the excellent services we already have in place to improve outcomes for patients. We recognise the need to work as a system to deliver improvements in emergency care services. Our proposals are predominately focused on how we deliver emergency care in hospital but will only work if we have the right levels of support in place across Nottingham and Nottinghamshire to improve flow through the system. We are actively considering co-location of an Urgent Treatment Centre (UTC) on an acute site as part of this work. A core component of this will be to reduce the number of people in hospital beds who are medically fit for discharge by providing ongoing care at home or in the community.

5.3.2 Strategic context

The vision and future pathway for adult emergency care were designed in response to the opportunities for improvement that were identified utilising local, regional and national learning and guidance. The direction of travel is towards greater consolidation of emergency care services in hospital to improve efficiency, flow, and patient experience.

- **NHS Long Term Plan (LTP):** the NHS Long Term Plan sets the ambition that every acute hospital with a Type 1 Emergency department will move to a comprehensive model of same day emergency care (SDEC) 12 hours a day, 7 days a week. The proportion of acute admissions discharged on the day of attendance should increase

to a third. Acute hospitals should provide a comprehensive frailty service across the hospital, covering all specialties. The plan also sets the ambition to separate urgent from planned services. Urgent care should be delivered on a 'hot' site [59] which allows trusts to provide improved trauma assessment and better access to specialist care, so that patients have better access to the right care at the right time.[60] It proposes a redesign of urgent and emergency models of care with system partners, focussing on the opportunity to consolidate services on one site.

- **Nottingham and Nottinghamshire ICS Clinical and Community Services Strategy (ICS CCSS):** one of the aims of the ICS CCSS is for a consistent model of emergency and urgent care across Nottingham and Nottinghamshire that is clearly understood by the public, that encourages appropriate use of the emergency department (ED), urgent treatment centres and primary care services, and that in turn reduces demand on ED and ambulance services. A key outcome measure will be parity of the service offer around physical and mental health care needs.[61]
- **Nottingham and Nottinghamshire ICS frailty clinical community services strategy:** the frailty strategy is based on what matters to the older person living with frailty. Emergency department services will continue to be a key part in treating the older population, but the aim is to shift frailty as "everyone's business" and treated as a long term condition with integrated models of care. This will mean transitioning to a more preventative approach where all citizens are identified before they are at risk and provided with the support to achieve their full potential. This will require collective use of data and an integrated workforce to reach people in their own homes and reduce hospital based care.[62]
- **Nottingham and Nottinghamshire respiratory clinical and community services strategy:** the strategy identifies major stages in the asthma or COPD patient's journey and stresses a need to reorganise the way in which these services are delivered, from prevention through to longer term support for those at highest risk or those living with these conditions. A whole pathway approach in the provision of asthma and Chronic Obstructive Pulmonary Disease (COPD) services is crucial in order to maximise the clinical outcome for patients, their quality of life and experience of asthma and COPD services. Major themes within the strategy are prevention, detection and diagnosis, and both acute and chronic disease management delivered by a multidisciplinary team[63].
- **Nottingham and Nottinghamshire urgent care clinical community services strategy:** this strategy is focused on transitioning to more equitable prevention through prevention and a simplified improving access through a simplified, virtual model for assessment and navigation. This will require partnership working across Nottingham

[59] A hot site focusses on emergency or urgent care, and cold sites focusses on planned care including surgery and medicine

[60] https://www.longtermplan.nhs.uk/

[61] https://mk0healthandcary1acq.kinstacdn.com/wp-content/uploads/2020/04/8398-Clinical_Strategy_V6-1.pdf

[62] Nottingham and Nottinghamshire ICS Frailty Clinical and Community Services Strategy, 2019

[63] Nottingham and Nottinghamshire ICS Respiratory (Asthma and COPD) Clinical and Community Services Strategy, 2019

and Nottinghamshire, sharing infrastructure and treating patients in appropriate community locations[64].

5.3.3 Current clinical model for emergency care

NUH emergency care comprises both emergency and urgent services delivered in hospital and covers the full spectrum from life-threatening illnesses or accidents which require immediate, intensive treatment, through to those which require urgent attention but are not life threatening. Emergency care performs a critical role in keeping the population healthy[65].

The following emergency care services are within the scope of our clinical model:

- Emergency Department (including same day emergency care (SDEC) and hot clinics)
- Assessment units
- Unplanned admissions
- Emergency surgery
- Psychological support for the emergency care pathway
- Theatres, anaesthetics and level 1, 2 and 3 critical care

Between our two hospital sites, these services are currently partially or fully provided, as shown in Figure 42.

QMC services	City Hospital services
Emergency department and major trauma Emergency surgery (multiples specialties) Acute medicine (inc. gastroenterology, neurology, hyper acute **stroke unit (HASU),** healthcare of older people (HCOP),), neurosurgery	Emergency cancer admissions through the specialist receiving unit Burns unit Some acute medical specialties such as cardiology, respiratory, stroke, renal Surgical specialties including upper gastro-intestinal, thoracics, cardiac surgery, urology

Figure 42 Current distribution of emergency care services

5.3.4 Vision for emergency care

Our vision for adult emergency care services is closely aligned with national guidelines and our ICS strategies. The principles set out in Figure 43 underline our commitment to driving quality outcomes by reducing the need for hospital admissions and integrating services across Nottingham and Nottinghamshire (see Appendix 8 and Appendix 9)

[64] Nottingham and Nottinghamshire ICS Urgent Care Clinical and Community Services Strategy, 2021

[65] https://www.england.nhs.uk/urgent-emergency-care/about-uec/

1. To enable the delivery of exemplar care, emergency care services would be **consolidated as a single service with co-located dependencies** (including diagnostics and acute specialities such as respiratory, cardiology and gastrointestinal). Any ongoing need for an emergency portal at an alternative campus should be consolidated to as few units as possible
2. Emergency care would **focus on providing alternatives to admission**, ensuring patients are seen by the right clinician at the right time to avoid an inpatient stay where appropriate. This would include development of same day emergency care and hot clinic provision.
3. Emergency care would offer **an integrated physical and mental health service where appropriate,** including introducing a mental health liaison team based in the emergency department.
4. Emergency care services would be supported by **a system wide focus**

Figure 43 Emergency care vision

5.3.5 Future emergency care pathway

The proposed model of care for emergency shown in Figure 44 will enable patients to access services appropriate to their needs, supported by standardised pathways to improve quality, efficiency, flow and patient experience.

Key features include:

- consolidated services on a single site[66] with co-located dependencies (including 24/7 diagnostics and acute specialities.)[67] allowing for rapid diagnosis, treatment and improved outcomes for patients with an acute medical illness
- an increase in the provision of services which provide an alternative to admission including urgent and emergency care in the community and the development of same day emergency care and hot clinics at NUH[68].
- comprehensive discharge planning to ensure patients are discharged when it is medically safe to do so, in cases when an admission is required[69].
- a fully integrated physical and mental health service for patients including a mental health liaison team based in the emergency department[70]
- helipad on site so that patients can be conveyed directly to the emergency department

[66] NHS Long Term Plan – ambition to separate urgent from planned services with urgent care delivered on a hot site to ensure patients have better access to the right care at the right time.

[67] Insights from the clinical assurance of service reconfiguration in the NHS (2015) – recommends that acute medicine teams should be co-located within the emergency department

[68] Effectiveness of acute medical units in hospitals (2009); Same-day emergency care (2019); NHS Long Term Plan – a third of patients requiring emergency admission will be able to return home the same day; Royal College of Emergency Medicine 'Delivering same day emergency care from ED' (2019)

[69] Discharge to assess – 10 days in hospital can lead to equivalent of 10 years of ageing in the muscles of >80 yr olds; NICE guidance 'Transition between inpatient hospital settings and community or care home settings for adults with social care needs' (2015); NICE (2009) Rehabilitation after critical illness

[70] Royal College of Emergency Medicine 'Mental Health in Emergency Departments' (2019)

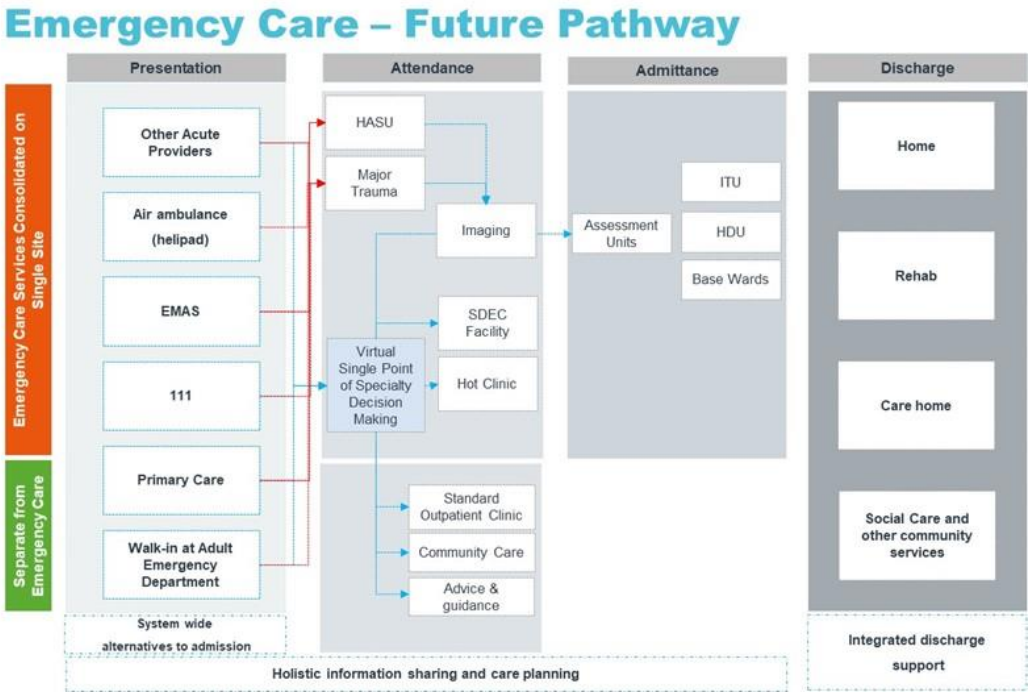


Figure 44 Emergency Care Future Pathway

5.3.5.1 Accessing Nottingham University Hospitals NHS Trust emergency care

Wherever possible, patients will be triaged via a virtual single point of speciality decision making to stream patients to the right service, ensuring they receive appropriate care in the right place, first time, and minimising the need for extended hospital visits.

Primary care and community care organisations will have access to the single point of access for all key acute medical and surgical specialties, as illustrated in Figure 5. This virtual single point of access will provide rapid advice and guidance to system partners, signposting to out of hospital services and alternatives to admission where clinically appropriate.

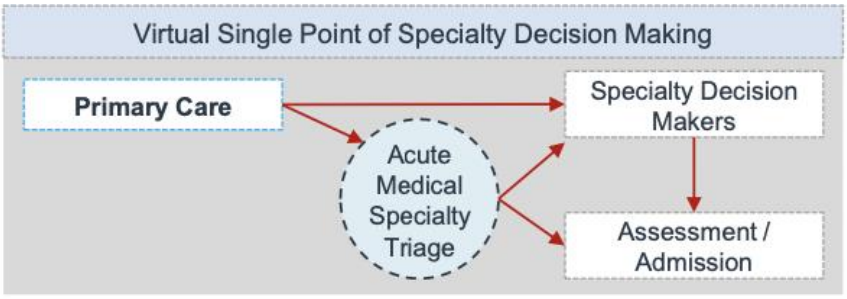


Figure 45 Virtual Single Point of Specialty Decision Making

Increased system integration will support this approach by providing capacity to deliver services outside hospitals. We will develop and expand models such as Urgent Community Response, which will be available routinely for local people. This will enable the emergency ambulance service and both in-hours and out-of-hours general practice to access a dedicated team to provide urgent, home based assessment and intervention within 2-4 hours. This will enable people to safely stay in their own homes and prevent a hospital admission.

Additional admission alternatives from the ICS urgent and emergency care, proactive care and self-management programme (UCRPFT) are summarised in Figure 46. One of the responsibilities of this programme is to support delivery of demand management for both admissions and occupied bed day reductions across the ICS.

Attendance and admission alternatives	Bed day efficiencies
• Urgent Community Response – mobilising a two-hour urgent care response service across the ICS that will prevent admission to hospital and manage patients in the community • Virtual wards – mobilising a virtual ward offer across the ICS which will increase capacity to manage acute patients but in their own homes. The focus will be on chest infection, frailty and IV therapy • Respiratory – increasing the pulmonary rehab offer and maximising use of technology to reduce deterioration and potential admission to hospital • Non conveyance – several workstreams designed to reduce conveyance to type 1 Eds • Falls – expansion of evidence-based strength and balance training across the ICS • NUH front door – transforming the pathway at the front door of QMC including exploring the potential for a co-located urgent treatment centre (UTC) which will be responsible for streaming	• Discharge to assess (D2A) – mobilising a discharge to assess and home first service that increases P1 (home with support) capacity and reduces P2 (bedded care) capacity • Same day emergency care (SDEC) – ensuring East Midlands Ambulance Service (EMAS) and other providers have direct access to same day emergency care pathways, avoiding ED • Single point of access (SPA) – exploring a single point of access (in the first instance) at NUH, facilitating direct access to specialities and SDEC for primary care and the clinical assessment service (CAS)

Figure 46 Additional admission alternatives from the ICS Urgent and Emergency Care, Proactive Care and Self-Management programme (UCRPFT)

In some cases, patients will need to be streamed directly to a specialist emergency pathway. East Midlands Ambulance Service (EMAS) will respond to different emergency categories which they will assess on the scene. If a patient meets criteria in assessment that indicates they are a major trauma case they will be flagged and conveyed directly to resus / major trauma. EMAS is a member of the strategic oversight group and are actively engage in the programme.

5.3.5.2 Same day emergency care (SDEC)

We want to redesign the emergency front door by expanding and improving our SDEC service. This will increase the availability of early senior clinical and diagnostic input to enable patients to be treated and discharged without having an overnight bed stay. *Getting*

it Right First Time [71](*GIRFT*) recommends that trusts optimise the provision of SDEC and urgent clinic access, including the supporting imaging, as outlined in the *NHS Long Term Plan*[113] and *NHS Planning Guidance (2019/2020)*[72]. A potential patient journey is described in Figure 47.

SDEC future patient journey

1. 22-year old woman presents to GP with acute right sided abdominal pain and fever
2. GP speaks to on call consultant in virtual single point of specialist decision making.
3. Patient referred to surgical SDEC – rapid assessment and investigations – surgical and gynaecological cause excluded
4. Further assessment and investigations by acute medical team identify she has an acute kidney infection. Treatment started and patient discharged home on same day with management plan and outpatient follow up in place

Figure 47 SDEC patient journey

Our model for SDEC will bring together medical ambulatory, surgical ambulatory and specialty led ambulatory care units adjacent to the emergency department. The model will be focused on the NHS Improvement streaming model[73]:

- SDEC staff actively identify patients in ED and 'pull' into SDEC
- Consistent and optimal patient selection, e.g. utilising decision tool, with inappropriate referral feedback loop

This model will provide rapid access to specialist review and treatment with access to diagnostics in the same timeframe as ED, enabling patients to return home the same day[74]. Our SDEC units will provide a seven-day consultant-led service.

Evidence shows that this co-location can deliver a reduction in the number of emergency bed days used, reduction in number of patients admitted to hospital for fewer than 24 hours, improved experience for patients and staff, improved quality of care, improved patient flow and improved ambulance turnaround.[75] This would also contribute to reducing risk of infections and de-conditioning[76], providing further quality of care and financial benefits in terms of reduced bed days.

A more detailed view of the patient pathway is shown in Figure 48.

[71] Getting It Right First Time: emergency medicine

[72] NHS Operational Planning and Contracting Guidance 2019/20 (NHS England, 2018)

[73] NHS Improvements (2019) Same-day emergency care,

[74] Royal College of Emergency Medicine 'Delivering same day emergency care from ED' (2019)

[75] Royal College of Emergency Medicine (2019) 'Ambulatory Emergency Care Toolkit'

[76] NHSE Same Day Emergency Care

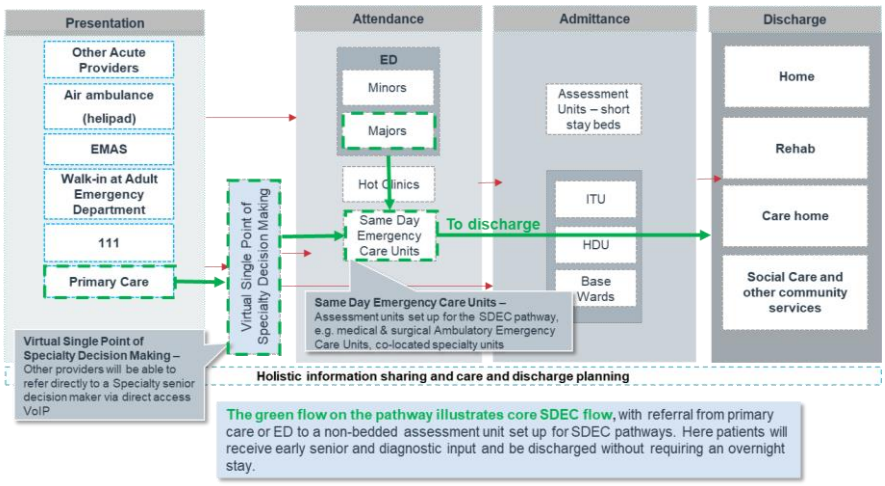


Figure 48 Supporting People to Stay at Home – Emergency Care Future Pathway

5.3.5.3 Assessment units

An assessment or admission area is a physical location outside the emergency department, where clinical assessment and admission (both clinical and administrative processes) take place. Patients may arrive from primary care, the emergency department, outpatient clinics or via other routes. This differs from same day emergency care (SDEC) as it assumes that a patient will need an intervention in secondary care, typically a length of stay of less than 24 hours, rather than discharge into the community within a shorter time-frame.

Under the proposed future clinical model of care, existing assessment units which are spread across the hospitals would be brought together to improve flow and the quality of outcomes for patients. This co-location would enable:

- Flexibility of space
- Standardisation of processes
- Efficiencies in clinical support services e.g. imaging
- Reduction in siloed working
- 24/7 coverage for smaller specialties that do not have resources to provide assessment units independently

There is an expectation that length of stay would be less 24 hours. All specialties would need to provide proportionate daily input into these services

5.3.5.4 Acute respiratory services

The proposal for consolidating acute respiratory with other emergency care services and necessary dependent services responds to specific considerations within the long term plan (LTP) and clinical and community services strategy (CCSS). Both plans identify the huge impact of respiratory services on the burden of clinical care. Within Nottingham and Nottinghamshire, respiratory disease along with circulatory disease and cancers currently

account for 60% of the diseases that cause the gap in life expectancy between the most and the least deprived areas[77].

Respiratory has the largest number of emergency admissions and the highest proportion of patient transfers, driven by the lack of specialist cover at QMC. Approximately 50% of patients attending the respiratory assessment unit (RAU) at City Hospital have been transferred from QMC. By consolidating respiratory assessment with ED patients will have direct access to specialist response and reducing the patient's overall length of hospital stay.[78].

Our proposed model would also enable respiratory services to be consolidated with same day emergency care. Approximately 10% of emergency respiratory patients are treated within this model and by consolidating our emergency care services we will have the capacity to increase this provision substantially in line with the LTP.

5.3.5.5 Burns and emergency plastics services

Our proposed clinical model would enable the consolidation of the burns and plastics emergency service with the rest of the emergency pathway to achieve a long-standing organisational priority to bring this service close to the major trauma centre.

Co-location will ensure trauma care patients requiring specialist plastics surgery would be able to receive on-site management from specialist burns and plastic teams. This would improve patient experience and reduce length of stay as patients attending with burns would not require cross-site transfer for treatment management[79].

The clinical model would respond to national service specifications:

- The national service specification for major trauma services (d15-major trauma 0414) identifies plastics as being a requirement for co-location with major trauma services[80]
- The national service specification for specialist burns services (d06-specialised burns care 0414) identifies major trauma services as being co-located with specialised burns services[81]

Future patient journeys are described in Figure 49 and Figure 50.

Burns future patient journey

1. A 70-year old patient suffered 35% full thickness burns (inc. face, hands, chest with inhalational injury) in a house fire and, following extraction from building, was transferred to emergency department.

[77] Nottingham & Nottinghamshire ICS Clinical and Community Services Strategy 2019-2024.

[78] British Journal of Anaesthetists (2017) 'Transfer of the critically ill adult patient' British Medical Journal (2019) 'Inter hospital transfer and patient outcomes

[79] Nottingham University Hospital (2022) 'Clinical Operational Briefing Adult Burns and Plastics Trauma'

[80] NHS Standard Contract For Major Trauma Service (2013)

[81] NHS Standard Contract For Specialised Burns Care (2013)

2. Immediate review by burns & plastics surgery team supported by burns nursing team.
3. Patient intubated and transferred to ITU where co-ordinated care continued involving on-site ophthalmology and elderly care.
4. Joint discussions and theatre possible for reconstructive surgery.
5. Patient X discharged with ongoing burn care provided by burns outreach at the rehab hospital and later in the community.

Figure 49 Burns future patient journey

Plastics future patient journey

1. Patient Y will arrive in ED where he will be assessed in by the plastic surgery team in conjunction with the orthopaedic team.
2. Patient Y will have his joint orthoplastic fixation performed on an orthoplastic operating list by defined members of the orthoplastic team
3. Patient Y will be monitored on a plastic ward, where the nurses routinely look after free flaps and can readily recognise a struggling flap
4. A co-located orthopaedic trauma and plastic trauma service would lead to a more unified approach, more time with better patient outcome

Figure 50 Plastics future patient journey

5.3.5.6 Cardiology services

Cardiology services at NUH are configured according to a standard model for twin sites in use across the country in a number of similar tertiary centres. A highly specialised purpose built building (Trent Cardiac Centre, TCC) on the City campus comprises cardiac surgical and interventional cardiology activity with associated in-patient ward accommodation, cardiac theatres, high dependency and intensive care units, as well as interventional cardiac catheter laboratories and recovery areas. The Emergency Department (ED) being co-located with Acute Medicine on the QMC campus therefore means that the majority of acute cardiology admissions will initially follow a pathway via QMC. Three main work streams result:

- Emergency need for time critical cardiology intervention
- Intervention required in a specified time frame but not immediate
- No intervention envisaged but in-patient cardiology care required

A significant portion of the acute medical take relates to cardiology (around 34%). Many patients can be assessed and discharged home from the QMC site without inter-hospital transfer, providing an efficient process. Cardiology provide a round the clock dedicated consultant on call rota every day of the year solely for the QMC site, supported by a daily 7am to 7pm service from specialist cardiology nurses (the CATS team).

Time critical interventions are required in two main patient groups:

- ST elevation myocardial infarction (STEMI) heart attack patients (with or without out of hospital cardiac arrest (OHCA))
- Dangerously slow heart rhythms (bradycardia)

Protocols are in place to provide for ambulance service assessment in the field such that 70% of STEMI patients are admitted directly to the TCC and do not attend ED. A much smaller number of patients come directly to the TCC via the bradycardia pathway. For patients with less hazardous heart attacks (non-ST elevation myocardial infarction, NSTEMI), intervention is recommended within 72 hours and thus transfer is arranged promptly, but not as an immediate emergency. Other patients include those with heart failure or infective endocarditis for example, who are also transferred in a timely fashion, but not for procedures.

It follows that 30% of STEMI patients either self-present to ED or are taken there by ambulance because the diagnosis is not firm or because of OHCA requiring invasive ventilation. The agreed OHCA protocol stipulates assessment in an ED in the first instance if patients cannot protect their own airway, based on safety grounds. Though around 60% of patients suffering OHCA will have underlying coronary disease, only a small number of such patients (representing around 2% of annual PCI activity at TCC) are caused by STEMI, needing immediate intervention. In patients with OHCA with return of circulation and needing ventilation, the protocol calls for stabilisation in the nearest ED prior to emergency transfer should STEMI be diagnosed. This pathway works well. Patients that suffer OHCA that respond to resuscitation and do not need ventilation are brought direct to the TCC anyway and do not go to an ED. Patients with OHCA requiring invasive ventilation, but not immediate coronary intervention, are transferred to the City intensive care unit for further evaluation. Should their condition change they are now on the correct site if a coronary procedure becomes appropriate. Further management (assuming no other underlying non-cardiac cause) is continued by cardiology if patients recover.

The operating model for Primary Percutaneous Coronary Intervention at the Trent Cardiac Centre has been in place since 2010 and is kept under regular review with appropriate partners. The catchment area for STEMI patients is such that patients can be transferred from QMC ED, from SFH ED, from Newark walk-in centre and occasionally from other EDs when rare diverts are in place (eg from Chesterfield). Patient perceptions of ambulance response times are likely driving a steady increase in self-presentation. The national average of patients needing IHT (around 19%) is misleading in this context as there are so many different system configurations. The IHT rate of around 30% at the TCC reflects the existing geographical reality in this region.

Patients admitted directly to Trent Cardiac Centre have a median call to balloon time of 143 minutes for all comers (versus 135.5 minutes in the national audit, which excludes OOHCA and cardiogenic shock). For IHT patients (all comers) the median call to balloon time is 235 minutes (versus 203.4 minutes in the national data, which excludes OOHCA and cardiogenic shock). Protocols are in place to minimise IHT, to promote early recognition and transfer, borne out by a 25% false activation rate for patients brought to Trent Cardiac Centre by ambulance who do not go on to undergo PPCI. Robust liaison arrangements exist to promote prompt protocol driven transfers from outlying institutions to improve equity of access for IHT patients.

Audit data submitted to the National Institute for Cardiac Outcomes Research (NICOR) is used to analyse transfer timings. Nottingham has the third best performance in the country (behind Harefield and Castle Hill Hospital in Hull, both also twin site models) for ‘door to balloon time’, being less than 60 minutes in around 85% patients, including inter-hospital transfers. This is a measure of hospital performance, whereas for system performance, ‘call to balloon time’ is measured. The target is less than 150 minutes and is well above the average in Nottingham (achieved in over 60% of STEMI patients).

Mortality data (in-hospital and 30 day) for heart attack patients in Nottingham is also in line with that expected from the pre pandemic national average, 9.2% versus 9.07%. In addition the 30 day mortality rate across both sites is comparable; 8.9% for direct admissions at City Hospitals and 9.5% for

admissions at QMC. Consequently, the current model takes account of the clinical need of the patient population and functions well

The alternative model of providing interventional procedures on the QMC site would divide resources, produce formidable inefficiencies in planned care and exacerbate current workforce challenges.

5.3.5.7 Urology services

Emergency Urology services at NUH are provided jointly with SFH with the inpatient beds currently at City Hospital. The unit takes patients direct to the ward or via the Emergency Departments at QMC and Kings Mill Hospital. Providing the emergency Urology inpatient service at QMC would result in fewer transfers from QMC to City (151) and would enable quicker access to advice for some general surgery cohorts of patients at QMC. Whilst it would benefit the emergency pathway it would result in the overall inpatient beds (emergency and elective) being spread over three sites (QMC, City Hospital and Kings Mill Hospital) compared to the current two sites (City Hospital and Kings Mill Hospital) resulting in implications for on call and staffing requirements. It would also result in further travel for patients in the Kings Mill Hospital catchment area who are conveyed further to QMC site then they previously would at City Hospital.

5.3.5.8 Renal and Transplant services

Locating Renal and transplant services on our emergency site would enable the emergency admission pathway to be aligned with other medical admissions with quicker access to a broader specialist opinion. In addition it would enable a more effective vascular access service by co-locating on the QMC site with Vascular Interventional Radiology.

Currently inpatients at QMC who require dialysis are transferred to City Hospital to the dialysis unit. In the future with dialysis provision at the QMC site few moves to City hospital would be required.

5.3.5.9 Infectious diseases

Infectious diseases is a largely peripatetic service, with patients at both sites having a complex infection that will require specialist management. This will be provided by either (i) acute physicians with microbiology/infection training or (ii) via Consultant in reach from infectious disease consultants, which is already in place. Locating our small amount of infectious disease inpatient beds at the QMC would remove the need for in the current in-reach model and would enable quicker specialist input on the emergency site. There is a dependency between Infectious Disease and sexual health which would remain at the City site. An in-reach model would need to be provided at City hospital in the future.

5.3.6 Benefits

The proposed model addresses many of the issues described within the case for change. These benefits are summarised in Figure 51.

Figure 51 Emergency care benefits

Category	Benefit
Improve hospital efficiency (patient flow)	• Improved front door provision, increasing availability of admission alternatives for all patients and reducing bed pressure allowing patients that require admission to be admitted more quickly • Ensuring patients are seen in the right place first time – reducing steps in pathway • Economies of scale for emergency admission units (incl. SDEC)
Decreasing unwarranted variation in quality, safety and outcomes for patients requiring emergency care	• All emergency care patients have rapid access to full range of acute medical and surgical specialties on site – removes need for emergency transfers • More standardised and consistent level of care for patients
Improving patient experience	• Patients treated in fit for purpose setting with quick access to specialist expertise that they require • Reduced steps in a patient journey and ensuring patients are seen in the right place first time to streamline their pathway and experience • Reduced transfers between sites
Improving staff experience	• Workforce efficiencies through single team • Increased opportunities for emergency physicians to develop new skills, implement new treatments and new therapies • Increased opportunities for collaborative working and cross-specialty learning

5.3.7 Clinical design principle for emergency care

Clinical design principle: All emergency secondary care services should be consolidated on one site where necessary dependencies are available 24/7.

Based on the clinical model, we have agreed this clinical design principle for emergency care. The clinical design principle responds to national, regional and local strategies with the ambition to consolidate emergency care services on the same site, improving patient access to the right expertise at the right time. The proposed delivery model for emergency care adheres as far as is practicable with the Clinical Design Principle for emergency care within the parameters of the programme. See Chapter 6 Options Development and Appraisal.

5.4 Adult Elective care

5.4.1 Introduction

Elective care includes planned surgery, including day case, and elective cancer surgery but excludes outpatients and diagnostic services (see section 5.7). Elective services are planned

in advance and involve specialist clinical care or surgery. In 2019/20 there were over 19,400 elective admissions to NUH. Our range of services treat patients with varying health needs and levels of complexity.

Our future elective model would focus on consolidating elective surgery onto a single hospital site to protect against surges in emergency demand. More widely, the model would aim to address areas where there is currently inconsistency between pathways or a lack of integrated working which results in poor quality patient experience and failure to meet quality standards. We aim to integrate pathways so that patients have ongoing care and support, closer to home, across Nottingham and Nottinghamshire.

5.4.2 Strategic context

Our vision and future pathway for elective care responds to the opportunities for improvement identified from local, regional and national learning and guidance. Our ambition is to create protected elective capacity where possible enabling us to meet national targets for elective surgery and improve patient outcomes.

- **NHS Long Term Plan:** the NHS Long Term Plan recognises that separating urgent from planned services can make it easier for hospitals to run efficient surgical services. Planned services provided from a 'cold' site where capacity can be protected, reduces the risk of operations being postponed. [82]
- **Royal College of Surgeons of England (RSC):** the RCS, in its publication 'Separating emergency and elective surgical care', supports the separation of elective and emergency care services. It described significant benefits including improved quality and efficiency, better continuity of care, reduced hospital-acquired infections risks, shorter length of stay, fewer cancellations, improved supervision of trainees and improved patient safety.[83]
- **Getting It right First Time (GIRFT) programme**[84]: this is a national programme designed to improve medical care within the NHS. It aims to identify models of care from across the NHS that improve outcomes and patient experience, without the need for radical change or new investment. Several GIRFT reports are relevant to the elective care clinical model including general surgery, elective orthopaedic surgery, ear nose and throat (ENT), ophthalmology, spinal services, urology, vascular surgery, cardiothoracic surgery and neurosurgery.
- ICS clinical and community services strategy (CCSS): the ICS CCSS recommends the introduction of designated planned care facilities to support consistent delivery of planned care, independent of pressures on emergency care services. It also supports a shift of care from acute to community settings, particularly for perioperative care, which should increasingly take place in the community setting using outreach services supported by technology[85]. There are also several detailed service reviews as part of CCSS relevant to elective care, including urological health, colorectal, eye

[82] https://www.longtermplan.nhs.uk

[83] https://www.rcseng.ac.uk/library-and-publications/rcs-publications/docs/seperating-emergency-and-elective/

[84] https://www.gettingitrightfirsttime.co.uk/

[85] https://mk0healthandcary1acg.kinstacdn.com/wp-content/uploads/2020/04/8398-Clinical_Strategy_V6-1.pdf

health, musculoskeletal to elective orthopaedics, ear nose and throat and hearing services.

5.4.3 Current clinical model for adult elective care

Our clinical model for elective care comprises the full range of planned activity that is delivered from our acute hospital sites, linking into services delivered more widely outside hospital as part of an integrated model. This means the clinical model would meet the needs of patients with varying levels of acuity and complexity, with different access and support requirements.

The elective services within the scope of our clinical model are:

- Inpatient surgery
- Inpatient stay
- Pre-operative assessment
- Rehabilitation and rehabilitation (i.e. pre and post operative)
- Day case surgery
- Theatres, anaesthetics and critical care

Across our two acute hospital sites, the full range of elective services are already provided, as shown in Figure 52.

The focus of our future model for hospital services would be to address the key issues of protected elective surgical capacity and standardised pathways identified within the case for change. There is, however, a proportion of elective work that would maintain its current relationship and co-location with acute services where specialist input may be required on complex cases. For these services, splitting non-elective and elective activity would impact clinical quality.

Figure 52 Current configuration of elective services

QMC services	City Hospital services
Some planned surgery including day case theatres, colorectal, gastro, maxillo-facial, ear, nose and throat, ophthalmology, and spinal, HPB, neurosurgery, vascular	Majority of planned surgery including elective orthopaedics, endocrine, transplant, plastics, skin cancer, thoracic, cardiac, breast, urology

5.4.4 Vision for adult elective care

We have defined a vision for elective services to ensure we are closely aligned with national guidelines. This vision, as described in in Figure 533, commits us to excellent outcomes and minimising unwarranted variation across our services (see Appendix 10)

1. Elective care will **deliver highly efficient, best practice services** which provide excellent clinical outcomes and patient experience. Services will be provided from a dedicated facility separate from emergency care (where appropriate).
2. Elective care will offer exemplar **standardised streamlined patient pathways which minimise unwarranted clinical variation**. Pathways will focus on delivering best practice, including, reduced waiting times, reduced length of stay and readmission rates.
3. We will fully **integrate as a system to ensure an exemplar patient journey** from end-to-end; this will be enabled by embracing new models of care, utilising integrated digital technologies. Opportunities to deliver more care in the community or virtually will be explored.
4. Elective care will be **at the forefront of research and innovation** to develop cutting edge services.

Figure 53 Elective care vision

5.4.5 Future adult elective care pathway

The pathway shown in Figure 54 illustrates a consolidation of all elective activity excluding specialist services where splitting non-elective and elective activity will impact clinical quality (e.g. neurosurgery, cardiac surgery, vascular) or is provided from fit-for-purpose, ring-fenced estate (e.g. ear nose throat, ophthalmology, oral surgery, orthodontics).

Patients would benefit from adjacencies with critical care, interventional radiology and diagnostics, and rapid access to support from medical specialties and allied healthcare professionals.

Surgery would take within a separate planned care centre with associated inpatient beds. This would mean that cases would be managed efficiently and designed for best patient outcomes and experience.

Diagnostics and pre-operative or post-operative care would be provided in the community or virtually where clinically appropriate. The use of remote monitoring technology to monitor progress and assist management would facilitate earlier discharge from hospital.

Key features include:

- services delivered from a dedicated facility separate from emergency care (where appropriate)[86]
- standardisation and streamlining of pathways to minimise unwarranted clinical variation, and to ensure a seamless end-to-end patient journey through integrated working with system partners[87]

[86] Royal College of Surgeons (2007) Separating Emergency and Elective Surgical Care – separation of emergency and planned care can result in earlier investigation, definitive treatment and better continuity of care, as well as reducing HCAIs and length of stay; NHS Long Term Plan;

[87] GIRFT (2020) Getting it Right in Orthopaedics; NHSE/I (2019) Transforming Elective Care Services

- pathways would strive to deliver best practice clinical outcomes, and reduce waiting times, length of stay and readmission rates[88]
- elective care would be at the forefront of research and innovation, embracing new models of care and utilising pioneering technology[89]

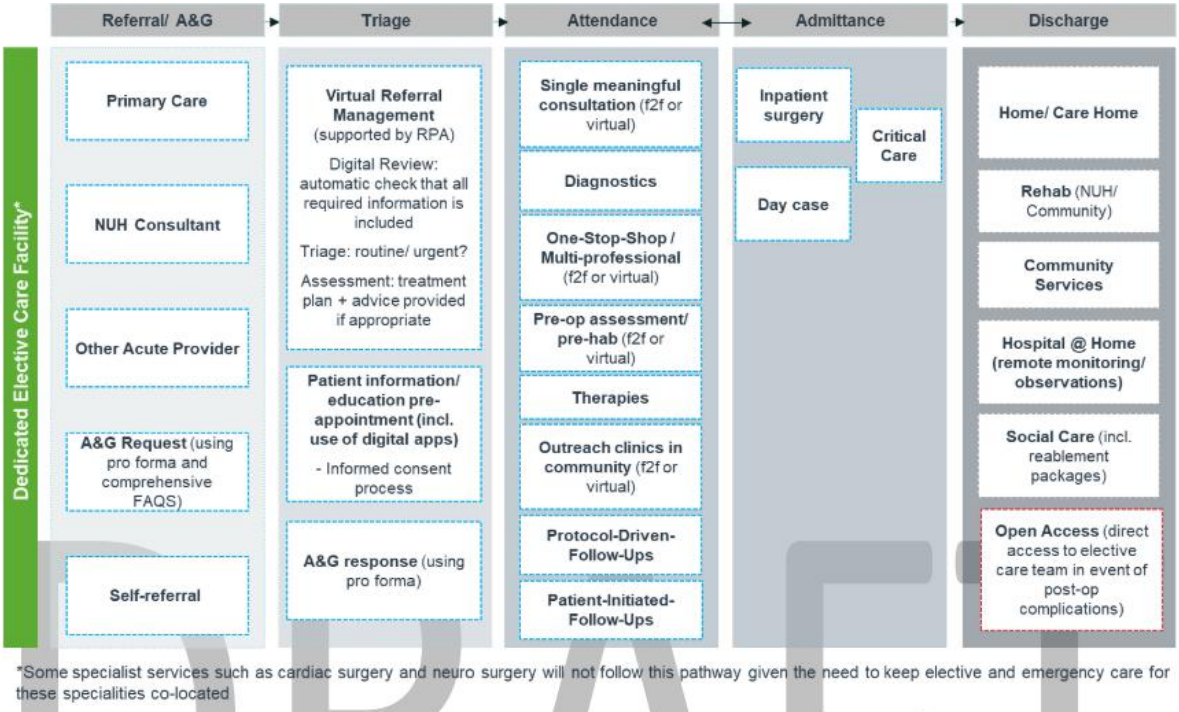


Figure 54 Elective care future pathway

5.4.5.1 Dedicated elective unit

A separate elective centre of excellence, supported by critical care, would improve outcomes for patients, reduce cancellations, and bring about improvements in length of stay through increased utilisation of planned lists and improvement in the use of pre-operative assessments. Separation of emergency and planned care also provides more focussed training opportunities for staff.

We would increase the accessibility of pre-operative and post-operative care by delivering more care virtually or in the community. There would be a focus on 'single meaningful consultations' to maximise the value of individual interactions and potentially reduce the number of follow up appointments required.

5.4.5.2 Emergency cover on a non-emergency site

We would provide comprehensive 24/7 medical cover for elective surgical patients, including post-anaesthesia and critical care on a non-emergency site.

[88] Nuffield Trust (2015) Improving length of stay; Monitor Helping NHS Providers improve productivity in elective care;

[89] Royal College of Surgeons The Future of Surgery

TNUH has set an ambition to increase the provision of the post-anaesthesia care unit (PACU), in line with National Confidential Enquiry into Patient Outcome and Death (NCEPOD) recommendations, to provide optimised postoperative care when patients are at their most vulnerable. Research has shown that PACUs can improve surgical outcomes and reduce postoperative morbidity and mortality[90]. This is in line with the NCEPOD recommendations that trusts 'must make provision for sufficient critical care beds or pathways of care to provide appropriate support in the postoperative period'[91].

In line with Royal College of Surgeons guidance[92], adequate critical care provision (levels 2 and 3) would also be provided at the non-emergency site. We would also increase cover of the Critical Care Outreach Service (CCOT) from an 8am-10pm service to a 24/7 service. NCEPOD recognise that a critical care outreach team are crucial to ensuring wards receive education on recognising and initially managing acute illness.

5.4.6 Benefits

The proposed model addresses many of the issues described within the case for change. These benefits are summarised in Figure 55.

Category	Benefit
Improving access to elective care	• Reduction in cancelled operations for patients
Decreasing unwarranted variation in quality, safety and outcomes	• Reduced healthcare acquired infection rates • Elective patients receive best practice enhanced post-op recovery in a dedicated elective unit
Improving patient experience	• Patients treated in fit for purpose setting with quick access to specialist expertise that they require • Reduction in emergency transfers • Reduced number of cancelled operations for patients
Improving staff experience	• Facilitate protected and concentrated training for junior surgeons and other staff groups • Ward staff not having to manage outliers

[90] Perioperative Medicine (2013) ' Introduction to the postanaesthetic care unit'

[91] NCEPOD (2011) 'A review of the peri-operative care of surgical patients'

[92] Royal College of Surgeons (2007) 'Separating Emergency and Elective Surgical Care' –

Figure 55 Elective care benefits

5.4.7 Clinical design principle for elective care

Clinical design principle: Elective care inpatient facilities and day case surgery should be delivered separate from emergency care in order to protect elective capacity, maintaining access to critical care.

The clinical design principle will enable NUH to protect elective capacity especially during periods of high pressure on emergency care services (for example, during winter). In addition, the clinical model of care would improve clinical outcomes, reduce clinical variation and improve patient and staff experience. The delivery model for elective care generated through the options appraisal process is described in Chapter 6 Options Development and Appraisal.

5.5 Family Care

5.5.1 Introduction

Services for women, children and families are within the family health division at Nottingham University Hospitals NHS Trust (NUH), which provides routine and specialist local care and within the wider East Midlands region, and also nationally for some services. The division is split across QMC and City Hospital, with maternity delivered from both sites and paediatrics consolidated at QMC.

Our proposed clinical model of care would seek to build on existing capabilities within the system to support the delivery of consistently safe, high-quality care through redesigned pathways, in accordance with national, regional and local strategic drivers. Our model focuses on consolidating hospital services provided to women and children in a brand new, state of the art Family Care Hospital at QMC whilst also recognising the need for the provision of local community and outreach services delivered through a multi-disciplinary team approach.

5.5.2 Strategic context

The vision and future pathway for services for women, children and families respond to the opportunities for improvement identified from local, regional and national guidance. They point towards a need for consolidation of interdependent services for women, children and families to improve quality of care.

- **NHS Long Term Plan (LTP):** the LTP states several ambitions for neonatal and maternity services, including:
    - implementation of continuity of care
    - re-design and expansion neonatal critical care services
    - improved access to, and quality of, perinatal mental health care for mothers, their partners and children
    - models of care that are closer to home and bring together physical and mental health services
    - paediatric networks to ensure that there is a co-ordinated approach to critical care and surgical services
    - expansion of mental health services for children and young people

  - commitment to develop and implement networked care to improve outcomes for children and young people with cancer

This is being delivered locally through the Maternity Transformation Plan led by the Local Maternity and Neonatal System.

- **Providing quality patient care maternity standards: a framework for maternity service standards[93] :** a framework of high-level maternity service standards that aim to improve outcomes and reduce variation in maternity care. These standards are most effectively delivered within an interconnected system of service providers, to ensure that women have timely access to a multi-professional team that works in partnership with local and regional specialists and agencies to ensure seamless care between primary, secondary, and community services.
- **National Maternity Review: Better Births[94]**: recommendations around the delivery of safe, personalised care, continuity of care for women, improved perinatal and postnatal mental health provision and multidisciplinary working across boundaries.
- **Better Births Four Years On: A review of progress[95]:** actions include tackling inequalities in outcomes for women and babies, and accelerating progress to support pregnant women to stop smoking to reduce pre-term births.
- **Neonatal critical care transformation review:** the survival of babies is improved if neonatal intensive care units (NICUs) look after at least 100 very low birth weight infants (<1500g) per year and survival is even better when born in busier units delivering >2000 intensive care days. [96]
- **Ockenden Report (2020, 2022)[97]:** the independent review of maternity services found patterns of repeated poor care and failure in governance and leadership that led to cases of harm and deaths of mothers and babies. These incidents were not seen to be unique to a single trust and have been highlighted in other national reports over recent years. The report includes 15 areas for immediate and essential action, including robust pathways for dealing with complex pregnancies, suspension of the midwifery continuity of carer model until safe staffing is available and provision of a risk assessment at each contact throughout the pregnancy pathway.
- **Nottingham and Nottinghamshire LMNS:** The delivery of the long-term plan commitments and recommendations of the Ockenden report and the Better Births review are being implemented locally by the Nottingham and Nottinghamshire Local Maternity and Neonatal System (LMNS). The LMNS is a partnership of organisations, women and families working together to deliver improvements in maternity and neonatal services to enable them to become safer and more personalised.[98] The LMNS Executive Partnership have responsibility for oversight, assurance and

[93] https://www.rcog.org.uk/en/guidelines-research-services/guidelines/standards-for-maternity-care/

[94] https://www.england.nhs.uk/wp-content/uploads/2016/02/national-maternity-review-report.pdf

[95] https://www.england.nhs.uk/publication/better-births-four-years-on-a-review-of-progress/

[96] https://www.england.nhs.uk/publication/implementing-the-recommendations-of-the-neonatal-critical-care-transformation-review/

[97] Ockenden review of maternity services at Shrewsbury and Telford Hospital NHS Trust (Department of Health and Social Care, 2020, 2022)

[98] 2022-LMNS-Strategy-A4-v6-WEB.pdf (icb.nhs.uk)

development of maternity and neonatal services to deliver sustained improvements in safety, equity, quality and outcomes for women and families. The LMNS Executive Partnership have a strategic role in aligning developments taking place locally, including the Neonatal Critical Care Review and TNUH.

- **Nottingham and Nottinghamshire ICS clinical and community services strategy (CCSS):** recommends that obstetric and neonatal services in Nottingham are co-located on one site. This supports the development of a larger neonatal intensive care unit (NICU) in Nottingham in line with national recommendations. The ICS CCSS also recommends the integration of mental and physical health teams, with mental health triage in a children's emergency department and mental health nurses in ED. Families will be provided with a care navigator who will help them to access the right support at the right time in the right place. It is anticipated that development of community hubs with co-located specialists may be the preferred model for many services.[99]
- **Women's health strategy for England (2022)[100]:** sets out an ambition to improve health outcomes for women and girls, and the way in which the health and care system engages with them. The strategy adopts a life course approach, whilst identifying priority areas including menstrual health, pregnancy and fertility, menopause, mental health, cancers, healthy ageing, and the health impacts of violence against women and girls. There is a focus on improving access to services for all women and children, and achieving equity of outcomes, ensuring factors such as age, ethnicity, sexuality and disability do not impact on the access to services or treatments. Better information and education will be made available to women and girls and to health care professionals. There will be a focus on understanding the impacts of women's health issues in the workplace. There will be a drive to increase research into women's health conditions and to improve the representation of women of all demographics in research.
- **INVISIBLE maternity experiences of Muslim women from racialised minority communities (2022)[101]:** concluded that the provision of maternity services was variable and inequitable. Six themes were identified and 45 recommendations, categorised into four main calls of action for better data collection, addressing NHS process and workforce gaps, improving clinical, interpersonal and cultural staff competence and maternal empowerment.
- **ICS women's health clinical and community services strategy:** recommends increased access to emergency theatre lists and urgent diagnostics, increased pre-op, one stop shops and virtual appointments. The strategy also recommended that all inpatient elective and emergency women's services are delivered in the same place.

[99] https://mk0healthandcary1acq.kinstacdn.com/wp-content/uploads/2020/04/8398-Clinical_Strategy_V6-1.pdf

[100] Women's Health Strategy for England - GOV.UK (www.gov.uk)

[101] https://www.birthcompanions.org.uk/resources/invisible-maternity-experiences-of-muslim-women-from-racialised-minority-communities

- **Facing the Future: standards for children in emergency care settings[102]:** comprehensive standards of care for children in urgent and emergency care settings that support and motivate clinicians to provide high quality care.
- **Learning disability improvement standards:** the standards for improvement are centred around respecting and protecting rights, inclusion and engagement, workforce, and specialist learning disability services. [103] Where possible care will be delivered closer to home for children and their families.[104]

5.5.3 Current clinical model for family care

Services for women, children and families are delivered from our hospital sites and within the community. The following services for women, children and families are within the scope of our proposed clinical model:

- Consultant-led obstetrics and midwife led births
- Mental health support for children and families
- Paediatric surgery (incl. emergency surgery)
- Intensive care (neonatal and paediatric)
- Paediatric palliative care
- Paediatric oncology
- Postnatal inpatient care
- Elective and emergency gynaecology services
- Paediatric ED
- Paediatric assessment unit
- Paediatric intensive care unit
- Paediatric medical inpatients
- Child Development Centre

The Child Development Centre and the services delivered within there are within scope for this programme, and provision has been made for accommodation to be available within the proposed new hospital for women, children and families. This will be explored with patients and their families in the consultation. The services are currently provided by NUH and Nottinghamshire Healthcare Trust.

The following services are outside of scope of our proposals but are recognised as an integral part of the women's and children's care model:

- Contraception and sexual health services
- CAMHS (child and adolescent mental health services

Figure 56 shows the current configuration of services for women, children and families at NUH (see also Appendix 11). Community paediatrics and some community gynaecology are provided in other, non-acute settings.

[102] https://www.rcpch.ac.uk/resources/facing-future-standards-children-young-people-emergency-care-settings

[103] https://www.england.nhs.uk/wp-content/uploads/2020/08/v1.17_Improvement_Standards_added_note.pdf

[104] https://www.longtermplan.nhs.uk

QMC services	City Hospital services
Maternity and neonates Paediatrics including surgery Children's emergency department Fertility Children and young people's cancer unit Emergency gynaecology	Maternity and neonates Regional childhood development centre services Paediatric therapies Gynaecology and gynaecology surgery Sexual Health Genetics Fertility

Figure 56 Current configuration of women's and children's services

5.5.4 Vision for women's and children's services

Our vision for services for women, children and families is closely aligned with national guidelines. This vision, as described in Figure 57, commits us to providing holistic services that meet the full specification for clinical care so that we are able to improve clinical outcomes. (See also Appendix 11 and Appendix 12).

1. In the new, purpose build Family Care facility patients and their families would have access to co-located women and children's services in a bespoke setting with easy access to adjacent services to ensure safe and efficient care for women, children and young people. This model would be supported by an increased provision of holistic care delivered in the community and virtually (where appropriate)
2. Services will implement local and national strategic recommendations including the NHS Long Term Plan, the ICS CCSS for children and young people (CYP), maternity and neonates, and secure compliance with initiatives such as the 'saving babies lives care bundle'
3. Services will learn from other centres of excellence and research to deliver high quality care and excellent patient experience.
4. Services will be digitally enabled, delivering a joined-up care record and increased choice for patients of virtual care where appropriate. This will be supported by a sustainable workforce model and development of a fit-for- purpose environment. Family care services will strive to fully integrate mental and physical health care. Children and young people will be able to easily access a multidisciplinary team at NUH comprising of secondary care teams, CAMHs and social care.
5. Inpatient services for children and young people will provide age-specific and sensory environments with a particular focus on the needs of teenage patients. Thus making the hospital environment more welcoming and less daunting for our younger patients.

Figure 57 family care vision

5.5.5 Future family care pathway

The future pathway for services for women, children and families has been split into a pathway for:

- Maternity, obstetrics and neonatology
- paediatrics

It is recognised that elements of the pathways are interdependent of one another, as reflected by the future patient journey in Figure 58.

Maternity and paediatric future patient journey

- Mrs R is in her first pregnancy when she has ruptured membranes at 24 weeks gestation. She is given antenatal steroids but progresses in preterm labour.
- Mrs R has her baby at QMC hospital at 24 weeks gestation. Baby R is admitted to NICU.
- On day 5 baby R deteriorates and is found to have a bowel perforation. Baby R has a laparotomy within one hour and returns to NICU.
- Baby R is stable as a result of the rapid intervention she receives.
- Both Mrs R and baby R were able to receive all their care at QMC

Figure 58 Maternity and paediatric future patient journey

Key features include:

- a co-located women's and children's hospital with easy access to adjacent services, including adult emergency care, to ensure safe and efficient care for women, children and young people
- increased provision of holistic care delivered in the community and virtually[105]
- increased collaboration and integration with system partners to deliver a seamless transition between all care sectors, including the development of integrated patient records[106]
- fully integrated psychological services across all women's and children's services, including within the emergency care pathway[107]

5.5.5.1 Maternity, Obstetrics and neonates

The future maternity, obstetrics and neonates pathway shown in Figure 59 is based on a co-located women's and children's service that has increased capacity and easy access to

[105] Department of Health (2013) Our Children Deserve Better; National Maternity Review 'Better Births, Improving Outcomes of Maternity Services in England' (2016)

[106] Royal College of Obstetricians and Gynaecologists 'Providing Quality Care for Women' (2016); Saving Lives Care Bundle (2019); National Maternity Review 'Better Births, Improving Outcomes of Maternity Services in England' (2016);

[107] Royal College of Paediatrics and Child Health 'Facing the future: standards for children in emergency care settings' (2018); NHS Long Term Plan – commitment to provide timely, age-appropriate crisis services for those experiencing a mental health crisis

adjacent services to ensure high-quality, safe and efficient care for both mothers and babies. This pathway would reduce the need for out of area transfers.

There are several specific elements of the maternity and neonates' pathway within our proposed clinical model that aim to meet the latest clinical standards and evidence based best practice for maternity and neonate care. These includes:

- maternity and neonatal services will be co-located with interdependent services to ensure equitable access to high quality best practice care.
- neonatal care would be co-located with all maternity care and closely aligned with the paediatric pathway
- community care is fully integrated within the pathway

The pathway shows transition between services delivered from consolidated women's and children's hospital services and those delivered in the community. This is in line with Royal College of Obstetricians and Gynaecologists (RCOG) guidance which states that there should be a smooth transition between midwifery, obstetric and neonatal care and ongoing care in the community.[108]

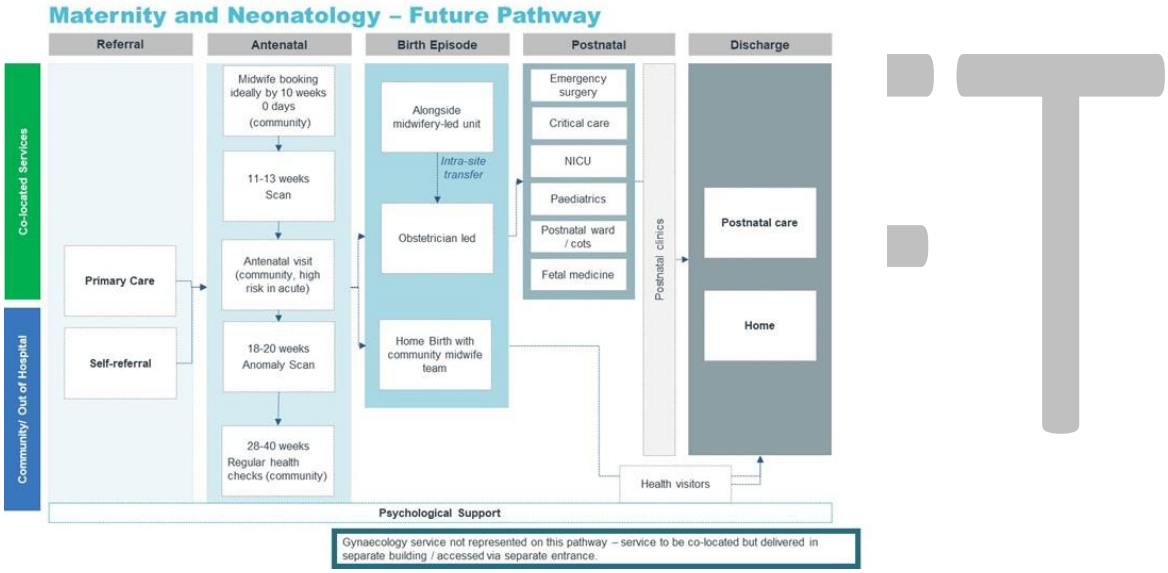


Figure 59 Maternity, obstetrics, and neonatology future pathway

The National Maternity Review[109] stressed the importance of expectant parents being able to make an informed choice about where they would prefer to give birth. We looked into the different configurations in detail and clinicians agreed that a full consolidation of maternity services was the preferred model. A consolidated single maternity service would offer both obstetric consultant led births alongside a co-located midwife led unit. Both units would be co-designed with patients and staff to ensure the environment meets all needs. The offer of consultant led, midwife led and the continued offering of a home birth would ensure that the choices described in the National Maternity Review are met.

[108] https://www.rcog.org.uk/globalassets/documents/guidelines/working-party-reports/maternitystandards.pdf

[109] National Maternity Review (NHS England)

Clinicians agreed that a freestanding midwife led unit (FMLU) would not be viable. Equally a survey of mothers found that only 6% would prefer to give birth in an FMLU. Failing to fully utilise the unit would have a financial implication, impact our already stretched workforce and ultimately result in poorer outcomes for patients. Whilst this model may be appropriate in more rural settings that are not well connected to a birthing unit, in the NUH context it is neither practical nor clinically safe and sustainable to physically separate a birthing unit from other key hospital disciplines which are normally on hand to support mother and babies if the birth process proves difficult. The proposed clinical model for maternity and neonatology has been developed in line with national guidance and the local Maternity Transformation Plan led by Nottingham and Nottinghamshire LMNS.

5.5.5.2 Neonatal care

There is an imminent need to reorganise our provision of neonatal care as currently there is insufficient capacity to meet national guidelines [110]. Consolidation and expansion of our neonatal services would:

- provide the appropriate number of neonatal care days per year to meet the standards for a level 2 neonatal unit (>2,000 care days)
- allow a separate medical rota for the level 2 neonatal unit, meeting BAPM guidelines for a unit of this size (the guidance states that the minimum nurse to baby ratio should be 1:1 for babies receiving intensive care, 1:2 for high dependency care and 1:4 for special care[111])
- support training and development opportunities aimed at improving quality of care, developing expertise within the workforce, and improving recruitment and retention
- prevent mothers and babies from needing to be transferred elsewhere
- provide all necessary services together on one site
- enable the continuation of transitional care on a single site, allowing families to remain together throughout the episode of care

The proposed clinical model of care is illustrated in Figure 60.

Neonatal future patient journey

- Mrs M is expecting twins and is booked to deliver at QMC. One of the babies has poor growth so Mrs M is under the care of the fetal medicine specialist at QMC for regular scans and assessment.
- At 28 weeks' gestation, Mrs M goes into spontaneous preterm labour requiring a c-section. Post- operatively Mrs M is very unwell.
- The twins are admitted to NICU at QMC on day of birth. Mrs M is able to visit her babies with Mr M. The medical team on NICU also visit Mrs M on her ward and update her regularly on the babies' progress. Mrs M commences expressing breast milk which the medical team are able to give to her babies.

[110] Optimal Arrangements for Neonatal Intensive Care Units in the UK including guidance on their Medical Staffing, British Association of Perinatal Medicine, 2014 https://www.nna.org.uk/assets/bapm_optimal-nicu-size-2014.pdf

[111] Supplementary guidance to BAPM Framework for Practice, NHSE

- Mr and Mrs M are able to play an active part in the care of their babies from day of birth which is known to be of benefit to preterm babies and their families.

Figure 60 Neonatal future patient journey

5.5.5.3 Paediatrics

The proposed future paediatric pathway is shown in Figure 61. We would offer more care in community settings and virtually, where appropriate, to improve access to services and minimise disruption to the lives of children and their families. Referrals would be triaged, to ensure children are offered the right care by the right person, at the right time in the right place. We would develop an integrated physical and mental health approach across the entire pathway[112], and ensure our facilities are designed to meet the needs all children, including those with specific needs.

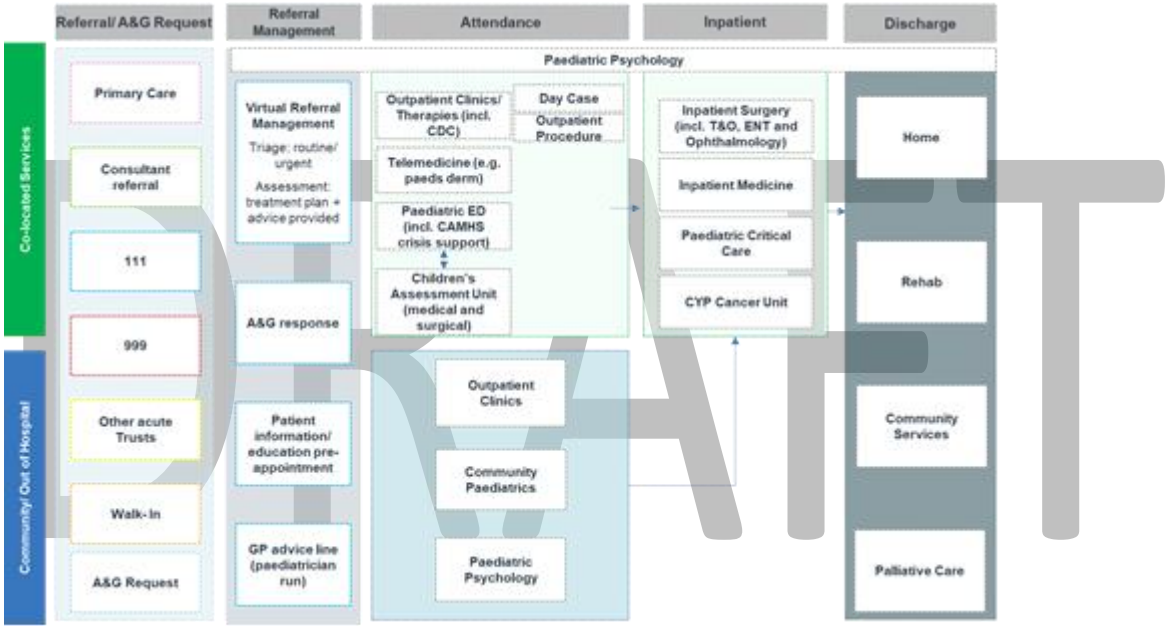


Figure 61 Paediatrics future pathway

5.5.6 Benefits

The proposed model addresses many of the issues described within the case for change. These benefits are summarised in Figure 62.

Category	Benefit	
Decreasing unwarranted variation in	• Women and babies have on-site access to the specialist input they need	

[112] https://www.rcpch.ac.uk/sites/default/files/2018-06/FTFEC%20Digital%20updated%20final.pdf

quality, safety and outcomes for women and babies	• Neonatal intensive care unit (NICU) is delivering >2,000 intensive care days per year
Improving patient experience	• Women and their babies can be looked after together without the need for transfer across sites or out of area • Women have access to high quality facilities that ensures privacy, dignity, and an improved care experience
Improved workforce resilience	• More efficient and resilient rotas • Stronger identify and increase in collaborative working and time to innovate and deliver cutting-edge care • Improved training and supervision for junior staff

Figure 62 Women's and children's benefits – maternity

5.5.7 Clinical design principle for women's and children's services

Clinical design principle: all women's and children's hospital services should be consolidated and co-located with adult emergency care.

The clinical design principle will ensure equitable access to interdependent services that are required to fully support patients and deliver high quality evidence-based care.

5.6 Cancer care

5.6.1 Introduction

NUH is currently a leading cancer centre specialising in diagnosis, treatment, research and education. They provide services to the local population of Nottingham, and are the main tertiary specialist referral centre for the East Midlands. They work closely with GPs and community services to join up the patient's cancer journey. Maggie's Centre at City Hospital provides a drop-in service offering practical, emotional and social support. Hayward House, a specialist palliative care unit at City Hospital, provides high quality care centred on the needs of patients and their families. NUH carries out ground-breaking clinical research into new cancer drug therapies and treatments. Working with partners in Cambridge and Leicester, NUH are also one of 11 national genomic medicine centres.

Our clinical model for cancer would provide holistic cancer care, working together as system partners across Nottingham and Nottinghamshire. There would be a strong focus on prevention and early diagnosis. The proposed clinical model aligns with best practice and national guidelines and has the potential to transform clinical outcomes and the patient experience.

5.6.2 Strategic context

Our future pathway for cancer care responds to local, regional and national learning and guidance:

- **NHS Long Term Plan (LTP):** the LTP sets the ambition that by 2028, the proportion of cancers diagnosed at stages 1 and 2 will rise from around 50% to 75%. This will be

achieved by raising awareness of the symptoms of cancer, lowering referral thresholds, maximising the numbers of cancers diagnosed through screening and accelerating access to diagnosis. There will be improved delivery of screening programmes with a focus on improving uptake, expanding capacity and modernising diagnostics. The NHS will also continue pioneering precision medicine such as CAR-T cancer therapies. Integrated care systems will cover the whole country by 2021 and will increasingly play a part in commissioning specialist services.[113]

- **NHS England rapid diagnostic centres (RDC) vision and 2019/20 implementation specification:** recommends implementation of RDCs to offer a single point of access to a diagnostic pathway for all patients with symptoms that could indicate cancer. The implementation of RDCs is being supported by the roll-out of pathology and imaging networks of clinical expertise to allow for rapid diagnosis of symptoms.
- **Nottingham and Nottinghamshire ICS clinical and community services strategy:** the ICS CCSS recommends that the diagnosis, treatment and post-treatment care of cancer shifts from the acute to community-based settings. The referral process will facilitate self-referral for patients with cancer symptoms. Cancer management should be delivered by a multi-disciplinary team approach to enable patients to access other services where appropriate, for example, mental health.[114]
- **Nottingham University Hospitals (NUH) Long Term Plan:** the NUH Long Term Plan proposes close working with system partners to increase assessment and outpatient capacity. NUH will, where appropriate, provide care in the patient's home or local community through the 'NUH@' outreach model. NUH will strive to develop centres of excellence in colorectal, hepatobiliary and pancreatic cancer (HPB), upper gastrointestinal (GI) and thoracic. The plan recommends that NUH is situated at the forefront of research and innovation, expanding the robotics service and achieving experimental cancer medicine centre status in 2021.[115]

5.6.3 Current clinical model for cancer care

Cancer services delivered to patients in their local community, including their home, would help minimise disruption to their lives and improve their experience. Providing services across a range of locations is a key part of a supportive, holistic model that considers physical, mental and social wellbeing of the patient and their family.

The following cancer services are within the scope of the proposed clinical model:

- Planned inpatient cancer care
- Pre-operative assessment
- Prehab and rehab
- Cancer emergency care
- Theatres, anaesthetics and critical care
- Psychological support
- Ambulatory cancer care (including Outpatient treatments)

[113] https://www.longtermplan.nhs.uk/

[114] https://mk0healthandcary1acq.kinstacdn.com/wp-content/uploads/2020/04/8398-Clinical_Strategy_V6-1.pdf

[115] https://www.nuh.nhs.uk/long-term-strategy/

- Radiotherapy and Chemotherapy
- Systemic Anti-Cancer Therapy (SACT)

The following services are outside of scope of the clinical model but are recognised as an integral part of the cancer care model:

- Palliative care
- Inpatient surgery (part of elective care, see section 5.4)

In the current configuration, shown in Figure 63, the majority of cancer services are delivered at City Hospital. An NUH@ outreach service is also delivered at King's Mill Hospital, Royal Derby Hospital, Lincoln County Hospital and Grantham and District Hospital. This model delivers specialist cancer care more locally for patients, working together with other members of the East and West Midlands Cancer Alliances.

QMC services	City Hospital services
Acute oncology (i.e. acute input into medical assessment) Head and neck, skin cancer, colorectal	Chemotherapy, immunotherapy, radiotherapy units Oncology and haematology Emergency cancer admissions through the specialist receiving unit

Figure 63 Current configuration of NUH based cancer services

5.6.4 Vision for cancer care

Our vision for cancer services is closely aligned with national guidance and is described in Figure 64 (see Appendix 12 and Appendix 13)

1. Cancer services will deliver exemplar clinical outcomes with a focus on early diagnosis, meeting the NHS delivery of national optimal timed pathways and empowering patients to live well with and beyond cancer.
2. Cancer services will be holistic, caring for patients' physical, mental and social wellbeing through their journey, with enhanced supportive and palliative care, to improve quality of care and patient experience.
3. Integrated working with system partners will increase accessibility of cancer care particularly for 'hard to reach' patient cohorts and allow a seamless transition between services. Pathways will incorporate new care models including provision of care closer to home, self-referral and virtual consultations.
4. We will continue to grow existing specialist services alongside developing centres of excellence for research, innovation and treatment. Cancer services will be co-located with other acute hospital services ensuring easy access to emergency specialist care.
5. We will develop centres of excellence for research and innovation.
6. We will support and empower our workforce to deliver Best in Class cancer care, providing extensive training and development opportunities.

Figure 64 Future vision for cancer care

5.6.5 Future cancer care pathway

The future pathway in Figure 65 emphasises prevention and screening. Our integrated approach underpins the proposed hospital model of care from referral through to discharge and onward care, ensuring that adequate support is in place throughout the patient's journey.

Key features include:

- a focus on early diagnosis and, meeting the NHS national cancer standards for time to diagnosis and treatment[116]
- holistic care, caring for patients' physical, mental and social wellbeing through their journey, with enhanced supportive and palliative care, to improve quality of care and patient experience[117].
- integrated working with system partners will increase accessibility of cancer care and screening particularly for 'hard to reach' patient cohorts and allow a seamless transition between services[118].
- pathways will incorporate new care models including provision of care closer to home, self-referral and virtual consultations[119].

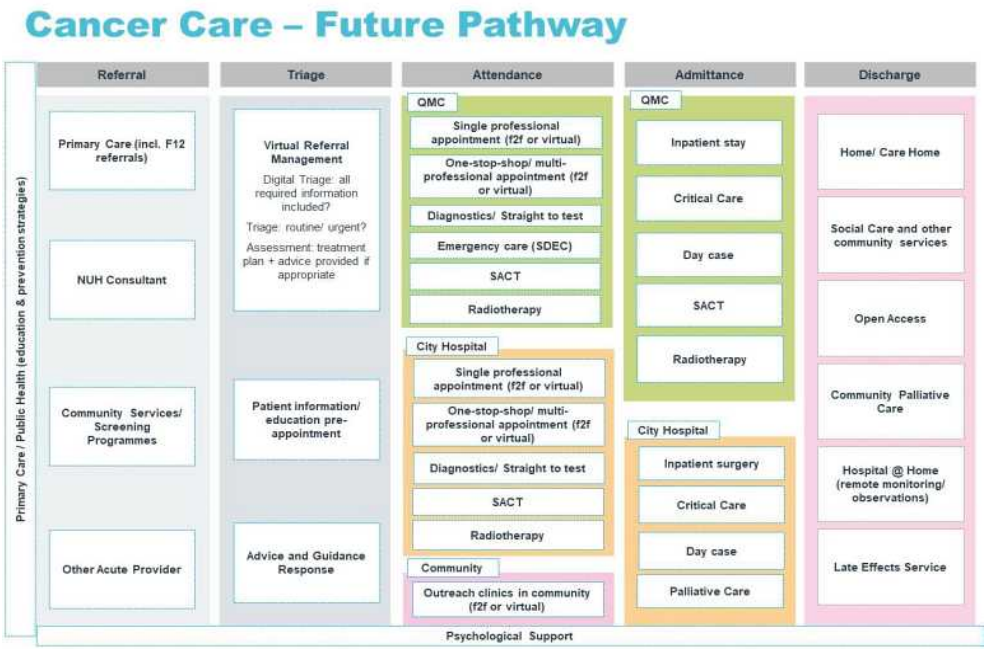


Figure 65 Future Cancer Pathway

[116] Diagnostics: Recovery and Renewal (2020); NHS Long Term plan - by 2028, the proportion of cancers diagnosed at stages 1 and 2 will rise from around 50% to 75% of cancer patients; BMA (2020) Cancer in women; NICE (2004) Guidance on Cancer Services; Cancer Alliance Priorities 2019/20;

[117] Macmillan and Edinburgh Napier University Evaluation of Glasgow: Improving the Cancer Journey; BMJ (2020) Cancer care during and after the pandemic; Department of Health (2011) A Strategy for Cancer;

[118] Macmillan and The King's Fund (2019) Evolution of the Cancer Pathway

[119] Guidance for Cancer Alliances (2016) Delivering World Class Cancer Outcomes; Cancer Alliance Priorities 2019/20;

Our proposed clinical model for cancer care particularly aligns with the priorities outlined within the Nottingham and Nottinghamshire clinical and community service strategy (CCSS) review into oncology in 2020. The review identified 4 key areas of focus, highlighting potential areas of change:

- **Pre-optimisation:** emphasise support and patient awareness to improve early detection, including improve screening programmes for stage 1 and 2 diagnosis. Prehabilitation and rehabilitation support needs to be provided before, during and after treatment for cancer across all pathways.
- **Treatment models:** including a shift towards immunotherapy and preventing presentation at ED for acute oncology issues.
- **Living with and beyond**: with a strong emphasis in providing access to psychological therapies in a timely manner and addressing health inequalities, providing equitable recognition for psychological support.
- **Whole system approach:** ensuring the organisation and delivery of services is consistent through a multi-agency approach that includes 3rd sector organisations and charities supported through local authorities.

Oncology and Haematology

- In future, most cancer patients would go to an elective site for diagnosis, surgery and outpatient treatments, including chemotherapy and radiotherapy. This aligns to the NHSE rapid diagnostic centres vision and specification that recommends a single point of access to a diagnostic pathway for all patients.
- Cancer inpatient beds would be based alongside emergency care. This would include oncology and haematology and ensuring radiotherapy and chemotherapy services would be available to support patients during their inpatient stay. Outpatient care at the cancer centre at QMC could be delivered locally with acute medical support available while services are running.
- Non-surgical cancer inpatients are some of the most unwell patients that we care for. Oncology and haematology inpatient services would be located alongside emergency care services to ensure quick access to the emergency specialists and co-located medical services.
- The location of services for cancer activity for option 13a is shown in Figure 66 and in Figure 67. This multi-site approach to delivering cancer services means we would have the best of both worlds – it is more important for us to focus on delivering really fast access to the very latest treatments, rather than necessarily bringing everything together in one place.

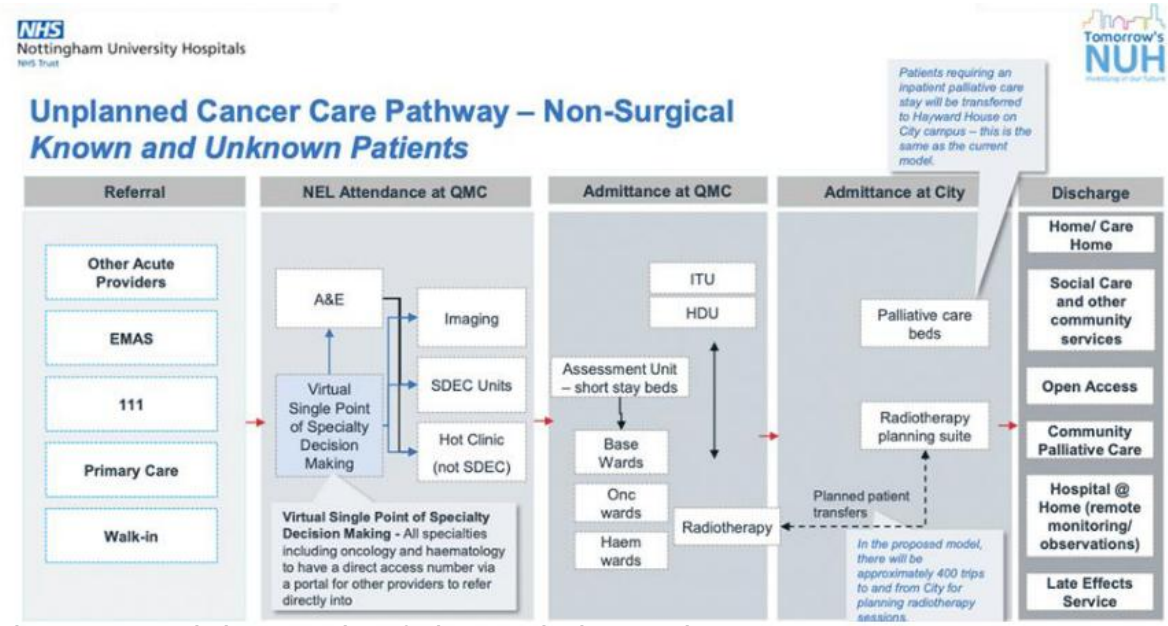


Figure 66 non-surgical cancer pathway for known and unknown patients

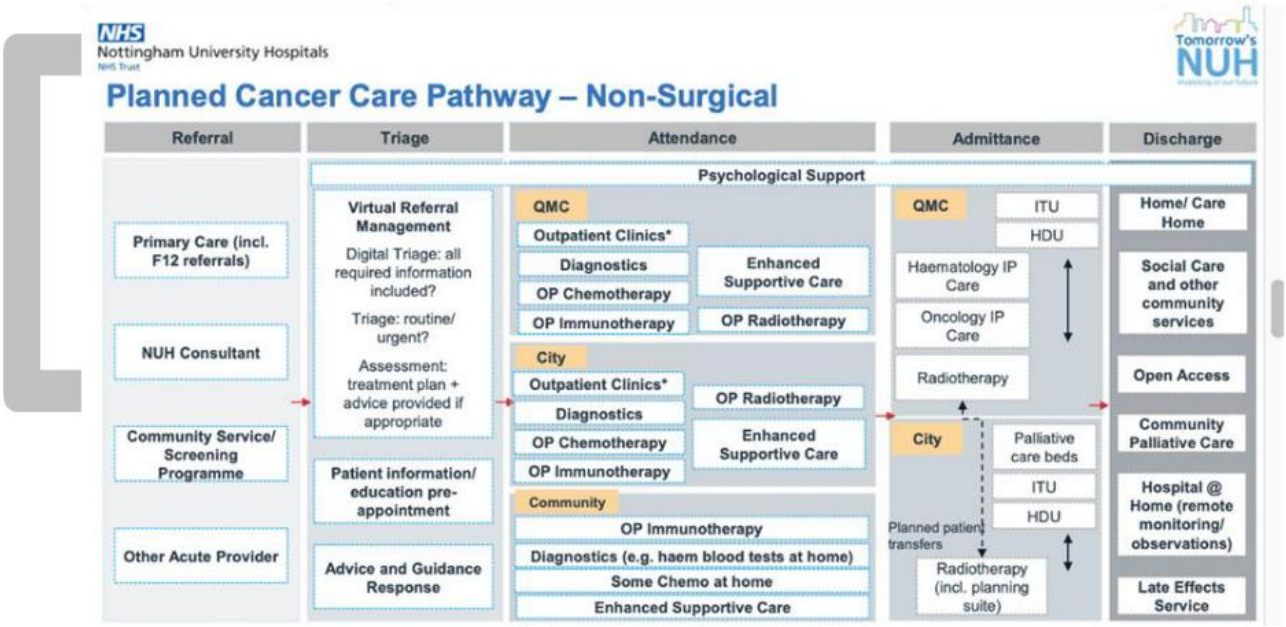


Figure 67 non-surgical cancer pathway for planned cancer care

- This enhanced journey would improve our current service by reducing transfers and delays to treatments, while also providing a more joined up service and improved patient experience.
- Proposed non-surgical cancer patient journey:
    - Mrs A is admitted to the emergency site under the spinal surgical team presenting with worsening back pain and leg weakness via ED
    - The spinal surgeons need help from haematology to confirm a diagnosis of new myeloma. This is provided by the on-call haematology team based at the emergency site.
    - As the patient has a new malignant cord compression, the on-call clinical oncologist and the spinal surgical team are able to co-asses the patient in

person and liaise directly with haematology to confirm likely prognosis and the overall treatment plan, with the benefit of a face to face clinical review.

- A treatment plan is agreed that takes into account a range of factors including the pain level Mrs A is experiencing and other potential barriers to treatment that need to be addressed effectively. The patient does not need to be transferred off her admitting ward just for clinical assessment, as all teams are on site.
- Mrs A is able to go for her radiotherapy planning session, direct from the admissions ward, already assessed, her pain addressed and she is already consented.
- She is able to go on to have her urgent radiotherapy treatment whilst a bed on a haematology inpatient ward is being created.
- Throughout the remainder of her stay – Mrs A receives regular input from both the haematology and the clinical oncology teams, as well as other acute medical specialties as needed, ensuring Mrs A has access to all the specialist care she requires at a senior and in person level

5.6.6 Benefits

The proposed model addresses many of the issues described within the case for change. These benefits are summarised in Figure 68.

Figure 68 Cancer care benefits

Category	Benefit
Improved clinical outcomes	• Quicker diagnosis and access to specialist care • Pathway standardisation across in-hospital and out of hospital care • Focus on supporting people to live well and providing psychological support across the pathway • Embedded clinical research
Improving patient experience	• Patients diagnosed and treated in fit for purpose settings, closer to home where appropriate
Improved staff satisfaction	• Training and development opportunities created through collaborative working • Attracting world class workforce

5.6.7 Clinical design principle for cancer care

Clinical design principles: cancer care hospital services should have access to critical care and all associated medical specialties. Elective and ambulatory cancer care will follow principles respective elective and ambulatory clinical design principles

The clinical design principle responds to the needs of local, regional and national specialist cancer services. NUH cancer care requires access to critical care to support complex cancer surgery, and access to all associated medical specialties e.g. cardiology, respiratory, renal, gastroenterology and infectious diseases.

5.7 Ambulatory care

5.7.1 Introduction

We have the opportunity to redesign the ambulatory model of care to deliver services closer to home in the community or in people's homes through virtual care, where appropriate. Our proposed future model for ambulatory care focuses on consolidating services and streamlining pathways, providing the right care in the right place at the right time, in a safe setting that limits patient's exposure to infection. Providing care closer to home in convenient locations will also mean less travel time and cost for patients.

The way in which outpatient appointments are delivered has changed rapidly during the COVID-19 pandemic. In NUH, around 23%[120] of all hospital outpatient appointments are now held virtually, compared to only around 6% [121]before the pandemic. It is also increasingly the case that outpatients are delivered as a one-stop to improve patient experience and make best use of resources

5.7.2 Strategic context

Our pathway for ambulatory care responds to local, regional and national learning and guidance, which underline the need for greater standardisation, transformation and an increase in the use of digital technologies:

- **NHS Long Term Plan:** sets the ambition to re-design outpatient services so that up to a third of outpatient appointments will be avoided, saving patients time and inconvenience, and freeing up significant medical and nursing time. This will help to improve access to specialist care for the patients who require it most, reduce waiting times and improve clinical outcomes.
- **Royal College of Physicians, 'Outpatients: the future: adding value through sustainability':** recommends specialist organisations and charities should work collaboratively to oversee the development of signposting to resources that support outpatient consultations. Services should optimise the staff skill mix rather than always relying on consultant-led care. The ultimate objective should be reducing the number of steps in a patient's pathway to optimise the experience for patients and providers.[122]
- **Nottingham and Nottinghamshire ICS clinical and community service strategy (CCSS):** a key principle underpinning the ICS CCSS for planned care services is improved equity of service delivery and outcomes through standardisation and reduction in variation. There has already been significant progress in this area including the development of referral guidelines for many specialities and the

[120] Outpatient Demand and Capacity Dashboard, non F2f October 2022

[121] Outpatient Demand and Capacity Dashboard, non F2F February 2020

[122] https://www.rcplondon.ac.uk/projects/outputs/outpatients-future-adding-value-through-sustainability

redesign of some clinical pathways. In the future, a greater proportion of planned care will take place in a community setting. This will include face to face first and follow up outpatient appointments and also virtual appointments utilising digital technologies. Perioperative care will increasingly take place in out of hospital settings.

5.7.3 Current clinical model for ambulatory care

Our clinical model comprises the full range of ambulatory activity that is delivered from our hospital and community sites, either face to face or virtually.

The following ambulatory services are within the scope of the proposed clinical model:

- All outpatient management, including:
    - First and follow-up outpatient appointments
    - Procedures and treatment carried out in an outpatient setting

Outpatient care is currently delivered from QMC, City Hospital, Ropewalk House, in community settings and virtually.

5.7.4 Vision for ambulatory care

Our vision for ambulatory care, as described in Figure 69, is to provide equitable, high quality care in convenient locations and improved clinical outcomes and experience. The model aligns with local and national guidance (see Appendix 14 for further details).

1. Ambulatory services will be designed with **patients at the heart**. High quality care will be provided at a time and place that is convenient for the patient, **minimising disruption to their lives.** Pathway redesign will improve **flexibility and convenience** of our services by increasing access, where appropriate, of one-stop-shops, see-and-treat-clinics, virtual and remote care, open access and patient-initiated-follow ups.
2. Services will **embrace new technology** and **innovative workforce models** placing NUH at the forefront of implementing an ambulatory care model that is fit for the future.
3. Our services will be delivered through **integrated working with partners,** enabled by **integrated technology** across the health and care system, to ensure care is holistic and transition between services is seamless.
4. Ambulatory services will focus on delivering exemplar clinical outcomes, increasing proactive and preventative care to enable patients to live well for longer. Particular attention will be paid to designing services which work for and engage with 'hard to reach' groups, to **improve clinical outcomes** for population cohorts where the need is greatest.
5. Ambulatory services will be provided in a safe location for patients which **minimises the risk of healthcare-acquired infection (HCAI).**

Figure 69 Ambulatory care vision

5.7.5 Future ambulatory care pathway

Outpatient care would be delivered through a hub and spoke model, providing services both at NUH and in the community (as shown in Figure 70). This would be supported by a highly trained workforce which would embrace technological applications including tele-health. Ambulatory services would increase quality of, and access to, care by:

- pathway redesign to improve flexibility and convenience of our services by increasing the availability of one-stop-shops, see-and-treat-clinics, virtual and remote care, open access and patient-initiated follow-up appointments[123].
- integrated working with system partners, enabled by integrated technology across the health and care system, to ensure care is holistic and transition between services is seamless.
- designing of services to facilitate engagement with vulnerable patient groups, to improve clinical outcomes for population cohorts where the need is greatest[124].

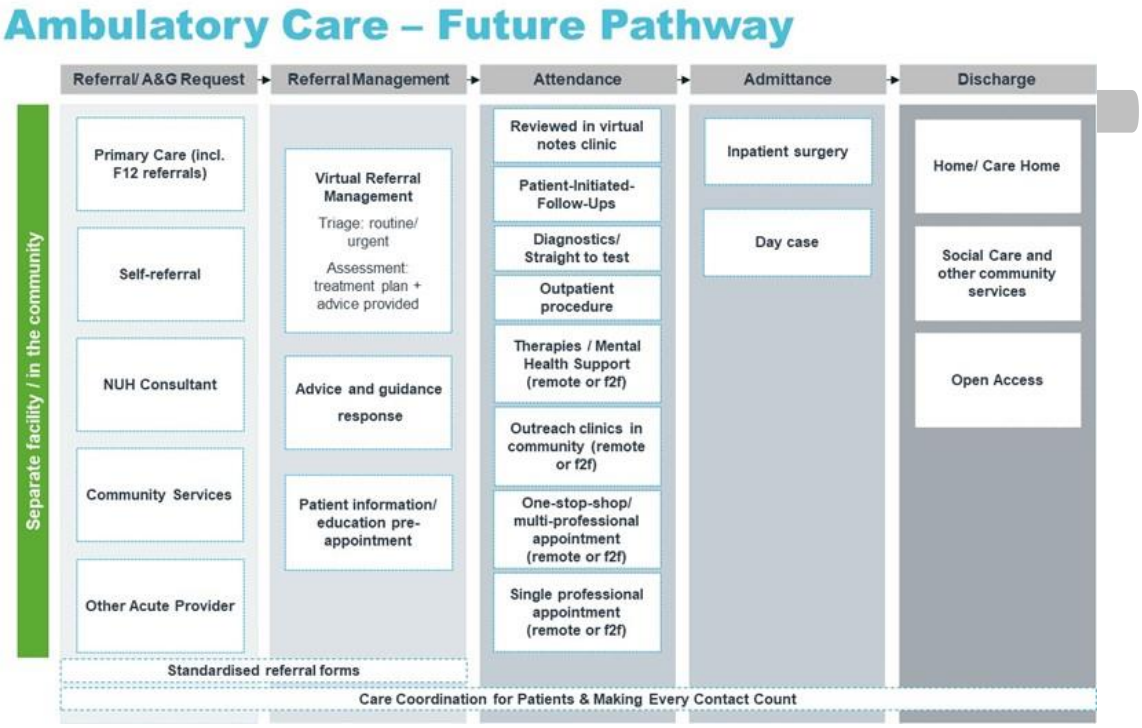


Figure 70 Ambulatory care future pathway

Clinicians studied successful ambulatory care models from other regions, examples of which can be seen in Figure 71. Whilst our current ambulatory clinical model of care does not yet go into the same level of detail, these are useful examples of what future pathways may look like.

[123] Royal College of Physicians (2018) Outpatients: the future; BMJ (2018) Virtual Outpatient Clinic; NHS Long Term Plan; The Shelford Group (2019) Transforming care through technology; Diagnostics: Recovery and Renewal (2020)

[124] NHS Long Term Plan, NHS England and Improvement, 2019

Figure 71 Potential ambulatory care models

5.7.6 Benefits

The proposed clinical model addresses many of the issues described within the case for change, as summarised in Figure 72

Category	Benefit	
Integrated, proactive, preventative care	• Improve patient ability to self- manage conditions • Greater access to care and advice when required • Collaborative working to help identify vulnerable cohorts and use preventative measures • A holistic approach to care embedding a "make every contact count" approach to consultations • Learn from system and internal best practice pathways	
Local and accessible care	• Service designed around improving patient outcomes • Improved engagement with 'hard- to-reach' groups will lead to earlier diagnosis and better management of patient illness • More flexible care • Minimising steps in the patient journey (e.g. one-stop-shops) • Reduction in do not attend (DNA) rates	
Digital integration	• Integration of the digital systems across system partners to improve patient safety • Utilise new technologies, including digital review of diagnostics	

Figure 72 Ambulatory care benefits

5.7.7 Clinical design principle for ambulatory care

Clinical design principle: ambulatory care pathways (outpatients and day cases) should be redesigned to minimise disruption to patient's lives, providing care in accessible locations whilst maximising the potential of new and emerging technologies.

The clinical design principle responds to the growing demand on outpatient activity created by the burden of disease within our local population. Fully integrated working with system partners will enable the redesign of patient pathways, focussing on providing the right care at the right time in the right location for all.

5.8 Impact of the clinical model of care on hospital bed requirements

Implementing our clinical model of care will have an impact on the number of people who require hospital care in an acute setting and the type of care they receive there. The programme has undertaken an extensive programme of work to consider the likely future demand for hospital services and the capacity required to meet that demand.

5.8.1 Approach to activity modelling

An Activity Demand and Capacity workstream has steered modelling to inform future capacity requirements informed by demand projections and the impact of the proposed clinical model. The model has provided projections of activity levels to inform the spatial briefing and financial modelling to support the options development process.

The workstream's responsibilities include delivery of the following work packages and related actions:

- Production and maintenance of an overarching demand and capacity model;
- The development and agreement of the high-level planning assumptions including consultation with key stakeholders;
- Overseeing the provision of data within information governance requirements;
- To ensure activity modelling is informed by and take account of Integrated Care System (ICS) and wider strategies and developments;
- To inform and be informed by the evolving clinical models;
- To ensure alignment with shorter term planning processes especially annual planning.
- Ensuring the Finance, Estates and Activity Group (FEAAG) and Programme Board are regularly updated of progress.

The membership of the group includes representatives from NUH, the ICB and an external Healthcare Planner from Cliniplan with expertise in business intelligence, strategy & planning and commissioning.

High level planning assumptions were developed with internal and external stakeholders. Engagement was ensured throughout the activity modelling process through a series of discussions with Trust Clinical Divisions, including Emergency Department, Critical care and Theatres, the Trust Service Transformation Team and the Trust Organisational Leadership Team (OLT). Ad-hoc sessions have taken place with other colleagues as advised by divisions. Outputs from the model have been reviewed by the CCG Finance and Resources Committee, System Capacity Cell, the East Midlands Clinical Senate and FEAAG. System partners and other commissioners of services from the Trust have been made aware of the likely implications for their organisations.

Group	Membership	Purpose	Date
Operational Leadership Group	NUH	Assumptions overview testing	11th Sept 2020
TNUH programme board	NUH, CCG, partners	Approach sign off	20th September 2020
Finance, Estates and Activity Group (FEAAG)	NUH/CCGs	Assumptions approach sign off	30th Sept 2020
Finance, Estates and Activity Group (FEAAG)	NUH/CCGs	Sensitivity testing on Emergency Activity Growth	10th March 2021
Finance and Resources Committee	CCGs	Assumptions overview testing	28th May 2021
Finance, Estates and Activity Group (FEAAG)	NUH/CCGs	Assumptions overview update	2nd June 2021
Tomorrow's NUH - Emergency Workstream meeting	NUH	Seasonality and variation assumptions	29th June 2021

Finance, Estates and Activity Group (FEAAG)	NUH/CCGs	Critical Care assumptions	30th July 2021
East Midlands Clinical Senate	NUH/CCGs/Senate	Assumptions overview testing	2nd December 2020 22nd July 2022
ICS capacity cell	ICS	Assumptions overview testing	June 2021
Beds task and finish group	ICS	Review and further development of assumptions	25th November 2022
TNUH programme and partnership board	NUH, ICB, partners	Revised demand and capacity model sign off	14th December 2022

Figure 73 Key Dates/Groups for Assumptions review

In developing the future capacity requirements for acute hospital services in Nottingham the following factors have been taken into consideration:

- Forecasted demographic change
- NHS policy direction
- Best practice in terms of service delivery and associated metrics
- Historic activity levels
- New clinical models
- Transformational programmes
- Need for flexibility

The full demand and capacity model is described in detail in Appendix 16

5.8.2 Demand and capacity model objective

Demand for services at the Trust has been growing which has added pressure for the need for inpatient beds. Figure 74 shows the increase in inpatient activity from 2015/16 to 2019/20. Despite the increase in demand the Trust bed stock has remained relatively flat and the Trust has a current total bed stock of 1,927 beds, which includes beds from all areas across both the City and QMC sites. The NHS as a whole has seen rises in demand for beds which includes patients requiring one after elective procedures and those requiring a bed after an emergency admission.

	15/16	16/17	17/18	18/19	19/20
Emergency Inpatient Admissions	95,490	97,569	102,850	107,183	111,069
Elective Inpatient Admissions (Including day cases)	103,501	105,901	104,688	107,952	123,369

Figure 74 showing historical demand on beds

In order to meet the future needs of the Nottinghamshire population and patients seeking healthcare at the Trust, a full and robust review of forecasted demand and required capacity was undertaken.

Activity forecasting work has been undertaken in order to understand the demand for services from the Trust over the next 20 years and the capacity required in order to meet this demand on the acute site(s). Whilst a 20 year view has been produced, the plans have been developed based on the Y10 projection as a reasonable longer term planning point. The Trust along with Nottingham and Nottinghamshire ICS partners completed this activity forecast modelling to inform future demand and capacity with consideration to the impact of the proposed future clinical model. The clinical model is intended to shift activity from reactive to proactive standardised patient pathways where appropriate and has been reflected in the modelling assumptions. This could include changes of pathways to treat patients in different settings e.g. day case moves to being outpatient procedures or more use of same day emergency care wards. Benchmarking (for example using Model Hospital) has been used to ensure we are correctly standardising for this.

The activity modelling has been supported by an external Healthcare Planner and developed within a recognised activity modelling software tool.

5.8.3 Baseline Line Data

A data specification was developed and agreed to enable recent activity data to be used in the demand & capacity model. The specification was tailored to offer maximum visibility of activity whilst ensuring no patient-identifiable information was disclosed, as per the Trust's information governance policies.

In determining future demand and capacity requirements 2019 has been used as a base year to avoid including any impact of the COVID-19 pandemic, although elements of the response to the pandemic which the system are looking to retain (such as use of digital technologies) have been included in the clinical models. A full year's worth of detailed data was provided for admitted patient care, out-patients, Emergency Department and surgical activity. Five-year aggregated data was also provided to enable trend analysis.

5.8.4 Developing the model

The demand & capacity model uses proprietary database software to enable the layering of multiple sets of assumptions and scenarios onto the underlying data. Following loading, the model was calibrated against current bed and theatre numbers to ensure it accurately predicted year 0 (i.e. "current" 2019) capacity provision.
Key data and information sources for the model are shown in Figure 75 below:

Domain	Source	Comments
Growth	NUH Medium-Term Planning (2019)	Years 0-5: demographic spells growth no non-demographic allowance for spells growth to reflect pandemic situation Years 6-20: demographic spells growth plus POD-specific non-demographic allowance for spells growth as per trend
	EY for NUH Long-Term Plan (current)	
	Other operational planning	
	Primary & Community Care Providers, CCG	
	Specialised commissioning plans	Top-ups for transplant, thoracic surgery, clinical haematology, neurosurgery, cardiology & cancer, as per analysis and user review
	TNUH Sensitivity Analysis February 2021	Tested ICS growth profiles for ED & NELIP admissions against recent historical trend; the latter rates were adopted
ICS Clinical Strategies	ICS website	Stroke, CYP, Frailty, Maternity & Neonatal, Respiratory reviewed
NUH Services	Divisional Triumvirates - divisional planning activity	Key service developments factored in
	ED, Critical Care, Theatres - departmental planning activity	Meetings held with divisional leadership teams
	ED - UTC Data	Included in ED dataset
	TNUH Model of Care User Groups	Outputs included

Figure 75: data and information sources for activity modelling

Key model characteristics are shown below:

Item	Comments
Objective	To model projected NUH activity to be undertaken on the acute site(s), and the capacity required to deliver it, in support of the Trust's Programme Business Case
Exclusions	Excludes activity undertaken by NUH off-site
Planning Horizon	20 years, with breaks at years 5, 10, and 15
Demand	Models projected in-patient, out-patient, theatre and out-patient volumes, across key types of activity (PODs). The number of diagnostic rooms was then linked to the Inpatient, Outpatient & Emergency Department activity modelling. Community Diagnostic Hubs (CDH) capacity is not included within this model.
Capacity	Models project capacity across key types of activity (Elective in-patients, Emergency in-patients, critical

	care, assessment, ambulatory emergency care, Emergency Department, Outpatient Department, day case & in-patient theatres)
Variables & Assumptions	Detailed on subsequent pages, including demographic & non-demographic growth assumptions, operational parameters, productivity & efficiency measures

Figure 76 Key activity model characteristics

5.8.5 Bed Occupancy

NICE published guidance on bed occupancy in 2018. The guidance noted that overall, the evidence suggested that, in general, any increase in occupancy leads to an increased risk of adverse patient outcomes including mortality (in-hospital, 7-day and 30 day), avoidable adverse events reported as hospital-acquired infections (Clostridium difficile infection), length of stay, 30 day readmission and delays in admission for patients waiting in ED. NICE recommended that organisations plan capacity to minimise the risks associated with occupancy rates exceeding 90%.

Occupancy has been set to be appropriate to the clinical setting and no more than the maximum 90% as recommended by NICE. For example running inpatient assessment areas at a much lower occupancy will ensure patient flow through NUH is not compromised and unacceptable pressure put on areas such as the Emergency Department. Learning from the recent pandemic has shown that to maintain the highest level of infection control, the high levels of bed occupancy that have been seen in recent years are no longer tenable.

Figure 77 below summarises the occupancy across the different types of inpatient areas:

		Bed occupancy rate	**Rationale or guidance**
Adults	Assessment beds	60-70%	Emergency Care Improvement Support Team (ECIST) guidance: 85% at 85th percentile
	Elective inpatients	90%	Based on Healthcare Planner experience. Not including decant and escalation beds (would be lower if included)
	Emergency inpatients	90%	Based on Healthcare Planner experience. Not including decant

			and escalation beds (would be lower if included)
	Critical Care	80%	Intensive Care Society guidance: 70%; reported national average: c83%
	Obstetrics	70%	Includes delivery suites
	Step-down beds	95%	
Children	Assessment	50%	
	In patients	65%	
	Critical Care	75%	Intensive Care Society guidance: 70%; reported national average: c83%
NUH	Overall	85%	In line with NICE guidance – plan not to exceed 90% occupancy

Figure 77 Inpatient occupancy

5.8.6 Emergency Bed Requirements

In modelling the bed requirements for the programme, the following assumptions have been used in addition to the occupancy rates explained above:

- Same Day Emergency Care (SDEC) will be available 7 days a week and will deliver 30% of the total emergency demand
- The average growth in emergency admissions with a length of stay over 1 day over the 3 years of 2017 to 2019 was 1.5% per annum. This has been used as the growth assumption for years 1-5 of the programme, with growth after that period reflecting demographic change only at 1% increase each year
- An early assumption reduction of 20% of occupied bed days for years 1-5 was applied in line with ICS 5 year planning assumptions however after review this has been removed and replaced with bed reduction initiatives including admission avoidance with 5%target, Medically Safe for Transfer (MSFT) reductions (76 beds), Virtual Ward (30 beds) and other NUH efficiencies (maintain trend bed reduction).

- Assumptions have been applied as to length of stay in assessment units (medical assessment – 30 hours, surgical assessment – 12 hours and paediatric assessment 8 hours)

Figure 78 below shows the impact of these assumptions on bed requirements for emergency care (bed numbers do not include decant beds which can also be used for seasonal pressures as well as planned preventative maintenance during lower pressure months).

	Assessment Beds Adult	*Assessment Beds Childrens*	*Emergency Inpatient Beds Adults*	*Emergency Inpatient Beds Childrens*	*Emergency Escalation Beds*	*Decant Beds (Emergency)*	*Total*
Year 0	165	11	869	68	45	27	1,186
Year 5	168	31	827	67	46	75	1,215
Year 10	195	30	916	66	50	75	1,331
Year 15	222	30	1,021	65	55	75	1,469
Year 20	244	31	1,090	67	59	75	1,565

Figure 78 Impact of assumptions on bed requirements

5.8.7 Elective Bed Requirements

In modelling the elective bed requirements for the programme, the following assumptions have been used in addition to the occupancy rates explained above:

- A 6% shift to day case of elective episodes with low length of stay (1-2 days); this shift has been informed by Model Hospital data showing the Trust are currently at 86% compared to upper quartile performance of 92%.
- Assumes 100% of zero-day length of stay elective inpatient activity to be day case by year 5, a further 6% of 1-2 day length of stay elective inpatient activity to be day case by year 5 as stated above and a 5% shift of day case activity to outpatient procedures by year 5.
- In 2019/20 there were low levels of elective activity undertaken which was below the commissioned levels – the modelling assumes this is rectified with elective inpatients growth rates of 2.5% in years 1-5, and 3.4% growth in day cases; latter years of the modelling assume 0.5% elective growth each year.
- In addition to the activity modelling described above, the capacity plan includes 100 decant beds which can also be used for seasonal pressures as well as planned

preventative maintenance during lower pressure months. Currently the Trust do not have such beds.

- A further 3% uplift in bed capacity (18% for paediatrics) has been applied on open beds to provide additional flexibility for escalation.

Figure 79 below shows the impact of these assumptions on bed requirements for elective care:

	Elective Beds Adult	*Elective Beds Childrens*	*Elective Escalation Beds*	*Decant Beds Elective*	*Total*
Year 0	185	28	13	0	226
Year 5	208	28	14	25	275
Year 10	232	27	14	25	298
Year 15	249	27	15	25	316
Year 20	256	28	15	25	324

Figure 79 Impact of assumptions on elective bed requirements

Our model projects an additional 72 elective in-patient beds by year 10, representing an overall increase of +32% over 10 years (+2.8% pa compounded), or equivalent to an additional 24-bed ward approximately every 3 years. This growth in beds has been calculated to surpass elective recovery targets. The modelled year 5 position (i.e., 2019 + 5 = 2024) has outturn growth of +11.7% DC activity, and +9.6% EL activity. The target in our Elective Recovery guidance for Notts ICS is +5% (i.e. 105% of baseline). Future ICB targets on ERF haven't yet been specified however the operational guidance and payment mechanism clearly sets out the intent for ICSs to minimise non-elective activity as much as possible, to allow for capacity to be increased and incentivised for elective care. Again this modelling is based on what is known about elective recovery so far, the drive to recover efficiencies and return to 18 week waiting times.

5.8.8 Emergency Department

In modelling the Emergency Department requirements for the programme, the following assumptions have been used:

- Activity has included adult majors, adult minors, paediatrics plus eye casualty.
- Growth planned at 1.7 % for years 1-5 based on average historical growth over last 5 years and assuming demographic growth only for years 6-20.

- Capacity has been built in to reflect 95th percentile hourly arrivals pattern and average treatment time.

5.8.9 Maternity

In modelling the maternity bed requirements for the programme, the following assumptions have been used in addition to the occupancy rates explained above:

- Minimal growth based on Office for National Statistics (ONS) projections.
- ICS planned shift from consultant-led to midwife-led births factored in by year 5 (target is to have 25% midwife-led births across ICS and 4% homebirths). As NUH was currently at 13% we have moved 50% of 0-2 day length of stay obstetrician led inpatient admissions with normal births (i.e. none requiring assisted interventions or caesareans) to being midwife led inpatient admissions within the modelling assumptions.
- Impact assessment of distance/catchment from hospital sites causing a potential shift of 630 births from NUH to Sherwood Forest Hospital.

5.8.10 Neonatal

In modelling the neonatal requirements for the programme, the following assumptions have been used in addition to the occupancy rates explained above:

- Modelling based on historical activity.
- A net increase of 6 cots as being planned in 2024 through the Maternity and Neonatal Redesign (MNR) business case (outside of TNUH) to allow babies currently transferred out of area due to capacity constraints to be cared for in Nottingham.

5.8.11 Outpatients

In modelling the outpatient activity for the programme, the following assumptions have been used:

- The model grows OP activity (like all other PODs in Y0-5) with demographic and non-demographic rates, leading to a growth in clinic rooms required. However these are not part of the TNUH capital project
- It is assumed that a minimum of 5% of current outpatient activity will be delivered in community setting
- 50% of outpatient activity (excluding outpatients which include a procedure) will be non face to face

5.8.12 Critical Care

In modelling critical care bed requirements for the programme, the following assumptions have been used in addition to the occupancy rates explained above:

- Critical care capacity has been modelled using current proportions of critical care usage by specialty and type of activity
- Includes additional 20% bed days for elective activity to avoid cancellations of elective surgery (equivalent to 6 beds)
- Not subject (i.e. capacity ring-fenced) to any reduction in length of stay applied to non-critical care portions of the spell (i.e., proportion of critical care beds within the scheme grows over time)
- Subject to top-up growth for regional specialties where this can be evidenced (cardiology, cancer, neurosurgery, thoracic surgery, clinical haematology and transplant)
- Modelled on level 1+ bed day data by specialty & type of activity (POD) i.e. level of critical care required, so covers more than just level higher care 2/3 areas. This is needed for the space that level 1+ beds require but also provides a degree of space capacity if required.
- In general critical care capacity has been carefully protected and enhanced to ensure adequate provisions in built in.
- In July 2021 A Health Needs Assessment for the East Midlands was undertaken by NHSE. This was reviewed to check assumptions weren't out of line with any findings within it. Decision was made to ensure linkage with any system work resulting from the recommendations in this report so if assumptions are required to change this will then feed into the demand and capacity modelling already undertaken.

Figure 80 below shows the impact of these assumptions on bed requirements for critical care:

	Adult Elective	*Adult Emergency*	*Neonatal Unit*	*Child Critical Care*	*Total*
Year 0	*21*	*104*	*43*	*22*	*190*
Year 5	*26*	*112*	*62*	*25*	*225*
Year 10	*29*	*127*	*61*	*24*	*241*
Year 15	*32*	*145*	*60*	*24*	*260*
Year 20	*33*	*159*	*61*	*24*	*278*

Figure 80 Impact of assumptions on critical care beds

5.8.13 Theatres

- *Theatre capacity has been modelled applying current conversion rates for surgery to the modelled activity numbers*

- *Caseload based on a specialty & POD-specific conversion rate based on actual theatre activity data applied to 2019 admissions*
- *Sessions/utilisation assumptions have been modelled in as below:*

Figure 81: Utilisation assumptions theatres

	Elective	**Emergency**
Session length	210 minutes (3.5 hours)	360 minutes (6.0 hours)
Sessions/week	12	14
Weeks per annum	48	52
Utilisation	81.6% (96% sessional utilisation x 85% in-session utilisation)	40% (to allow for unscheduled and out-of-hours) usage)

5.8.14 Diagnostics

Assumptions around diagnostics were:

- The number of rooms required is driven by the Inpatient, Outpatient & Emergency Department activity modelling.
- Forecasting on imaging data not in scope due to the above approach
- Any capacity created via the community/rapid access hubs has been considered to be additional (i.e. no shift out of the Trust) to meet growing demand

The 2020 Richards report sets out a future model for diagnostic capacity to meet the current and future needs of our populations. The model seeks to provide increased capacity in the community for elective diagnostic tests to make them more accessible for patients and to meet future demand.

To take into account the direction of travel for diagnostic provision the TNUH programme, in anticipation of the future investment in community based diagnostics, is forecasting a

growth in acute diagnostics in line with population growth and not in line with the historical demand increasing seen in the acute sector which is much larger. A summary of the TNUH diagnosting growth rates is opposite in table 3.

Modality	Tomorrow's NUH Planning			
	TNUH Y00 (Exams pa)	TNUH Y10 (Exams pa)	Overall Growth Y00-10	CAGR
Plain film x-ray	417,037	452,272	8.4%	0.8%
Non-Obs USS	58,132	63,354	9.0%	0.9%
MRI	62,796	68,492	9.1%	0.9%
CT	96,788	105,154	8.6%	0.8%

Table 3 – TNUH Diagnosting Growth Rates

Community Diagnostic Centres development

As part of the national programme established to support the NHS Long Term Plan in increasing diagnostic provision, Nottingham University Hospitals and Nottingham and Nottinghamshire ICS are implementing a Community Diagnostic Centre (CDC). The Programme will be delivered in partnership with Nottingham City Council and will deliver:

- A 2,900m2, two storey community diagnostic centre
- City centre location with excellent public transport links
- Improved access to healthcare through excellent public transport links and location within 15 minute walking distance of some of our most deprived communities
- Physical separation of outpatient diagnostics from inpatient and urgent streams

The additional capacity delivered by the CDC will support the Trust's elective backlog recovery and return to the achievement of the 6 week diagnostic waiting time target. The new building will facilitate the redesign of diagnostics pathways, for example, one stop clinics, and support increased GP direct access to diagnostics.

It is in early stage of planning and the scheme aims to deliver the following benefits to the Trust and system:

- Dedicated outpatient diagnostic capacity
- 117,000 additional tests per year will be carried out in the CDC's first full year 2025/26, increasing to 138,000 tests by 2029/30
- Additional tests will be across MRI, CT, x-ray, ultrasound, echocardiography, ECG and lung function testing
- Supporting elective backlog recovery, achievement of cancer waiting times and 6 week diagnostic waiting time targets
- Supporting GP direct access to diagnostics
- Faster diagnostics means that patients are put on the appropriate treatment pathway more quickly so their condition doesn't increase in severity
- Addressing health inequalities by improving access
- Workforce model which provides opportunities for extended roles and an environment that supports innovation, training, development and well-being
- Contribution to Trust and system's Net Zero ambitions
- Delivery of digitally enabled care.

A full breakdown of the Diagnostic capacity being provided by the CDC is shown in table 4 below.

CDC activity profile									
No. tests	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32
MRI	1,827	5,637	14,688	14,688	14,688	14,688	14,688	14,688	14,688
CT		765	18,360	18,360	18,360	18,360	18,360	18,360	18,360
Ultrasound		319	7,650	7,650	7,650	7,650	10,710	10,710	10,710
X-ray		885	21,250	21,250	21,250	21,250	29,750	29,750	29,750
Echo		151	3,612	4,802	5,057	5,057	5,057	5,057	5,057
ECG		354	8,500	11,050	11,900	11,900	11,900	11,900	11,900
Cardiology ambulatory		89	2,125	2,805	2,975	2,975	2,975	2,975	2,975
Respiratory physiology		216	8,251	11,593	12,369	12,369	12,369	12,369	12,369
Phlebotomy		120	29,000	29,000	29,000	29,000	29,000	29,000	29,000
POCT		143	3,448	3,448	3,448	3,448	3,448	3,448	3,448
Total tests	1,827	8,679	116,884	124,646	126,697	126,697	138,257	138,257	138,257

Table 4 – Nottingham CDC planned incremental activity

The CDC development will provide a step change in diagnostic capacity in the short to medium term with future plans needed to address any further shortfalls against predicted growth as set out in the Richards report.

5.8.15 Specialised Services

There has been a trend of increased demand for specialised services over a number of years.

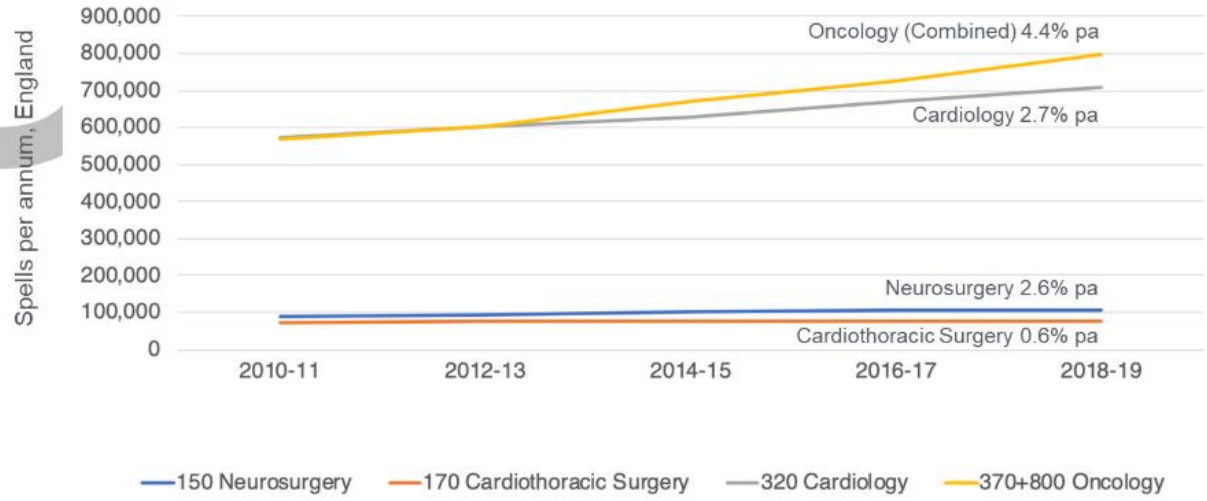


Figure 82 demand for specialised services

Assumptions around specialised services have been agreed to be:

- Inclusion of annual demographic and non-demographic growth allowances in line with locally commissioned services. Overall non-elective/emergency growth of 2.5% per annum and elective/daycase growth of 0.5% per annum
- The following additional top-ups (to year 15) are included for:

  - Neuro-surgery & Cardiology – 1% increase in elective and day case activity per annum
  - Cancer, thoracic surgery, clinical haematology & transplant: 2% Emergency, 2.5% Elective & Daycase.
  - Cardiothoracic – Nil

- It is currently assumed that the Trust will on balance neither lose nor gain activity as a result of any regional reconfiguration of specialist services

5.8.16 Impact Assessments

Carnell Farrar were commissioned to carry out impact assessments to establish any material impact whose outputs could be fed into activity modelling, in particular where services moved site causing travel times to increase.

It was established via this assessment and using a previous ICS analysis that a move of the maternity services at City Campus to be consolidated with maternity services at Queens Medical Centre could lead to a potential shift of 630 births per annum to Sherwood Forest Hospitals.

5.8.17 Sensitivity Analysis

Emergency Department sensitivity analysis

For Emergency Department sensitivity testing we have estimated annual growth based on 2019 monthly growth extrapolated to a yearly rate. Pre-2019 data was not considered suitable due to significant pathway and associated coding and counting changes in 2018 however associated analysis looking further back gave assurance this monthly growth was accurate. This growth was then added into the model (1.7%)

Emergency Inpatient Sensitivity testing

For Emergency Inpatient sensitivity testing we had built in annual growth based ICS long term plan projections. We looked at 3 year historical growth. This growth was then added into the model (1.5%)

5.8.18 Summary of Model Assumptions for years 0 – 20 for all commissioners (Including growth following sensitivity analysis and new scenario incorporating bed efficiencies)

		Model Assumptions						
		ED	NELIP 0-day LOS	NELIP 1 day LOS	NELIP 2+ day LOS	ELIP	DC	OP
Activity Growth Years 0-5	Demographic	ONS projections (for former Nottinghamshire CCGs, by age band) to all CCG activity				Total 13.1% ELIP growth and 18.8% DC growth		None applied
	Non-demographic	No non-demographic growth applied, to reflect pandemic situation						
	Spec Comm	ONS CCG projections (by former CCG and age band) to spec comm activity Non-demographic top-up by selected specialty as per analysis of national trend						
Activity Growth Years 6-20	Demographic	ONS projections (by former CCG and age band) to all CCG activity						
	Non-demographic (as per trend analysis)	0.0%	2.5% pa years 6-10; 0.0% after (13.1% total)		1.0% pa years 6-20 (16.1% total)	0.5% pa years 6-10; 0.0% after (2.5% total)		0.0%
	Spec Comm	ONS CCG projections (by former CCG and age band) to spec comm activity Non-demographic top-up by selected specialty as per analysis of national trend						
NUH Contributory Strategies		N/A	SDEC to deliver 30% of formerly admitted NELIP activity			Shift from ELIP to DC, DC to OPProc		Shift to 50% non-F2F non-proc delivery + 5% left shift
Reduction in Occupied Bed Days		Years 6-20: non-demographic growth in OBDs cancelled for NEL 2+ days LOS spells (as per historic trend; exc. spec comm). Demographic growth in OBDs allowed Years 00-5: non-demographic growth in ELIP bed days cancelled to deliver ALOS reduction						
Trans-formation	Admission Avoidance	5% reduction in adult NEL admissions by year 05 (not applied to NRC, critical care or spec comm); target saving 66 beds						
	Virtual Wards	4.3% shift of adult NEL base ward bed days (and beds) to virtual ward by year 05 (not applied to spec comm activity); target saving 30 beds						
	MSFT: Improved Discharges	39% shift of adult NEL step down bed days (and beds) to community by year 05 (applied to spec comm activity); target saving 76 beds						
Reorganisation		No major service reconfiguration assumed, exc. National Rehabilitation Centre						

Figure 83: Summary of model assumptions

As identified in the table, our model applies 2.5% non-demographic growth (for years 6-20); in addition, as identified in the table, we also apply demographic growth projections and additional top-ups for specialised commissioning activity. As such, the noted 2.5% growth is not the total growth allowance for elective and day case activity. Over the longer term the model tapers growth down to demographic factors alone, which explains the longer-term fall in the activity growth rate to 0.4-0.5% pa; however, this still results in a Y06-20 overall outturn activity growth of 15-17% depending on POD (i.e., not just 2.5%).

5.8.19 Demographic Growth

The assumptions the demand and capacity model uses the Office for National Statistics (ONS) population projections for the six local Nottinghamshire CCG's (as was in 2019, now merged in April 2020). The catchment is illustrated below in Figure 41 with the projected population by age group over the 20 year period in figure 42.

We've applied growth by age bands and CCG of residence for the six main commissioners (and an average of the six for everything else). Age bands: 0-15, 16-64, 65-74, 75-84, 85+.

Also the growth is calculated against the ONS projections for the actual individual years (i.e., Y0-Y5 is a different value to Y6-10, and Y11-15, etc).

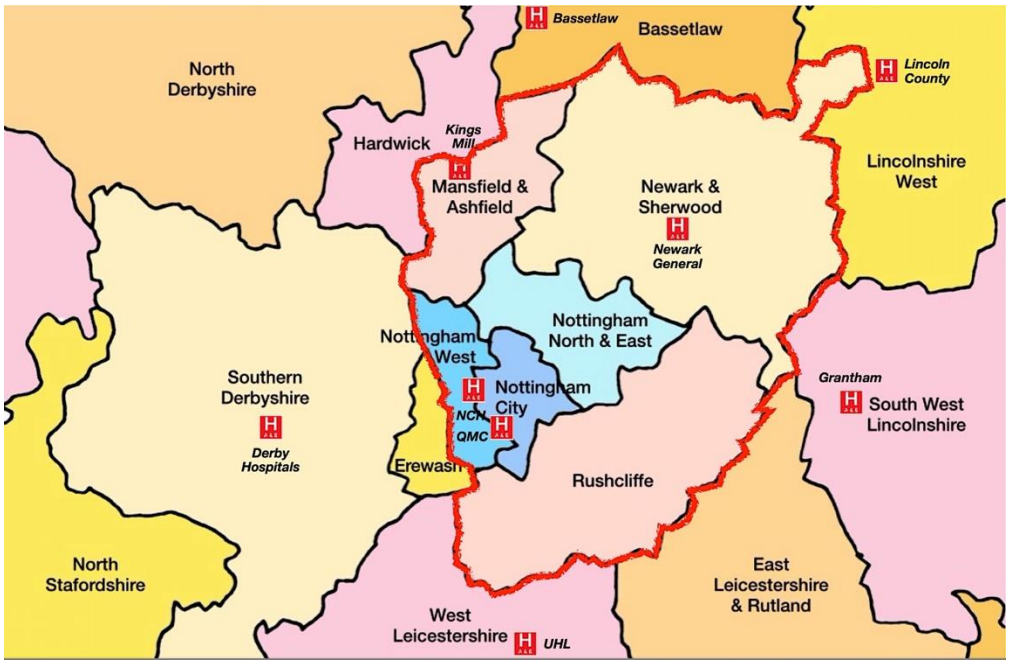


Figure 84 map of area covered by demand and capacity model

Figure 85 ONS growth predictions

Age Group	2020 Pop'n	2030 Pop'n	2040 Pop'n	Growth (yr 0-10)	Growth (year 10-20)	Growth (year 0-20)	Compund Annual Growth
0-14	119,856	119,081	121,428	-0.6%	2.0%	1.3%	0.1%
15-64	743,533	765,314	774,803	2.9%	1.2%	4.2%	0.2%
65-74	102,268	117,274	123,516	14.7%	5.3%	20.8%	0.9%
75-84	62,307	79,886	94,836	28.2%	18.7%	52.2%	2.1%
85	24,277	30,707	41,202	26.5%	34.2%	69.7%	2.7%
All ages	**1,052,242**	**1,112,262**	**1,155,785**	**5.7%**	**3.9%**	**9.8%**	**0.5%**

5.8.20 Bed Outputs Summary

Our initial bed model demonstrated a need for a net increase in 154 beds at Y10. However the east midlands clinical senate review recommended a review of the efficiency assumption in the model as they stated that these were overly optimistic. In response to the Clinical Senate recommendation the programme established a task and finish group to review the ambition.

Taking in to account the revised efficiency ambitions with the population growth and the other activity modelling assumptions described above in this section, the Y10 net bed increase is 213 beds. This is shown in the bed bridge below.

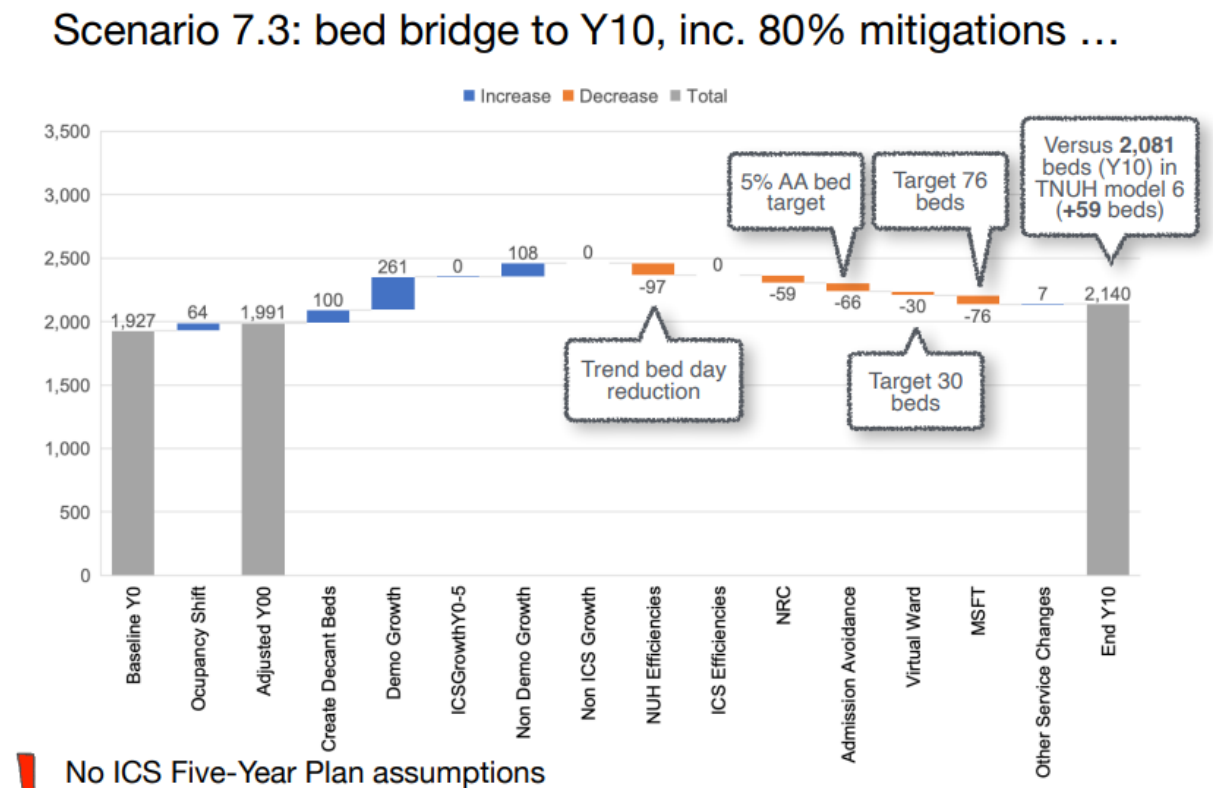


Figure 86: Bed Bridge

The increased bed requirement for the Trust by bed category as shown in the figure below:

Year	Beds by POD (inc. Occupancy)												Total	Dec-ant	Grand Total
	Assessment		Adult Base Ward	Adult & Child Crit Care	Long Stay (>14 days)	Obstetrics		Children			Escal ation	NRC			
	All MAU	All SAU				MLU	OLU	PAU	PSAU	Child Ward					
Year 00	135	30	1,054	190	194	2	136	11		96	58	21	1,927	27	1,954
Year 05	139	31	1,035	225	118	11	125	20	10	95	60	57	1,926	100	2,025
Year 10	161	35	1,147	241	131	11	126	20	10	93	64	0	2,039	100	2,140
Year 15	185	38	1,269	260	149	11	127	20	10	93	69		2,231	100	2,331
Year 20	204	41	1,344	278	160	11	128	20	10	95	74		2,365	100	2,465
Growth	51%	37%	28%	46%	-18%	450%	-6%	82%	100%	-1%	28%	-100%	23%	270%	26%

MAU: Medical Assessment Unit
SAU: Surgical Assessment Unit
NRC: National Rehabilitation Centre (transferred by year 10)

MLU: Midwife Led Unit
OLU: Obstetric Led Unit
PAU: Paediatric Assessment Unit
PSAU: Paediatric Surgical Assessment Unit

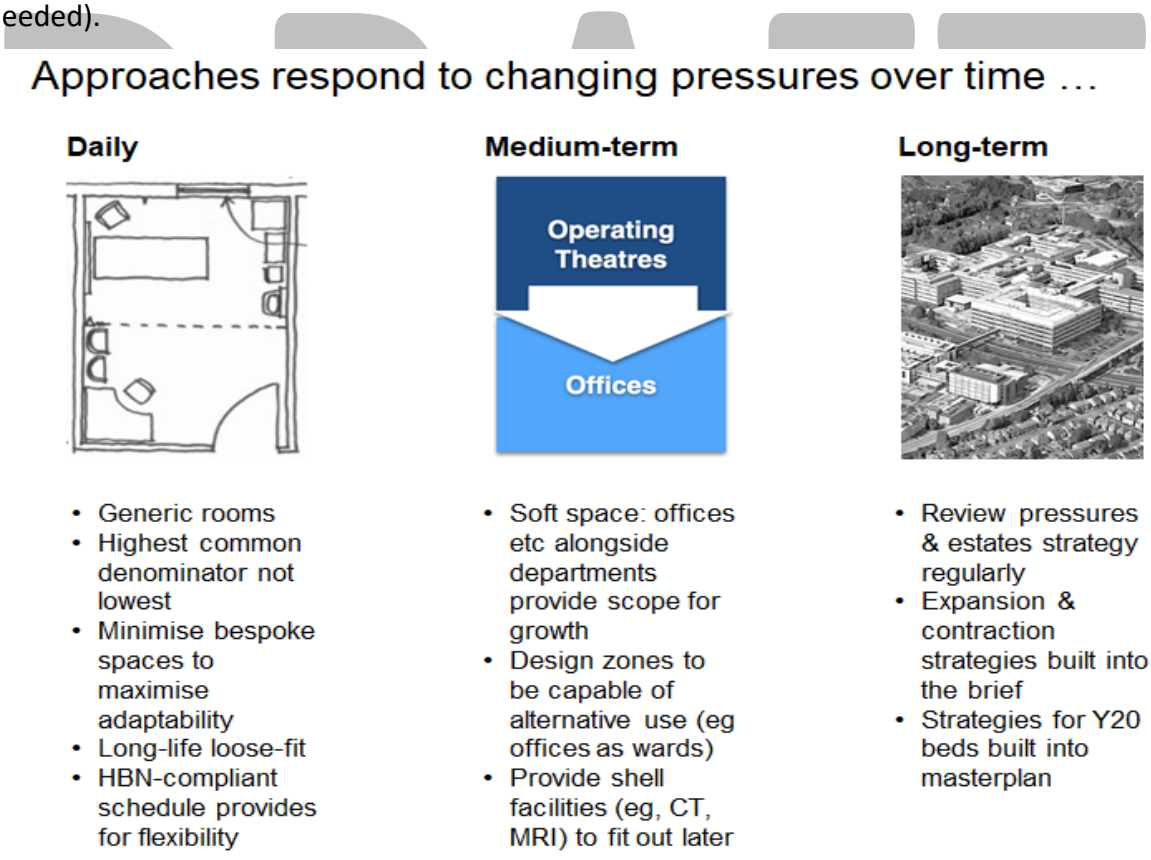
Figure 87: Increased bed requirements

See also Appendix 16 for full details of the bed modelling

5.8.21 Ensuring Flexibility in variation of demand

Besides escalation beds (which would be used for seasonal pressures) an additional 100 decant beds was built into the model which can be used for seasonal additional capacity during the winter, and to support infection control and planned maintenance programme in the summer months. These beds are included within the elective and emergency inpatient sections above. These beds represent 4 of approximately 80 wards and allows a maintenance programme to upgrade each ward every 20 years on average (on the basis that 4 wards can be upgraded/maintained per annum). The decant/winter pressure beds are in addition and on top of the bedstock capacity modelled required to deliver at least 85th percentile of core beds at 92% occupancy to meet inpatient demand. (At present only 27 decant beds built into current bed baseline).

The design will ensure maximum flexibility of estate and provision to increase beds if needed. For example designing rooms to be as generic as possible to allow for easier change of use and designing layout for easier conversion (e.g. where wards could be expanded if needed).



Daily operational pressures:

- Rooms are designed as generic as possible so can meet multiple needs more easily (e.g. change of specialties)

Medium term pressures:

- Design of rooms/layout can be more easily converted
- Location of areas designed so certain areas (e.g. wards) can expand if required

Long term:

- Flexibility built in to adapt to where modelling will not have allowed for future requirements

5.8.22 Performance Target Assumptions

The demand and capacity model was developed during the second half of 2020 and was based on activity data from calendar year 2019 on the basis that this was the most recent activity data not impacted by the coronavirus pandemic. Therefore, many performance standards would have already been built in, for example if we were meeting certain performance standards such as the cancer 2 week wait this would then be built into the model forecast. However where deemed required, some performance assumptions were further built in such as where we applied 3% additional capacity for years 0-5 to address contract underperformance in EL/DC 2019/20 with regards to our waiting list. Other performance standards were additionally built in from national guidance (e.g., moving Face2Face outpatient appointments to virtual by 30% as outlined in the NHSE 2019 Long Term plan) or by identifying opportunity from benchmarking with peer trusts (e.g., a 6% shift of 1-2 day Elective day cases to Daycases using Model Hospital data). A decision was made not to build in any impact from the pandemic as we took the assumption that the recovery would be built in before year 5 and a later refresh of the baseline would test any assumptions already used. We have reviewed against the operational planning guidance for 23/24 and 24/25 and this modelling is in line with the trajectories within there and are therefore deemed to be a sensible rationale by Year 10.

5.8.23 Conclusion

The aim has been to ensure we right size to be ‘big enough to cope but no bigger than necessary’ by determining future activity and the models of care managing that activity. No matter how robust our methodology for demand and capacity modelling, looking forward 20 years is challenging to forecast

Therefore we have:

- Taken Y10 as our planning horizon
- Applied sensitivity analysis to key assumptions.
- Developed an approach that enables flexibility to manage changes in demand which can happen on a day to day basis, as a result of expected seasonal pressures, and the unexpected such as a pandemic.
- We also appreciate that this modelling will be revisited at each stage of the business case process in order to ensure it reflects the latest planned delivery models and any changes in national or local guidance.

5.9 Unintended Consequences

The development of the clinical model principles and configuration options has been based on clinical guidelines and best practice with the intended aim to improve outcomes for our population, the experience our patients have when accessing acute services at NUH and the workday experience for our staff. However, reconfiguring services poses a risk in relation to unintended consequences and the TNUH programme has considered these in multiple ways from the outset.

5.9.1 Integrated impact assessment

Chapter 7 describes the integrated impact assessment (IIA). The integrated impact assessment considers the impact on the following areas:

- quality and outcomes
- access and travel
- other providers
- sustainability

In assessing these areas the IIA looks at both the positive impacts as well as the potential negative impacts and unintended consequences. The specific recommendations arising from the completion of the IIA are documented in Chapter 7.

5.9.2 Thematic deep dives

In preparation for the 2nd review of the East Midlands Clinical Senate a series of thematic deep dives were completed. The clinical advisory group recommended the areas of focus and oversaw the process. The purpose of the deep dives was to examine some of the next level of detail of the clinical model proposals to ensure that the consequences of the model were better understood. The areas of focus were:

- Maternity & Neonates
- Emergency admissions
- Acute cancer
- Ambulatory care

The outputs from these deep dives were tested through the clinical senate review to provide assurance that we have considered all aspects of the proposals sufficiently.

5.9.3 Quality impact assessments (QIAs)

Quality impact assessments have been undertaken and will remain a live document throughout the duration of the programme. The QIAs support the evidence base for the positive impacts that the changes will make as well as the potential risks/consequences which need to be considered. They remain live so as the programme progresses through to operational planning all potential consequences are explored and documented. The QIAs have been completed for the following areas:

- Burns & Emergency Plastics
- Respiratory
- Maternity & Neonates

- Oncology & haematology
- Gynaecology
- Child development centre

5.9.4 Unintended consequences themes

The main unintended consequences themes arising from the work described above are summarised in the table 5 below. The Clinical Advisory Group provides the main clinical oversight for these themes and the recommendations for any mitigations.

Theme	**Note**
Clinical adjacencies	• Whilst the reconfiguration proposals consider better adjacencies of services there are some areas where careful planning is required • Ensuring appropriate and timely access to critical care for a deteriorating patient on a large acute site (QMC) will require further careful planning and thought • Moving Haematology from the City Hospital site will require the need for the development of an in reach model for some of the services which remain e.g. Renal and Transplant • The clinical advisory group is overseeing the next phase of development of the operational detail to support the response to these known issues
Workforce models	• Some services (Respiratory & Oncology) are moving from a single site model to a two site model in line with our clinical model principles and options appraisal • There are some workforce implications from this which will need to be carefully managed through workforce planning • These specific areas have been identified and are aligned with our workforce strategy

Table 5 – Unintended Consequences

6 Options development and appraisal

This chapter describes the process for identifying a preferred option to be taken forward for public consultation. To address the issues facing health and care services in Nottingham and Nottinghamshire, we propose reconfiguring hospital services and delivering new state-of-the art hospital estate. This would enable us to provide more effective care for our patients, with cutting-edge clinical care, supported by a digitally advanced hospital, fully integrated with the wider system.

We have developed and evaluated options to address the case for change and deliver the proposed clinical model of care. This process has complied with the HM Treasury Green Book approach. We undertook an extensive process, including an options evaluation process, to consider an exhaustive list of options.

We first discounted any approach that would see services further split across more than two Nottingham University Hospitals NHS Trust (NUH) sites and looked only at options that would deliver our clinical design principles. The longlist options were all combinations of adult emergency services, women and children's services, elective services, and cancer services. These were evaluated against the hierarchy of critical success factor criteria on a pass/fail basis.

This process resulted in a shortlist of two reconfiguration options (options 7 and 13), and business as usual (BAU) and do minimum options. The latter two options were included because the HM Treasury Green Book sets out that an appropriate counterfactual needs to be identified within the short list against which potential solutions can be compared in a capital business case, although they would not deliver our critical success factors.

We evaluated our shortlist of options, relative to one another, against twenty-two financial and non-financial desirable criteria aligned to the integrated care system (ICS) outcomes framework and our own investment objectives set out in our case for change. We concluded that option 13 was the most advantageous in terms of benefit-cost ratio (BCR) and net present social value (NPSV). In parallel to the options evaluation process, we acted on recommendations from the Clinical Senate in April 2021 to provide further detail for the emergency care, cancer care and maternity clinical models of care. The findings within this review mean that **option 7 was agreed to be not clinically viable and was discounted from the shortlist of options**.

In June 2021, the TNUH Programme was made aware of additional New Hospital Programme (NHP) requirements for schemes. Option 13 was originally considered to be within our affordability envelope of £1.345bn, funded by the New Hospitals Programme (NHP). However, on the basis of meeting requirements for NHP schemes, option 13 was no longer be affordable. Option 13 was therefore discounted from the shortlist of options but remains our long-term strategic ambition.

We then carried out a clinical prioritisation exercise in October 2021 to revise option 13 in such a way to achieve the optimal level of clinical transformation within the available capital, whilst maintaining high quality, sustainable and patient focussed services. The conclusion of this exercise is option 13a, which retains some emergency activity at City Hospital to reduce the level of capital investment required at QMC. Other variations of option 13 were considered but all failed the critical success factor evaluation.

6.1 Introduction

We are focused on addressing the specific issues facing health and care services in Nottingham and Nottinghamshire. To address these challenges, we propose reconfiguring services and delivering new state-of-the art hospital estate. This would enable us to provide safer care for our patients, with cutting-edge clinical care, supported by a digitally advanced hospital, fully integrated with the wider system.

In the case for change, we identified the need for more integrated services and a population health approach, a new clinical model of care and upgraded estate to support clinical adjacencies and address ageing infrastructure. We identified issues in terms of an ageing population, living longer with multiple long term conditions that is putting a strain on our services. A more integrated model across the system, with hospital infrastructure that can provide access to interdependent services is critical to address these issues.

Our clinical model of care responds directly to this challenge, providing a framework for future service development. The model covers primarily in-hospital services, underpinned by integrated care and a population management approach that will deliver care closer to home, outside a traditional hospital setting. We know that the split site model is an issue for some services, for which consolidation would respond to national and regional guidance. Therefore bringing services together, in fit-for-purpose estate is key to improving outcomes in Nottingham and Nottinghamshire.

The Tomorrow's Nottingham University Hospital NHS Trust (TNUH) programme, has developed and evaluated options for delivering the proposed clinical model of care.

6.2 Engagement in options development and appraisal

As recommended by HM Treasury Green Book[125], a structured approach to identifying and filtering a broad range of options has been undertaken. The options appraisal process assesses all possible clinical configurations for delivering the agreed clinical model of care against a set of evaluation criteria, to identify a preferred option.

The assessments undertaken as part of the options appraisal are summarised in Figure 88. The process involved:

- a combination of four key workshops with clinical and operational involvement
- workstream assessments
- inputs from the Clinical Advisory Group (CAG) and the Finance, Estates and Activity Advisory Group (FEAAG) to assess the relevant evidence.

[125] The Green Book (2022), HM Treasury

Figure 88 Options Appraisal Process

The process has been supported by wider engagement with patients and the public. We carried out phase-1 pre consultation engagement in November 2020, which included over 650 responses. This helped to steer the development of our clinical model and provisions of the best possible care to ensure positive impact on people's health and well-being. The overarching aim of the second phase of pre-consultation engagement was to continue the conversation with the public. In total, just under 2,000 individuals participated in the engagement that took place between 7 March and 5 April 2022. A Stakeholder Reference Group, chaired by Healthwatch, has supported and steered our public engagement work. The group is comprised of patient representatives and colleagues from voluntary and community sector organisations.

6.2.1 Workshops

Four workshops were attended by stakeholders from the following organisations, though not all organisations were represented at all workshops:

- NHS England and NHS Improvement;
- Nottingham University Hospitals NHS Trust;
- Nottingham and Nottinghamshire CCG;
- Sherwood Forest Hospitals Foundation Trust;
- Nottinghamshire Healthcare NHS Foundation Trust; and
- East Midlands Ambulance Service NHS Trust.

These workshops were independently facilitated to ensure process rigor and avoidance of bias. The format of each workshop was shaped by the guiding principles from the HM Treasury Green Book.

6.3 Our approach to appraising the options

An options evaluation process was designed that enabled us to move through a filter 'funnel' from an initial possibility of a significant number of options down to a small number of options to undergo further analysis, before agreeing the options that would go to consultation. Figure 89 summarises the how initial inputs are used to develop a longlist which we then refined in subsequent phases of the options appraisal.

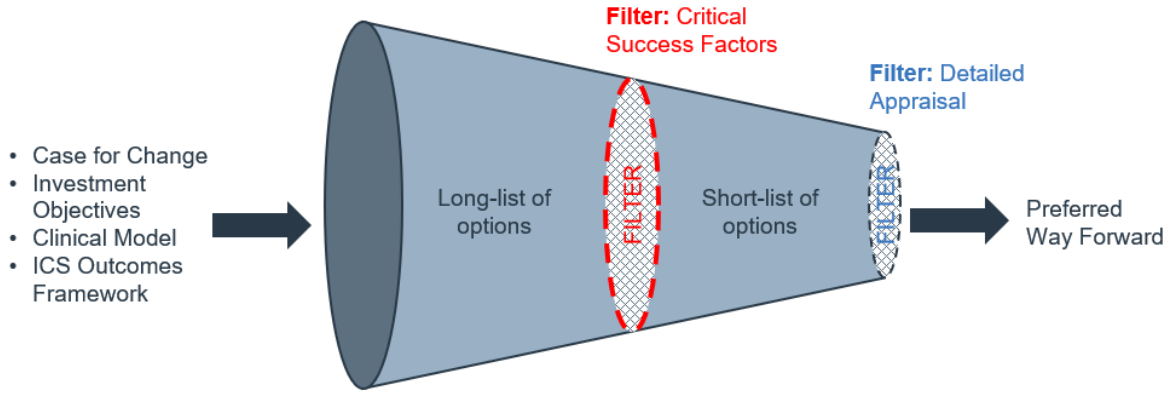


Figure 89 Filter approach to develop a preferred option for consultation

We undertook an extensive process to consider an exhaustive list of options. Our starting point was to understand the case for change (see section 4) and the clinical models of care that could meet these needs (see section 5). We then considered where services might best be located to meet the needs of the population and resolve the issues in the case for change. We therefore constrained potential sites for services to the geography of Nottingham and Nottinghamshire. We also considered that the capital financing of the scheme would be through the New Hospital Programme (NHP) which has confirmed that:

- capital can only be spent on Nottingham University Hospitals NHS Trust (NUH) sites and/or acute hospital sites
- capital must be spent on a new hospital within the definitions provided by the NHP are:
    - a whole new hospital site on a new site or current NHS land, either a single service of consolidation of services on a new site
    - a major new clinical building on an existing site or a new wing of an existing hospital, provided it contains a whole clinical service, such as maternity or children's services, or
    - a major refurbishment and alteration of all but building frame or main structure, delivering a significant extension to useful life which includes major or visible changes to the external structure

We have looked at all different permutations of locations for acute services across Nottingham and Nottinghamshire including looking at possible greenfield (new) sites.

6.3.1 Number of sites from which services could be delivered

NUH currently provide services from two sites, except for a small number of outpatient services that are provided at Ropewalk House. Many of the issues identified in our case for change are associated with providing services across the two hospital sites including splitting scarce staff and having services that are not co-located with co-dependent services. Ropewalk provides low volumes of activity and the current services may be more appropriately consolidated with acute services or delivered in the community.

We are therefore not giving further consideration to options that would see services further split across more than two Nottingham University Hospitals NHS Trust (NUH) sites and the maximum number of sites for any service would be two. This means that services could be provided at QMC, City Hospital, Ropewalk House or a new hospital site.

6.3.2 Applying the clinical design principles

Our work on the proposed clinical model of care resulted in six design principles, as shown in section 5):

1. All care pathways should focus on integrated working with system partners to deliver appropriate out of hospital care including self-care and prevention.
2. All emergency secondary care services should be consolidated on one site where necessary dependencies are available 24/7
3. All women's and children's hospital services should be consolidated and co-located with adult emergency care.
4. Elective care inpatient facilities and day case surgery should be delivered separate from emergency Care in order to protect elective capacity, maintaining access to critical care.
5. Cancer care hospital services should have access to critical care and all associated medical specialties. Elective and ambulatory cancer care would follow principles 4. And 6.
6. Ambulatory care pathways (outpatients and day cases) should be redesigned to minimise disruption to patient's lives, providing care in accessible locations whilst maximising the potential of new and emerging technologies.

We used the design principles to create a long list of 56 options, discounting the BAU and Do Minimum which would not address our case for change (see Appendix 17). The options were all combinations of the design principles at the potential new sites:

1. Adult emergency care services
2. Women and children's services
3. Elective services
4. Cancer services[126]
    - a. Emergency cancer and inpatient care
    - b. Ambulatory cancer
    - c. Elective cancer surgery

Ancillary services (e.g. diagnostics) would be provided to support clinical care.

At any of:

- A new site
- QMC
- City Hospital
- Ropewalk House

The location of the existing three sites is shown in Figure 90.

[126] The split of cancer services was confirmed at a later point in the process. This is captured at the end of this chapter.

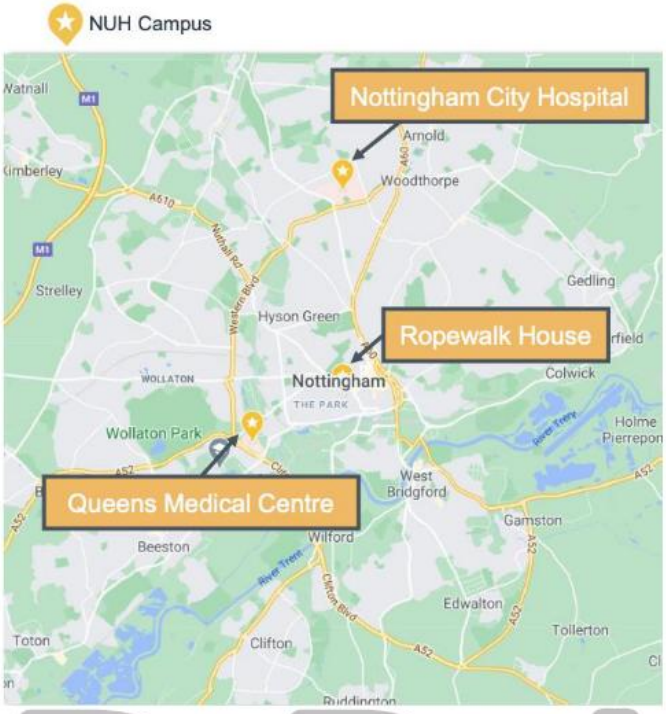


Figure 90 Nottingham University Hospitals NHS Trust sites

The long list of 56 options, plus BAU and Do Minimum, can be seen in Figure 91 below.

Revised Long List

Option #	Sites				
	QMC	City	Ropewalk	New a	New b
1	Do Nothing				
2	Do Minimal				
3	1+2+3+4				
4	1+2+4	3			
5	1+2+4		3		
6	1+2+4			3	
7	1+2	3+4			
8	1+2		3+4		
9	1+2			3+4	
10	1+2+3+4a	4b			
11	1+2+3+4a		4b		
12	1+2+3+4a			4b	
13	1+2+4a	3+4b+4c			
14	1+2+4a		3+4b+4c		
15	1+2+4a			3+4b+4c	
16		1+2+3+4			
17		1+2+4	3		
18	3	1+2+4			
19		1+2+4		3	
20		1+2	3+4		
21	3+4	1+2			
22		1+2		3+4	
23		1+2+3+4a+4c	4b		
24	4b	1+2+3+4a+4c			
25		1+2+3+4a+4c		4b	
26		1+2+4a	3+4b+4c		
27	3+4b+4c	1+2+4a			
28		1+2+4a		3+4b+4c	
29			1+2+3+4		
30	3		1+2+4		
31		3	1+2+4		
32			1+2+4	3	
33	3+4		1+2		
34		3+4	1+2		
35			1+2	3+4	
36	4b		1+2+3+4a+4c		
37		4b	1+2+3+4a+4c		
38			1+2+3+4a+4c	4b	
39	3+4b+4c		1+2+4a		
40		3+4b+4c	1+2+4a		

1	Adult Emergency Services
2	Women's and Children's
3	Elective Services
4	Cancer Services
4a	Cancer Services - emergency and inpatient
4b	Cancer Services - ambulatory
4c	Cancer Services - elective

58 possible options to deliver the model

Option #	Sites				
	QMC	City	Ropewalk	New a	New b
41			1+2+4a	3+4b+4c	
42				1+2+3+4	
43	3			1+2+4	
44		3		1+2+4	
45			3	1+2+4	
46				1+2+4	3
47	3+4			1+2	
48		3+4		1+2	
49			3+4	1+2	
50				1+2	3+4
51	4b			1+2+3+4a+4c	
52		4b		1+2+3+4a+4c	
53			4b	1+2+3+4a+4c	
54				1+2+3+4a+4c	4b
55	3+4b+4c			1+2+4a	
56		3+4b+4c		1+2+4a	
57			3+4b+4c	1+2+4a	
58				1+2+4a	3+4b+4c

Figure 91 revised long list

There was agreement by clinicians that cancer services could be sub-categorised into emergency care, ambulatory and elective cancer. Different combinations of these sub-categories would still enable the proposed clinical model of care to be delivered if relevant services could be co-located with critical care and elective and ambulatory services could be consolidated.

The ambulatory clinical design principle is applicable across multiple specialties and therefore ambulatory is not included separately within the different combinations for the options. The clinical design principle is focused on access and standardisation, and enabling new models of care, enabled through digital. Options would be viable to the extent they enable new models that are aligned to the clinical model of care. The impact of the clinical design principle on services currently provided at Ropewalk House is shown in section 6.5 (see also Appendix 17).

6.4 Evaluation criteria

We developed a set of evaluation criteria, based on our case for change, to assess our longlist of options. There were two sets of assessment criteria used in the options appraisal process. These were:

- **Critical success factors (CSFs):** these were used on a pass / fail basis to assess and appraise a long list of options to determine a short list of options.
- **Desirable criteria:** these were used to weigh up relevant criteria to measure relevant differentiating factors between the options on the short list to determine a recommended preferred option.

6.4.1 Defining the critical success factors

The longlist of options was first assessed against the critical success factors (CSFs), which are the attributes essential for successful delivery of the programme. The CSFs each align with one of the following HM Treasury categories[127]:

- Strategic fit and business needs
- Potential value for money
- Supplier capacity and capability
- Potential affordability
- Potential achievability

Each CSF represents an essential attribute for successful delivery of the programme. These were organised into a hierarchy and a binary pass / fail assessment was made for each option. Once an option failed a threshold, it was discounted (i.e. no subsequent analysis required). This process resulted in options either being discounted or carried forward to the shortlist. The CSFs and pass/fail thresholds and hierarchy are shown in Figure 92.

[127] The Green Book (2022), HM Treasury

HM Treasury category	Critical success factor	Pass/fail threshold
Potential achievability	**Deliverability**	1a. Deliverable by target year of opening 1b. Makes best use of existing NHS estate 1c. Site locations must be able to deliver the required footprint and capacity
Strategic fit and business needs	**Strategic fit**	2a. Consistent with the ICS Clinical and Community Services Strategy 2b. Consistent with ICB (formerly CCG) and NHSE specialist commissioning intentions 2c. Enable delivery of Tomorrow's NUH clinical model of care and the clinical design principles 2d. Enable continued support of Nottingham Medical School
Strategic fit and business needs	**Care quality and patient experience**	3a. Supports improvement in service quality and safety from current levels 3b. Supports improvement in patient experience from current levels
Strategic fit and business needs	**Future flexibility**	4a. Can provide flexible capacity to meet forecast activity growth until [target year of opening +10 years] and respond to changing needs post Covid-19 and/or technological development in care delivery 4b. Align with workforce capacity to deliver future needs of the population serviced by Nottingham University Hospitals NHS Trust
Potential affordability	**Affordability**	5a. Capital investment must be affordable within the available capital envelope

Figure 92 Tomorrow's NUH critical success factors

6.4.2 Application of the critical success factors (CSFs) against the long list

Any option that did not meet one or more critical success factor (CSF) thresholds was discounted for further analysis. In undertaking this assessment:

- Programme workstreams compiled robust evidence to assess which options did or did not meet the CSF threshold.
- Evidence from programme workstreams were presented to key stakeholders in a workshop format.

- Any options which fail to meet the CSF threshold were removed. A short list of options was identified as a result of this assessment – all options on this short list met every CSF threshold.

The full evidence that supports the assessment of each CSF threshold can be found in Appendix 17**.**

6.4.2.1 Assessment against the deliverability CSF

Threshold 1a) Deliverable by target year of opening

Based on the evidence:

- Options which proposed delivering adult emergency and services for women, children and families from City Hospital were discounted, given the significant decant and demolition required to deliver a single site option at City Hospital.
- Options with a new site would require five years to acquire the site, meaning the programme would not conclude within the required timescales.

The purpose of this threshold was to discount any options with significant planning risk that could not be substantially completed by the target year of opening (2030). The target year was set by government in 2020[128] and confirmed via a memorandum of understanding signed between NUH and the New Hospitals Programme.

The programme wished to explore all potential site solutions, to ensure that option generation was not constrained only to the current estate. As such, we conducted a Land Search Report[129] which identified possible new sites within the catchment area that met the size requirements of 22 hectares.

The evidence assessed that the time required for land acquisition and planning would add 5 years to the timeline for development of a new site – meaning the programme would not conclude until 2034. This assessment was based on comparisons with other similar constructions to build new hospitals.

Additional findings showed that City Hospital would require significant decant, demolition and rebuild to deliver a single site option, likely to take three to four years before building work could start. Additional significant works associated with highways works and travel plans would also pose additional challenge.

Threshold 1b) Makes best use of existing NHS estate at Nottingham University Hospitals NHS Trust

Based on the evidence, remaining options that proposed delivering standalone elective or cancer care, or a combination of both, at QMC were discounted, given the anticipated difficulties in selling off part of the site (unless there was a compelling clinical or system rationale to do otherwise).

[128] https://www.gov.uk/government/news/pm-confirms-37-billion-for-40-hospitals-in-biggest-hospital-building-programme-in-a-generation

[129] NUH Land Search Report 2021

Remaining options that proposed removing all services from QMC were also discounted given the anticipated difficulties in selling off the QMC site.

The purpose of this threshold was to discount any options which resulted in existing estate with substantial remaining life not being utilised or being left partially empty.

The NUH spatial briefing (2020) indicated that if the QMC bed numbers were to significantly reduce, this would pose the risk of QMC standing partially empty and not be optimally utilised. The QMC site also includes a public finance initiative (PFI) building, and the treatment centre and medical school which are not owned by the trust, therefore presenting difficulty to sell off parts of the existing estate.[130]

This was further supported by the NUH estates interim pre-stage 1 report (2020) which described the difficulties of saleability of the QMC estate as a 'high density monolithic urban block'. The indicative site rationalisation plan (2018) reported the opportunity to sell parts of City Hospital for redevelopment given its adjacency to residential areas if activity at City Hospital were reduced.

Threshold 1c) Site locations must be able to deliver the required footprint and capacity Based on the evidence, remaining options that proposed use of Ropewalk House were discounted, given its current size and limited possibility for expanding.

The purpose of this threshold was to discount any potential options that could not deliver the required footprint and capacity.

The NUH estates interim pre-stage 1 report (2020)[131] compared the square footage for each of the three NUH sites. Comparative sizes of existing sites were taken into account (Ropewalk House is 6,995 m^2 compared to 154,065 m^2 at City Hospital and 153,560 m^2 at QMC) and Ropewalk House would not have the capacity to host additional services and options including Ropewalk were discounted at this stage. Analysis of the clinical services currently at Ropewalk is included in section 6.5 (see also Appendix 17)

6.4.2.2 Assessment against the strategic fit CSF

Threshold 2a) Consistent with the ICS clinical and community services strategy **Threshold 2b) Consistent with ICB (formerly CCG) and NHS England specialist commissioning intentions** There were no further options discounted by these thresholds.

The purpose of these thresholds were to discount any potential options that were unlikely to deliver national, regional and local strategic priorities.

Neither the CCG commissioning strategy nor NHS commissioning – highly specialised services (2018) specifications specify locations within NUH from which care should be

[130] NUH Spatial Briefing, 2020

[131] NUH Estates Interim Pre-Stage 1 Report, 2020

delivered. The commissioning intentions for self-care, prevention and out of hospital care which would be common to all the options.

Threshold 2c) Enable delivery of the clinical model of care and the clinical design principles

The delivery of the clinical model of care is achieved through application of clinical design principles to longlist. There were no further options discounted by this threshold.

The purpose of this threshold was to discount any potential options that were not aligned with the clinical model of care or clinical design principles. All options align with the clinical design principles.

Threshold 2d) Enable continued support of Nottingham medical school

There were no further options discounted by this threshold.

The purpose of this threshold was to discount any potential options that did not enable continued support of the Nottingham Medical School.

Clinicians agreed that all long list options enable continued support of the Nottingham medical school on one of the sites, even those where services would not be co-located with the medical school.

6.4.2.3 Assessment against the care quality and patient experience CSF

Threshold 3a) Care quality and patient experience

Threshold 3b) Supports improvement in patient experience from current levels

Based on the evidence, remaining options which located elective care on a separate site from elective cancer were discounted, as they would not deliver improvements in quality, safety and patient experience.

The purpose of threshold 3a was to discount any potential options that cannot improve quality and safety from current levels. The purpose of threshold 3b was to discount any potential options that were unlikely to improve patient experience.

For thresholds 3a and 3b, clinicians advised that any options that located elective cancer on a separate site from the elective activity would not deliver improvements in service quality or safety, or patient experience from current levels.

The cancer model was subject to further deep dive analysis and iterated by our clinicians. Please see section 6.4.4 for the impact to the model and knock on affect to the options appraisal.

6.4.2.4 Assessment against the future flexibility CSF

Threshold 4a) Can provide flexible capacity to meet forecast activity growth until [target year of opening +10 years] and respond to changing needs post Covid-19 and/or technological development in care delivery

There were no further options discounted by this threshold.

The purpose of this threshold was to discount potential options that are unable to sustain activity growth.

Threshold 4b) Align with workforce requirements to deliver future needs of the population serviced by NUH.

There were no further options discounted by this threshold.

The purpose of this threshold was to discount potential options that were unable to meet workforce capacity requirements and those that were unlikely to improve workforce efficiency.

Any split of services across sites would likely add additional inefficiencies and challenges (e.g. where services offering single site specialties were required to provide elective care on one site and emergency on another), although many services are currently established to operate across two sites. Although some individual specialties would be split further, there is a balancing affect across the breadth of activity across emergency, women's, children's and family, elective and cancer care.

6.4.2.5 Assessment against the affordability CSF

Threshold 5a) Capital investment must be affordable within the available capital envelope

Based on the evidence, any options which proposed use of a new site were discounted, given it is likely to require capital in excess of the known capital envelope for the programme. There were no further options discounted by this threshold.

The purpose of this threshold was to ensure that planning for options remained within (or close to) the known capital envelope for the programme.

A single site new build is estimated to cost c. £3.6bn based on a 357,000m^2 development. This includes an allowance of £50-75m for land acquisition. The City Hospital site is valued at £12.9m so if sold this would make a negligible difference to the capital required.

There are a number of common metrics to help provide an indication of affordability before completing detailed analysis

- A new build single site is estimated to cost £3.6bn (x3 the NUH's capital envelope). To breakeven the trust would need to find £205m in savings (17% of NUH income)
- A partial new site development in place of the City Hospital campus is estimated to cost £1.5bn (is x1.25 of the NUH capital envelope and therefore out of scope). This does not include any capital for redeveloping QMC. To break even the Trust would need to find £85m in savings (7% of NUH income)

Based on the initial capital estimates and ready reckoner analysis, these suggest a new site development is unlikely to be affordable.

6.4.2.6 *Shortlist of options*

The assessment against the critical success factors (CSFs) resulted in a shortlist of four options, plus business-as-usual and do minimum, which were retained per the requirements of HM Treasury Green Book. The option are described in Figure 93.

Option #	Option title	Options specifics
1	Do nothing (BAU)	• Maintain existing buildings and services • Current arrangement to manage backlog maintenance (i.e. no major remedial work)
2	Do minimum	• Centralisation of maternity and neonates at QMC • Dilapidated estate would be resolved, with all poor or very poor condition areas returned to satisfactory or replaced • Reduction in risks to business continuity for clinical services through an investment in capacity through decant block and City Hospital wards project
7	Elective / emergency split site with cancer consolidated at City Hospital	• Women's and children's would be consolidated at QMC • Majority of emergency activity would be consolidated at QMC • Elective activity would be consolidated at City Hospital • Cancer services would be consolidated at City Hospital including emergency portal
13	Full elective / emergency split	• Women's and children's would be consolidated at QMC • All emergency would be consolidated at QMC including emergency cancer and all non-surgical cancer inpatients (elective and non-elective) • Elective activity, including elective cancer surgery would be consolidated at City Hospital • Ambulatory cancer would span across both City Hospital and QMC

Figure 93 Shortlist options

Option 3 and 10 were initially brought through onto the shortlist but subsequently removed. At the time, there was not sufficient financial modelling available to provide evidence to discount these options. At Programme Board on 17th February 2021, updated cost analysis for option 3 and 10 were submitted. In the case of each option, the benefits of clinical configuration would only be realised in 2037 at a capital cost of £3.51bn. Neither option would be affordable or deliverable within the financial timeframe and this means they would fail threshold 5a within the critical success factors (see Appendix 18).

We have included a business as usual (BAU) and do minimum option for completeness. At a subsequent business case stage, HM Treasury guidance requires that any provisional list must include a 'business as usual' and 'no service change' counterfactual as additional potential solutions for comparative purposes.

Both BAU and do minimum options listed include assumptions that would have applied if the intervention was not implemented (e.g. demand growth and quality improvement). While BAU assumes continuation of current arrangements, the do minimum option includes some minor interventions to deliver some benefit or improvement against case for change criteria.

Neither of these options would pass all CSF criteria. They are included only because the HM Treasury Green Book sets out that an appropriate counterfactual needs to be identified within the short list against which potential solutions can be compared.

6.4.3 Assessment of the shortlist against the desirable criteria

We used the desirable criteria to assess and appraise the short list of options relative to one another. We evaluated the short list against both financial and non-financial desirable criteria so we could identify an option or options for public consultation. This process ensured that the rationale behind this conclusion was transparent and understandable.

We developed the desirable criteria from the ICS system outcomes framework and our investment objectives in line with HM Treasury guidance. Tomorrow's NUH Programme Board signed these off on 9th December 2020 and they were reviewed by the CCG Governing Body on 2nd December 2020.

6.4.3.1 Non-financial desirable criteria

The non-financial desirable criteria are shown in Figure 94.

System outcomes framework domain	Investment objective	Desirable criteria description
		NON-FINANCIAL
Health and wellbeing	**1. Health Inequalities**	**Health inequalities:** The extent to which this option contributes to a reduction in health inequalities including increased support services and improved cultural appropriateness.
		Accessibility: The extent to which the option allows patients, staff and visitors to access the services whether using public or private transport, in terms of travel time and cost.
		Environment: The extent to which the option improves the environmental impact of services.

Independence, care and quality	**2. Quality**	**Clinical quality**: The extent to which the option provides timely, effective care that prevents people from dying prematurely, enhances quality of life from birth to death and helps people recover from episodes of ill-health.
	3. Experience	**Patient experience:** The extent to which the option ensures patients and visitors / carers are confident that care is patient-centred, they are being treated by the right staff, with dignity and respect, in a fit-for-purpose environment that they perceive to be accessible.
	4. Clinical safety	**Safety:** The extent to which the option ensures patients are treated safely, with fewer serious incidents, minimum hospital acquired infections and lower excess mortality.
	5. Efficiencies	**Efficient operation:** The extent to which the option enhances patient flow and supports efficient operation of the healthcare system through service redesign.
	6. Integration and alignment	**Integration of care:** The extent to which this option improves patient journeys through the healthcare system via a focus on collaboration and coordination between secondary and primary / community care teams and shared pathways that cross care settings.
		Alignment with wider health plans: The extent to which this option supports delivery of the ICS strategic priorities and Out of Hospital ambitions (incl. the Clinical and Community Services Strategy) and the NHS Long Term Plan.
Effective resource utilisation	**7. Workforce and sustainability**	**Staff availability:** The extent to which this option can be staffed appropriately, meeting rota requirements, whilst ensuring an appropriate skill mix allowing efficient and effective use of the workforce. NB: staff includes system partners working at NUH, trainees and volunteers
		Recruitment and retention: The extent to which this option would support attracting and retaining the best workforce. NB: staff includes system partners working at NUH, trainees and volunteers

		Staff experience: The extent to which the option ensures a good staff experience, with support for staff and volunteers, in a fit-for-purpose environment to reduce sickness and absence rates. NB: staff includes system partners working at NUH, trainees and volunteers
	8. Capacity	**Capacity:** The extent to which this option is right sized and provides sufficient system-wide capacity to meet expected demand for acute and specialist services.
		Flexibility: The extent to which this option is future-proofed and provides flexibility with the potential to change in response to changing healthcare needs.
	9. Fit-for-purpose estate	**Estate:** The extent to which this option reduces backlog maintenance and mitigates critical infrastructure risks. **Adjacencies:** The extent to which this option improves clinical adjacencies.
		Complexity of build: How challenging is the build of the option, considering the impact on existing services and the local community. This is the mix of new build and redevelopment and the associated delivery risks.
		Time to build: Length of time taken to build the option
	10.Digital	**Digital:** The extent to which this option increases resilience of the NUH data infrastructure and increases opportunities for hosting data infrastructure of other system partners.
	11. Research and innovation	**Research and innovation**: The extent to which this option supports innovation and research and development.

Figure 94 Non-financial desirable criteria

6.4.3.2 *Financial desirable criteria*

We also used a set of financial desirable criteria to assess the short list of options, as shown in Figure 95.

System outcomes framework domain	Investment objective	Desirable criteria description
		FINANCIAL
Effective resource utilisation	Efficiencies	**Benefit-cost ratio:** Analysis to determine whether the benefits of the investment outweigh the costs and therefore would deliver value for money (value of benefits/ value of costs).
	Anchor institution	**Net present social value (NPSV):** Standard calculation of development cost, plus risk, less benefits to Nottingham University Hospitals NHS Trust and the wider economy, over the life of the asset. Includes efficiency benefits, financial risks and phasing of capital costs.

Figure 95 Financial desirable criteria

6.4.3.3 *Assessment against the non-financial desirable criteria*

We considered the four short listed options, relative to one another, against twenty non-financial desirable criteria. Undertaking this rigorous process provided a clear rationale as to the relative benefits of each option.

Focus was placed on understanding areas that differentiated between options, with detailed design discussions to be undertaken in the development of a subsequent stage of the programme (i.e. within the outline business case for capital).

The detailed assessment of the options against the desirable criteria received input from a substantial number of sources representing both clinical and operational colleagues. The full details can be found in Appendix 19. Key conclusions drawn through this process were that:

- both of the 'do something' options (options 7 and 13) have clear advantages over the BAU / 'do minimum' against all criteria except access to services
- option 13 is expected to provide clinical benefits over option 7 – including quality, safety and experience, based on a greater separation of elective and emergency activity, co-location of emergency and emergency cancer and consolidation of emergency activity
- option 7 has a number of estates advantages over option 13. This is primarily driven by greater flexibility at QMC as there is slightly more space available
- there are a number of areas to be explored further as the options are developed for the capital business cases, including helipad provision, car parking and reduction in backlog maintenance.

6.4.3.4 Assessment against the financial desirable criteria

The assessment against the financial desirable criteria provided a detailed review of the economic costs and benefits of the four shortlisted options. The key aim of the financial assessment was to determine the incremental economic value offered by each short listed option. This was principally through reviewing:

- **efficiencies:** this was an assessment to determine whether the benefits of the investment outweigh the costs and therefore would deliver value for money through comparison of each option using benefit-cost ratios (BCRs).
- **anchor institution:** this was a review of the net present social value (NPSV) of each option to determine which option offered the greatest overall benefit across the programme lifecycle.

The financial analysis carried out at the time of the options appraisal, summarised in Figure 96, provides a comparison between the overall capital costs of the options. Full details can be found in Appendix 20.

	Business as usual	Do minimum	Option 7	Option 13
Capital cost (£m)	601	1,034	1,198	1,295
Clinical support services estimate (£m)	0	0	50	50
TOTAL VALUE (£m)	601	1,034	1,248	1, 345

Figure 96 Summary table of capital costs for each option[132]

Assumptions and outputs were shared as part of an iterative review process and have been tested and modified accordingly following each review. Outputs were reviewed by the Finance, Estates and Activity Advisory Group (FEAAG), ICS finance directors, the CCG Finance and Resources Committee and Tomorrow's NUH Programme Board to ensure a robust process of challenge, whilst also ensuring visibility and transparency of planning assumptions.

Key conclusions drawn at the time of the options analysis are summarised in Figure 97 which shows the assessment of options against the financial desirable criteria. The evidence that supports the assessment made against the financial criteria can be found in Appendix 20.

Benefits have been assessed in terms of whether they would be cash releasing or non-cash releasing. Cash-releasing benefits are relative to the BAU position. The do minimum option is centred around refurbishment and essential building, and the benefits of these are yet to be quantified by the Tomorrow's NUH estates workstream.

[132] Options 7 and 13 do not include the business as usual capital cost which goes on up until the build year

The net present social value (NPSV) compares all of the financial and economic costs and benefits, associated with each option, over a long time horizon (60 years), and expresses these as a single metric to support a comparison of options. An option which generates a higher NPSV compared to others is deemed to deliver a greater degree of overall value to society.

Tomorrow's NUH investment objectives	Financial desirable criteria	Business as usual	Do minimum	Option 7	Option 13
Efficiencies	Benefit-cost ratio (BCR)[133]	-	-	3.17	3.55
	Option 13 is expected to deliver the greatest positive net present value, with little difference between options 7 and 13.				
Anchor Institution	Net present social value (NPSV) (£m)	-	(£530m)	£943m	£1047m
	Option 13 offers greatest overall benefit when discounted, with little difference between options 7 and 13.				

Figure 97 Summary table of the assessment against the financial desirable criteria

The financial analysis in Figure and Figure 97 was revisited later in the process to account for the feedback from the clinical senate and clinical prioritisation. The key messages are aligned with the final analysis which is included in section 7.

6.4.4 Clinical senate review of cancer

In parallel to the options evaluation process, we acted on recommendations from the Clinical Senate in April 2021 to provide further detail for the emergency care, cancer care and maternity clinical models of care. In the case of the emergency and maternity clinical models of care, we were able to provide assurances that did not have any impact to the design principles or the shortlist of options. Further work to develop the cancer model of care suggested a need to review the conclusion of the options appraisal based on the adjacency requirements of haematology-oncology with medical specialties.

The general direction of travel for much of our service reconfiguration is based on consolidation of services to improve pathways and deliver better outcomes for patients. In cancer care, our focus is on holistic services and early diagnosis. To deliver this ambition, our two shortlisted options (in addition to business as usual and do minimum) either consolidated all cancer services (option 7) or consolidated emergency with other acute medical specialties, and elective cancer with elective services (option 13).

[133] Note that this BCR comprises, for each option, the total benefits over a 60 year period, expressed as a ratio of the total costs and investments of the preferred option, all discounted and in real terms, incremental to the BAU. This definition is in line with the definition included in the regulator CIA model,

6.4.4.1 *Key messages from cancer deep dive*

The deep dive review into cancer focused on non-surgical cancer, specifically haematology and oncology. The findings within the review mean that **option 7 was agreed to be not viable and was discounted from the shortlist of options**. This process was ratified by the Programme and Partnership Board in October 2022.

There were two clear reasons which provide the rationale behind this:

1. Clinicians did not consider it clinically viable to separate elective haematology inpatients from acute medical specialty care:
    a. These patients have a tendency to get very sick, very quickly. Without on-site presence of other acute medical specialties (e.g. respiratory, neurology, gastro) it was not deemed to be clinically safe to deliver elective haematology separate from the rest of emergency care.
    b. In order to maintain Joint Accreditation Committee ISCT-Europe & EBMT (JACIE) accreditation, NUH must deliver bone marrow transplants alongside a number of acute medical specialties. Without JACIE accreditation, NUH cannot apply for chimeric antigen receptor T-cell therapy accreditation which is recognised as a treatment strategy of great promise to improve outcomes for cancer patients[134]. It is part of the NHS's plans to deliver cutting edge treatment and is an ambition set out in the NHS long term plan[135].

2. It was not considered clinically viable to maintain elective oncology inpatient care at City Hospital if all haematology inpatient care was moved to QMC. This would leave oncology on the City Hospital site with elective surgery and some ambulatory cancer services. In order to ensure elective non-surgical oncology inpatients have access to specialist input and sufficient out of hours cover, it was agreed that all oncology inpatient care should also be consolidated at QMC along with haematology inpatients and the rest of the acute medical specialties, which is not the case for option 7 (see Appendix 21)

6.4.4.2 *Benefits of the proposed cancer model of care*

The proposed model for cancer care articulates a series of benefits that address the issues described within the case for change. These benefits are summarised in Figure 98.

Category	Benefit	
Decreasing unwarranted variation, quality, safety and outcomes for cancer patients	• All known and unknown cancer non-elective admissions would have on-site access to specialist oncology/ haematology consultant input as well as all acute medical and surgical specialties • Example – spinal cord compression patients would now have on-site access to spinal surgical teams • Inpatient oncology and haematology patients would have access to comprehensive on-site acute medical cover in the case of unexpected medical events out of hours.	

[134] CART-Cell Therapy: Recent Advances and New Evidence in Multiple Myeloma, Cancers (Basel) 2021

[135] JACIE standards 6.01 ed and CAR-T service specification

	• Cancer patients admitted under other medical specialties would have rapid access to haem/ oncology consultant review which could improve care and reduce unnecessary investigations • Example – emergency malignant haem patients would have immediate access to consultant haem review, previously consultant review only occurred once patient was transferred from QMC to City Hospital. • Paediatric cancer clinicians would have on-site access to adult cancer clinicians for advice and to improve patient transitions between services • Reduction in emergency transfers
Improving patient experience	• Patients treated in fit for purpose setting with quick access to specialist expertise that they require
Improving quality of care and access to cutting edge treatments	• Haematology patients have on-site access to specialist medical care they require following a bone marrow transplant (BMT) • Patients have access to cutting-edge CAR-T therapy to improve the quality of their treatment (JACIE accreditation is a pre-requisite for CAR-T accreditation) • Co-location of specialties would increase collaborative working and offer increased training opportunities in line with clinical oncology curriculum[136]

Figure 98 Benefits for cancer model of care

The previous assessment of the financial and non-financial evidence indicated that option 13 was delivered a greater clinical benefit which is prioritised by the Programme above the estate benefits (i.e. greater flexibility) delivered by option 7. Following further review of the clinical model for the clinical senate, we have discounted option 7. Therefore at this point, option 13 is our preferred, and only, option for consultation.

This was ratified at the Programme and Partnership Board.

6.4.5 Clinical prioritisation of the preferred option

In June 2021, the TNUH Programme was made aware of New Hospital Programme (NHP) requirement for agile schemes. These requirements are arranged into the thirteen themes with specific requirements:

- Shell and core design parameters
- Modern methods of construction
- Net zero
- Repeatable rooms
- Patient flows
- Digital

[136] Royal College of Radiologists Clinical Oncology Curriculum, 2021

- Social outcomes
- Capacity and modelling
- Patient experience and outcomes
- Backlog maintenance
- Cost benchmark and risk assessed
- Workforce
- Programme delivery

Option 13 was originally considered to be within our affordability envelope of circa £1.345bn, funded by the New Hospitals Programme (NHP). NHP advised that meeting these requirements for agile schemes would be essential for all cohorts and that we should where possible include in our plans from the outset (see Appendix 23). On reviewing the capital costs, it became apparent that to achieve these standards, including the required reduction of critical and significant infrastructure backlog, net zero, patient flows, digital and patient experience and outcomes, the capital cost of option 13 would be c£1.7bn which means that option 13 is no longer be affordable.

Whilst Option 13 remains our long-term strategic ambition, we therefore needed to identify an alternative approach that would reduce the capital cost to within our approximate £1.345bn capital envelope.

6.4.5.1 Prioritisation process

In October 2021, our clinicians undertook a prioritisation process to determine the priority clinical changes within Option 13. The process encompassed five steps:

1. Evidence compiled to support prioritisation of the clinical changes
2. Clinicians reviewed evidence and proposed prioritisation using a hierarchy approach
3. TNUH programme board reviewed proposed prioritisation and make recommendation
4. Strategic oversight group reviewed proposed prioritisation
5. East Midlands Clinical Senate notified of prioritisation impact on clinical configuration

The rationale and evidence supporting the clinical changes within option 13 were reviewed in a meeting between the CCG and NUH senior leaders on 5th November 2021. This session concluded that there was a strong evidence base and rationale for the revised proposed preferred way forwards.

The system stakeholders who had been involved in original options appraisal process were then engaged with clinical changes within option 13, in order to be satisfied that the proposed clinical configuration represented the right configuration for the system moving forwards. This was undertaken at an extended meeting of the Strategic Oversight Group on 21st February 2022, in which system stakeholders confirmed their support for the proposed model and endorsed the commencement of a period of pre-consultation engagement with patients and the public. The proposals were also presented to the senate in July 2022 who reviewed the proposals in August 2022. Senate recommendations at every stage of their involvement throughout the programme are captured in section 10.2.

6.4.5.2 Clinical prioritisation principles

Clinicians developed a hierarchy of clinical criteria using the prioritisation principles:

1. **Quality and safety:** ensuring that the clinical model of care is safe and making the necessary quality improvements
2. **Standards and dependencies:** meeting essential standards for services and ensure the necessary dependencies are in place
3. **Capacity:** providing the necessary capacity to meet the current and future demand for services
4. **Adjacencies:** improving the adjacencies between services

The clinicians aimed to identify a configuration offering the optimal level of clinical transformation, whilst maintaining high quality, sustainable and patient focussed services.

Five different approaches were identified that captured possible permutations based on the four main clinical cluster areas. Figure 99 below illustrates the level of service consolidation achieved for each clinical area. Clinicians agreed that "option B" was the preferred approach, as this delivered improvements in all clinical areas and offered the optimal level of transformation. This proposed option for consultation has been labelled option 13a.

Appendix 24 includes the complete analysis undertaken.

Figure 99 Clinical prioritisation options analysis

	Family Care	Emergency	Cancer	Elective	Impact of clinical prioritisation principles
A		All services in scope	All services in scope	All services in scope	Discounted as not delivering any consolidation of women's and children's services
B	All services in scope	Limited specs.[137]	All services in scope	All services in scope	Preferred as the only options which delivers improvements in all clinical areas
C	All services in scope		All services in scope	All services in scope	Discount as not delivering an improvements in emergency activity
D	All services in scope	Few specs.[138]		All services in scope	Discount due to dependency between haematology and oncology and emergency specialties

[137] Limited specialties include respiratory and burns and emergency plastics

[138] These were not defined in detail at the time. The process noted that there was an option to take fewer / more.

E	All services in scope	Most specs.			Discount as only meeting priorities of one clinical area fully

Option C was discounted for not delivering emergency activity. Co-locating more elective at City Hospital without taking any emergency/respiratory off the site will not support the improvements in elective performance given the emergency demand pressure on the site.

The primary reason for discounting option D and E relates to haematology and oncology. Care for these inpatients has a critical dependency with other specialist medical services that will be at the QMC as part of the emergency pathway. This is one of the main drivers for moving these services in order to provide safe clinical care for non-surgical cancer inpatients who have a tendency to get very sick, very quickly, as it will provide the ability for rapid access to specialist review as needed.

Option A is discounted because it fails to deliver the model for women's, children's and family care services. Viewed through the critical success factors, we have eliminated potential options that are unlikely to improve workforce efficiency. In option A we do not consolidate the duplicated maternity and neonates services and therefore fail to improve workforce efficiency.

6.4.5.3 Clinical prioritisation options

We reviewed the evidence base for option 13 and the key drivers for change. Clinicians identified the key areas in Figure 100 to assess different configuration options for clinical changes. By aligning to our original case for change, we maintained a thread between the key issues and potential adjustments to option 13, underlining that option 13 remains our long-term strategic vision.

Figure 100 Clinical prioritisation principles

Key area	Rationale
Priority is to address issues in each of the clinical areas, where possible	• There is a case for change articulated for our clinical services as shown in 4.3 • Clinicians agreed that the evidence does not imply a clear case for prioritising one clinical area above another • Therefore, maximising the return on investment by delivering the most clinical transformation across service areas was preferred
The consolidation and co-location of services for women, children and families has been a high priority for the	• There is a strong case for change for consolidation of women's and children's services, particularly in reference to women and babies being sent out of area, as shown in section 4.3.3 • There are limited options for only consolidating some services for women, children and families given the small number of specialties involved in moving from City Hospital to join the other specialties at QMC

organisation for many years	• This has been a priority for Nottingham University Hospitals NHS Trust (NUH) for many years, to address the issues of duplication of scare workforce across two sites and poor adjacencies with other key services e.g. paediatrics, as outlined in section 4.3.3
Elective capacity must be protected to prevent the surge of Emergency activity into Elective beds	• Consolidating elective activity at City Hospital enables NUH to better protect its planned services for patients by ringfencing elective beds • Elective activity at City Hospital has therefore become a fixed point
There is a dependency between haematology and oncology, and emergency specialties	• Haematology and oncology inpatients have a critical dependency with other acute medical specialties, which is one of the main drivers for moving these services to QMC • Currently, the City Hospital medical specialties, with in-reach, from QMC specialties provides sufficient cover and support • Haematology and oncology could not remain at City Hospital without the other acute medical specialties and therefore any option which moved these other specialties first would not be clinically acceptable • Locating the services at QMC would enable future developments e.g. CAR-T as well as provide better opportunities for training and accreditation

Elective capacity is scheduled to move to the City Hospital site in Spring/Summer 2023 in response to the increases in waiting lists following the Covid-19 pandemic in 2020-21. It was agreed with the Health Overview and Scrutiny Committee that this could be done without formal consultation. Therefore, consideration of elective services as part of the clinical prioritisation is no longer relevant.

6.4.5.4 Assessing the potential split of emergency care services

As part of option 13a, acute respiratory, burns and acute plastics would move to the QMC site. Cardiology & cardiac surgery, urology renal medicine, transplant and infectious diseases would remain on the City Hospital site until further capital is available to fully deliver option 13.

This configuration is based on delivering the case for change and optimising the clinical model of care for burns and acute plastics and respiratory, as set-out in section 5.3. A key driver in the consolidation of emergency care was to reduce the amount of inter-hospital transfer and respiratory activity accounts for 27% of the total. Overall, option 13a makes significant improvements on the current number of transfers. By consolidating burns and acute plastics and respiratory at QMC, there would be a potential reduction of 1119 transfers required per year which is approximately a 31% reduction.

Under option 13a, we would retain emergency inpatient activity at City Hospital. The small cohort of acute specialities summarised in Figure 101 have a minimum critical mass required to ensure they remain functional, separate from the majority of acute medical activity. These specialties are either interdependent of one another, related to another co-located service or have well established admission pathways which has underpinned our proposal to maintain them at City Hospital. Further detail is available in Appendix 25 which summarises the deep dive analysis.

Figure 101 Rationale for emergency care services remaining at City Hospital

Specialty area	Rationale
Urology	• Emergency urology is currently a joint service with Sherwood Forest Hospitals (SFH) and takes emergency admissions directly at City Hospital, via QMC emergency department (ED) and via SFH ED • There are 151 transfers from QMC to City Hospital (out of a total 3,818, c. 4%) • Retaining urology at City Hospital with a single point of access would mitigate the need to manage multiple inpatient units (i.e. out of hours non-elective (NEL) at QMC, elective (EL) at City Hospital and EL at SFH) • The admission pathway to the site would be re-aligned with the wider admission pathways for City Hospital • It is beneficial for the urology service to be co-located with renal and transplant • There is ongoing work on pathways to increase the volume of work delivered in the community related to catheter management, thereby increasing capability in the community and reducing the demand on the inpatient urology service
Renal	• The majority of emergency patients within renal and transplant are known patients, who are directly admitted to City Hospital rather than being admitted via ED • The national service specification for renal describes a dependency with medical cover for emergencies. Aligning renal and transplant to other medical specialties at City would enable this. • Renal and transplant have critical dependencies, which means they should not be separated • It is beneficial for the renal and transplant service to be co-located with urology • Renal services currently provide in-reach to QMC, including a renal consultant and AKI nurse

	• There would be a need to develop a model for dialysing haematology patients at QMC once haematology moves to City Hospital (a small number of patients per month)
Cardiology	• Cardiology currently have an effective in-reach model at QMC to provide cardiology input to patients where needed • Cardiology is a core medical specialty and optimally should be co-located with ED and other specialties, however there are effective protocols in place to direct many patients straight to City Hospital for admission • It is the 2nd biggest specialty by volume for transfers from QMC to City Hospital (842/3,818 – 22%) behind respiratory. Note this also includes transfers for cardiac surgery as not possible to split out • Retaining cardiology on site would enable a critical mass of medical specialties/beds to help support the site • Cardiology and cardiac surgery have a critical dependency and therefore deemed necessary to stay together
Cardiac surgery	• Cardiac surgery is a regional service located at City Hospital, in a purpose built centre "Trent Cardiac" which provides the necessary inpatient, intervention suites, theatres and critical care capacity • The emergency volume is relatively small in proportion compared to its planned activities. Therefore, locating on the City Hospital site aligns to the elective centre • The current purpose built centre enables the ring fencing of beds which has ensured this service has continued to operate significantly during Covid • Cardiac surgery provide an in-reach service to QMC to support the major trauma centre • Cardiac surgery and cardiology have a critical dependency and therefore deemed necessary to stay together • It is beneficial for the cardiac surgery service to be co-located with thoracic surgery
Thoracic surgery	• Largely an elective service, the emergency admissions are small in volume, therefore aligning to elective hospital is helpful • Only 24 patients were transferred to City Hospital via QMC as an emergency patient meaning most emergency patients currently make it to the appropriate site initially • It is beneficial for the thoracic surgery service to be co-located with cardiac surgery, specialist respiratory and cancer

	• There is an existing thoracic surgery in-reach at QMC to support the major trauma pathway
Infectious diseases	• It is beneficial for the infectious disease service to be co-located with sexual health i.e. HIV and specialist respiratory i.e. tuberculosis • It is a largely peripatetic service, with patients at both sites having a complex infection that would require specialist management. This would be provided by either (i) acute physicians with microbiology/infection training or (ii) via consultant in-reach from infectious disease consultants, which is already in place
Specialist respiratory	• Most emergency admissions for these specialist areas are either semi planned admissions and known patients who are directly admitted via City Hospital rather than via the QMC ED • The adult cystic fibrosis service is provided from a purpose built cystic fibrosis centre at City Hospital • Lung cancer is a significant part of the service and aligning to other cancer pathways at City Hospital is helpful • It is beneficial for the specialist respiratory service to be co-located with thoracic surgery • We have a large consultant workforce and would be able to use job planning to manage the split from acute respiratory

The clinical prioritisation approach developed by CAG and endorsed via the Strategic Oversight Group reset our option for consultation to option 13a. This analysis is based on option 13 as our long-term strategic vision, at such time as there may be capital funding available to realise this ambition. The case for change underpinned the initial model of care and options analysis work. We have carried through the key principles from this work to ensure that we are meeting the health needs of our population and delivering a clinical model for the future. Option 13a allows us to respond to these issues and provides the flexibility to extend the model at the next available opportunity. The difference between option 13 and option 13a is summarised in Figure 102 below:

Site	Option 13	Option 13A
QMC	**Emergency** • Existing QMC emergency care including: A&E, major trauma and current QMC medical & surgical admitting specialties • Emergency/acute provision currently at City Hospital: Respiratory, Thoracics, Cardiology, Cardiac Surgery, Renal & Transplant, Urology, Infectious diseases, burns & emergency plastics **Family care** • Paediatrics, Maternity/Obstetrics, Neonates, Gynaecology, fertility **Cancer** • Non surgical cancer inpatients (Haematology & Oncology), Radiotherapy & Systemic Anti-Cancer Therapy (SACT), outpatients **Elective** • Eyes, Ears, Nose & Throat (EENT), Spines, Neurosurgery, Vascular	**Emergency** • Existing QMC emergency care including: A&E, major trauma and current QMC medical & surgical admitting specialties • Emergency/acute provision currently at City Hospital: Respiratory, burns & emergency plastics **Family care** • Paediatrics, Maternity/Obstetrics, Neonates, Gynaecology, fertility **Cancer** • Non surgical cancer inpatients (Haematology & Oncology), Radiotherapy & SACT, outpatients **Elective** • Eyes, Ears, Nose & Throat (EENT), Spines, Neurosurgery, Vascular
City Hospital	**Elective** • Existing City Hospital elective care including: Orthopaedics, Urology, Breast, Plastics, Thoracics • Elective provision currently at QMC: Colorectal, HPB, intestinal failure **Cancer** • Oncology – radiotherapy, SACT and Outpatients	**Emergency** (only difference between option 13 and 13a) • Emergency/acute provision currently at City Hospital: Thoracics, Cardiology, Cardiac Surgery, Renal & Transplant, Urology, Infectious diseases **Elective** • Existing City Hospital elective care including: Orthopaedics, Urology, Breast, Plastics, Thoracics • Elective provision currently at QMC:Colorectal, HPB, intestinal failure **Cancer** • Oncology – radiotherapy, SACT and Outpatients

6.4.5.5 Impact to clinical model of care

Under option 13a, City Hospital would provide the majority of elective surgical care (as per option 13) alongside some specialist non-elective care for cardiology, renal, thoracics, urology and infectious diseases. QMC would provide an overwhelming majority of emergency care, aligned with the earlier clinical model of care and case for change.

The updated emergency model of care at City Hospital is reflected in Figure 103, the pathway described in section 5.3 for emergency care services at QMC has not been affected.

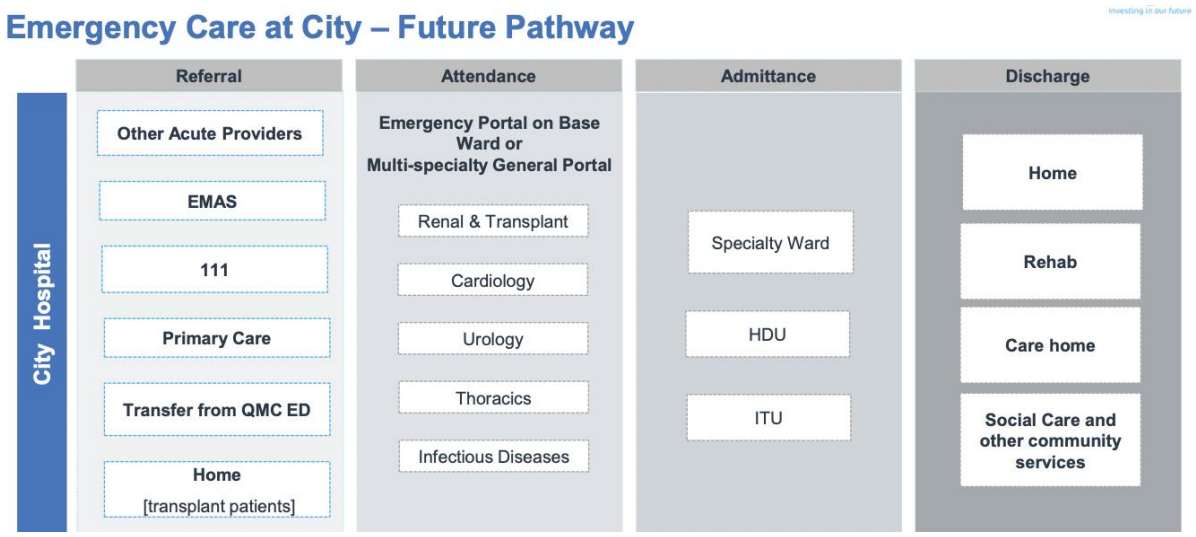


Figure 103 Emergency model of care – City Hospital

6.4.5.6 Benefits of option 13a

The proposed model for emergency care within option 13a articulates a series of benefits that address the issues described within the case for change. These benefits are summarised in Figure 104.

Category	Benefit
Efficient emergency admissions	• Increased safety and efficiency at City Hospital from a reduced total number of admission portals • Ensure patients have rapid access to specialist emergency care – reducing steps in pathway • Increased availability of admission alternatives for patients contributing to overall reduction in bed pressures allowing patients that require admission to be admitted more quickly
Improved patient outcomes	• Reduce steps in a patient journey with direct admission to City Hospital where appropriate, ensuring patients are seen in the right place first time to streamline their pathway and experience • Continued provision of 24/7 emergency support for patients on both campuses ensuring rapid access to medical and surgical cover when required • Patients treated in fit for purpose setting with quick access to specialist expertise • Reduce transfers between sites

Figure 104 Benefits for emergency in option 13a

6.4.5.7 Option 13a in relation to the Long List

In order to ensure that option 13a is the only viable option for the programme at this point, a review of the long list of options was undertaken by the TNUH Programme Team. The purpose of the review was to identify if there are any further configurations which split the

emergency cluster, which were evaluated against the CSFs to determine if any would have progressed through to the short list.

There are a number of options on the long list which failed the Deliverability CSF in phase due to either:

a) Requiring a new site (1a)

b) Utilising Ropewalk House (1c)

A split of the emergency cluster did not reintroduce any of these options. Remaining options which make use of the QMC and/or City Hospital have been reviewed and evaluated against the CSFs which resulted in all of them being discounted due to one or more of the following reasons:

1. Proposing to locate adult emergency care and women's, children's and family care at the City Hospital. This is not deliverable by the target year of opening due to the significant decant and demolition which would be required.
2. Moving ED away from the QMC fails the strategic fit test as it is a fixed point in the ICS Clinical and Community Services Strategy, and would impact on the delivery of local, regional and national priorities
3. Failing the care quality and patient experience test as they do not improve service quality and safety.
4. Locating elective services on a separate site from elective cancer given the risk of not delivering improvements in quality, safety and patient experience
5. Uses current sites but cannot be delivered within the affordability envelope.

The outcome of the evaluation of each option is included as Appendix 26. The review of then long list concluded that none of the additional long list options pass the CSFs in order to be considered on the short list. Therefore this exercise consolidates option 13a as the preferred option for the programme.

This was reviewed and endorsed by the Programme and Partnership Board in November 2022, and by the ICB in January 2023.

6.4.5.8 Options Long-List Review

During May 2023 the Government announced that a number of schemes which were originally due to be constructed towards the end of the decade (known as Cohort 4) would now be completed past 2030, Tomorrow's NUH was one of these Cohort 4 schemes.

In light of the revised construction timeline, and the potential opportunities presented by the Bell Fruits land acquisition and the possibly vacated medical school, the Programme has undertaken a further desk-top review of the options long list against the critical success factors (CSFs). This is to provide assurance that the options short list and resultant preferred way forward would not change as a consequence of the Government announcement and the land developments now and in the future.

This options long-list review took into account the revised timescales for completing the programme and therefore all options originally excluded due to failing the phase 1 CSF of deliverability were reassessed.

All of the options which failed the first phase "Deliverability" CSF also fail subsequent second or third phase CSFs, therefore none are added to the short-list despite the additional flexibility given with more time to deliver the programme. Appendix 41 shows the detailed analysis undertaken.

6.5 Other services at Ropewalk House

Ropewalk house was included in the initial longlist exercise for the potential to accommodate one of the emergency, elective, cancer or women's children's and family care service groupings. We discounted it from the shortlist because it is too small and unable to flex to meet demand and enable digital transformation.

The CSF analysis did not assess Ropewalk from a clinical perspective. Our model of care for ambulatory services focused on improving access and delivering new, digitally enabled models of care. This includes a higher proportion of one stop shop clinics to the site where treatment will happen, a shift to move face-to-face activity closer to where patients live and making care more accessible with technology. Applying this model to our existing services at Ropewalk indicates that it is not an idea long-term fit:

- Audiology: there are clear clinical benefits to co-location with ENT and paediatrics on the QMC site. There are also opportunities for part of the service to be delivered in the community where it is clinically suitable[139]
- Implant service: as a regional service, providing implants from QMC would mean the service is more accessible for people across Nottingham and Nottinghamshire. There is also a need for adjacency with ear, nose and throat (ENT) at QMC to improve the quality of the service.
- Breast screening: is currently offered at multiple locations including the breast institute at City Hospital and through the mobile screening services. This service would continue to be provided from these locations with an alternative city centre location for the Ropewalk House service.
- Diabetic eye screening: some patients accessing this service have mobility and/or additional medical needs which would be better provided for at the QMC campus with our other diabetes and eye services. Most routine screening would be offered at an alternative city centre location.

Further information regarding the current service provision at Ropewalk House and the impact on travel and access can be viewed at Appendix 17. As part of pre-consultation engagement with stakeholders, we posed a specific question to patients and the public about the proposals for Ropewalk House. We found that 69% of people supported our overall proposals for outpatients, which includes Ropewalk House. Of people who accessed outpatient care, 58% suggested Ropewalk House activity could move into the community, 26% felt that they would prefer if they moved to City Hospital and 16% preferred QMC. Of the key populations, most groups had a preference for the services to be moved into the community, apart from the ethnic community cohort, where 56.3% would prefer services to be at City Hospital. Further engagement with patients who use Ropewalk House is proposed

[139] Commissioning Services for People with Hearing Loss, NHSE 2016

in early 2023 to further explore where patients would prefer to receive their outpatient care.

The current thinking is that all outpatient activity is removed from Ropewalk House and is instead provided either within the community, at QMC or at City Hospital alongside other relevant services. This will be further tested in the consultation.

7 Options for consultation

This chapter describes in more detail the impact of the options we are proposing for public consultation. We are proposing option 13a for public consultation as this is the only deliverable option that we have identified that delivers against our critical success factors. We expect option 13a to bring a wide range of positive impacts and benefits over the long-term. The wider impacts of the option have been considered through an integrated impact assessment which highlights how the option affects clinical considerations, access and transport, other providers, the environment and inequalities. In addition, there are a number of enablers required to deliver option 13a, including digital, workforce and estates.

A crucial element of our proposed clinical model is the expansion of care outside of hospitals to address the growing health needs in our population. Our clinical model of care establishes an integrated care approach based on the Integrated Care System's (ICS) Clinical Community Services Strategy (CCSS). Future care strategies are defined in terms of urgency and location, so that acute hospital provision is integrated with neighbourhood and home treatments.

This would be underpinned by a population health management approach which would allow us to look across the system at how services are provided and identify opportunities to add value, improve outcomes and eliminate duplication and reduce costs.

Our future proposal for hospital care would provide greater consolidation of services where possible, to improve outcomes for patients, meet quality standards and address some of the severe workforce pressures we face. We propose a greater consolidation of emergency activity, addressing particularly those specialties where there are high numbers of patient transfers and interdependent services are not available; co-location of all women's and children's services to deliver clinical quality standards for maternity care, reduce the reliance on high-risk patient transfers and create a cohesive single department that is an attractive prospect for staff; facilitate a multi-disciplinary model for cancer care by co-locating oncology and haematology with emergency services and streamlining access to treatment and diagnostics at City Hospital for elective care; providing more one stop shop clinics, virtual consultations and care closer to home within our outpatient services so that we can make every contact count; retaining the elective site split for non-complex surgery while delivering the more complex surgical work at QMC, where there is access to emergency medical input.

The consolidation of services within new estate that improves adjacencies between departments and a greater use of digital infrastructure would also improve access for people with long term conditions, disabilities and mobility issues. Digital exclusion is important and consideration is being given to alternate routes of public transport for populations where digital platforms may not be an appropriate solution to mitigate poor physical accessibility, and we are further considering digital exclusion within the NUH digital strategy.

Assessment of the social, economic and environmental impact of the programme was undertaken to understand and limit negative impacts of the programme on the environment. The carbon emissions associated with travel will increase for all services under all options due to travel distances being longer.

Option 13a provides a significant improvement in NUH's income and expenditure compared to business as usual (BAU). This is driven by the benefits, revised asset lives for business as usual and option 13a capital. The option is also affordable from a system perspective, helping to support a greater allocation of growth funding to other priorities.

We are proposing option 13a for further public consultation. Our pre-consultation engagement provides a strong foundation for our proposals, which we have refined through our clinically led options appraisal process. This option provides greater consolidation of hospital services, supported by integrated care and a population health management approach.

The implications of the proposed option have been considered through an integrated impact assessment which highlights how the option affects clinical considerations, access and transport, other providers, the environment and inequalities. In addition, there are a number of enablers required to deliver option 13a, which have been considered and outlined in the following chapter including digital, workforce and estates.

7.1 Option for consultation

We have tested our proposals in two phases of pre-consultation engagement to ensure that we have understood, and responded to, stakeholder views. In March 2022, patients and the public overwhelmingly agreed with our proposed clinical model: 78% either strongly or somewhat supported the overall proposal. The majority agreed it would be beneficial to have similar services in one location, even if this meant travelling further for the right care, first time and in the right setting. There were also concerns raised about the impact on patient choice and access, although there was positive feedback on options to receive care in the community and 69% of respondents strongly/somewhat supported the proposals relating to outpatient services.

7.2 Integrated model of care

The provision of acute hospital services is central to our proposed option, supported by wraparound out of hospital services which will address the growing health needs in our population. The case for change indicated that our current clinical model is ill-equipped to meet the needs of an ageing population, the proliferation of long-term conditions and health inequalities across Nottingham and Nottinghamshire. We would transform services to focus on improving the health of local people, identification and supported management of at-risk groups. This would be delivered by home-based care and other community outreach, bringing services closer to patients' homes.

Our clinical model would increase integration between services based on the ICS Clinical Community Services Strategy (CCSS). Future care strategies are defined in terms of urgency and location, so that acute hospital provision is integrated with neighbourhood and home treatments. New models of care, supported by technology and workforce, would enable us to increase the range of services provided to patients in their home. This includes expanding rapid response and single point of access, personalised care plans, and virtual services across the pathway.

This would be underpinned by a population health management approach which would allow us to look across the system at how services are provided and identify opportunities to add value, improve outcomes, eliminate duplication and reduce costs. Our approach would utilise a wide range of experts to understand our population's current needs, activity,

cost and outcomes. This would enable the delivery of standardised, evidence-based pathway redesign, targeted relative to the level of need.

Our proposed option, and the longer-term vision for clinical care in Nottingham and Nottinghamshire, would provide better care within community settings and closer to home, aligned to the requirements of the NHS Long Term Plan.

7.3 Hospital care

Our proposal for hospital care is focused on the consolidation of clinical services, where appropriate, to improve outcomes for patients, meet quality standards and address some of the severe workforce pressures we face. The options appraisal identified option 13 as the long-term vision, representing the maximum level of beneficial service consolidation. We are consulting on option 13a, which is the only implementable option which met the critical success factors in the context of the case for change and clinical model of care. The proposed option for consultation is summarised in Figure 104.

Our proposed option enables the consolidation of related emergency activity. At QMC, emergency care would be co-located with acute medical specialties and other interdependent services, enabling a reduction in emergency transfers which have an adverse impact on patient outcomes. We would also expand our Same Day Emergency Care (SDEC) facilities, so that patients with conditions that can be quickly assessed, diagnosed and treated are able to be discharged home the same day, without having to be admitted to a hospital ward.

Our proposal means we would also maintain a critical mass of emergency work at City Hospital for specialties that have well established pathways or interdependencies with other services on the site. This would limit the need for transfers to access acute care at QMC. There would be a separation between the emergency and elective areas in the hospital to mitigate the risk of cancellations to elective work. Providing emergency care services from City Hospital would also bolster the out-of-hours services to our elective patients. We would have resident on-call and enhanced post-operative care available across both sites.

The majority of elective care would be consolidated at the City Hospital site in a dedicated elective care centre of excellence which would allow us to focus on waiting times and length of stay improvements. Dedicated beds, theatres and critical care facilities at the City Hospital would ensure that planned operations would no longer be affected by emergency pressures and delivered in the most efficient way.

For some of our most complex elective surgical patients, it would be best to treat them at QMC where they would have access to specialist input from acute medical specialties. Elective services would be delivered from a physically separate part of the hospital to mitigate the impact from surges in demand, while maintaining the benefits of joint-site working with clinical specialists.

Our vision for centralised services incorporates services for women, children and families. These are currently split and unable to meet national quality standards. Our proposal would enabler better outcomes and a more resilient model for the future by providing fit-for-purpose family care hospital and a consolidated workforce at QMC, reducing the number of transfers. Facilities in the new hospital would provide opportunities for midwife-led births,

with sanctuary rooms and birthing pools alongside the consultant-led labour suite to ensure choice for women when it comes to the kind of birth [140]they would like. New-born babies who may require rapid surgical input would also benefit from co-location with paediatric surgery. By providing our family care services from the same site as adult emergency care services, we would be able to further improve the quality of our birthing services.

For our cancer services, we are proposing a model that would align us to the national direction of travel in cancer care and streamline access to diagnostics, increasing the chance of survival for our patients. In future, most cancer patients would go to City Hospital for diagnosis, surgery and outpatient treatments, including chemotherapy and radiotherapy. They would also continue to benefit from other services currently based at City Hospital, including the Maggie's Centre and end of life care. However, our cancer inpatient beds would be based at QMC. Non-surgical cancer inpatients are some of the most unwell patients that we care for. Locating oncology and haematology inpatient services at the QMC would ensure quick access to the emergency specialist and medical services they may also require as part of a multi-disciplinary model.

Access to outpatient and ancillary services (e.g. diagnostics) supports all areas within our clinical model of care. The delivery of our clinical model of care is closely aligned to our integrated care model and we would provide services as close to home where possible. For patients who do attend one of our hospital sites, we would provide more one-stop-shop clinics to ensure that we make every contact count and minimise the impact to their lives. In our proposal, we would no longer deliver any outpatient health services at Ropewalk House. This would enable us to align these services more closely with our proposed care model, focusing on delivering more care in the community, virtual consultations and more one-stop-show clinics. The eventual intention is that Ropewalk House would be sold as the building and its limited access are not suitable for the provision of health care in the 21st century.

As a result of these proposals, we would:

- Improve outcomes by consolidating acute inpatient services with improved clinical adjacencies and patient pathways
- Enhance the patient experience by providing improved healthcare delivery in safer environments
- Give staff an improved working and learning environment
- Improve efficiency in service delivery through an estate which is smaller in size and better planned, through removing duplication.
- Reduce backlog maintenance bringing the estate closer to current and acceptable national guidelines and standards.

Develop new, state-of-the-art, digital hospital infrastructure capable of supporting new models of care. The proposed configuration across the two hospital sites can be seen in Figure 105.

[140] This is consistent with the NHS Patient Choices Framework and fulfils the requirements of the Tests for Service Change proposals. See section 10.4.1.2.

Location	Emergency	Elective	Family	Cancer
QMC	Emergency department and major trauma Emergency cancer admissions and burns unit Emergency surgery including specialties such as upper gastrointestinal (GI), neurosurgery, Acute medical specialties such as, respiratory, stroke	Services delivered from the ear, nose and throat (ENT) building (ENT, ophthalmology, oral surgery, orthodontics etc.) Some planned surgery including vascular, spinal, neuro Outpatients	Maternity and Neonates Paediatrics including paediatric surgery and therapies Children's emergency department Fertility Children and young persons (CYP) cancer unit Regional childhood development centre (CDC) Gynae and gynae surgery	Oncology and haematology (emergency and planned) Radiotherapy Some outpatient systemic anti-cancer therapy (SACT) chemotherapy, day case care and outpatient clinics
City Hospital	Emergency specialties such as cardiology, renal, infectious diseases, specialist respiratory Surgical specialties including thoracics, cardiac surgery, urology	Majority of planned surgery including orthopaedics, endocrine, plastics, skin cancer, upper GI, day case, colorectal, gastro, plastics Outpatients including sexual health, genetics and dialysis		Radiotherapy Some outpatient systemic anti-cancer therapy (SACT) chemotherapy, day case care, outpatient clinics and diagnostics Cancer surgery Palliative inpatient care

Figure 105: Option 13a hospital proposal

7.4 Proposed capital developments

We have planned development of our hospital sites. These developments would improve connectivity across our sites for patients and staff, improving the efficiency and experience for all those who visit and work at our hospitals. The total capital cost for option 13a is £1.345bn and includes the following developments:

QMC[141]

The proposed QMC development proposals are illustrated in Figure 106, including:

- Development of a new women and children's hospital and theatres, critical care and cancer block
- Investment in east block would provide enough capacity for our emergency pathways, and would ensure better clinical adjacencies
- Further space would be freed up in west block, either to support future service moves from City Hospital, or to provide extra capacity at QMC if required

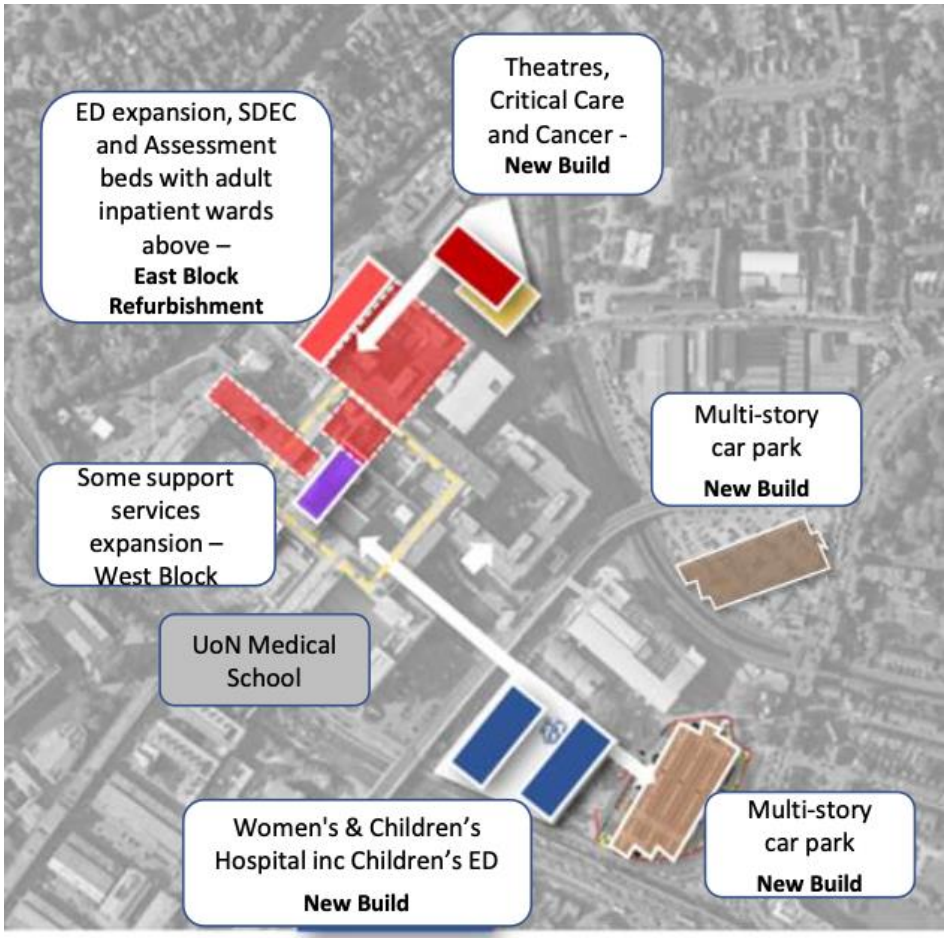


Figure 106: QMC proposed development

[141] Clinical Senate presentation July 21

The proposed capital projects on the QMC site are as follows:

- New family health building
- New cancer building
- New critical care and operating theatres
- Upgrade of East Block in-inpatient facilities
- Upgrade of ED and co-location with Same Day Emergency Centre and assessment facilities
- Targeted investment in pathology, pharmacy, medical equipment, education

City Hospital[3]

The proposed City Hospital development proposals are illustrated in 107 including:

- Our proposals for City Hospital would create clear elective, diagnostics, specialist acute, and ambulatory cancer zones
- The work at City Hospital would largely be refurbishing existing space vacated by services transferring to the QMC

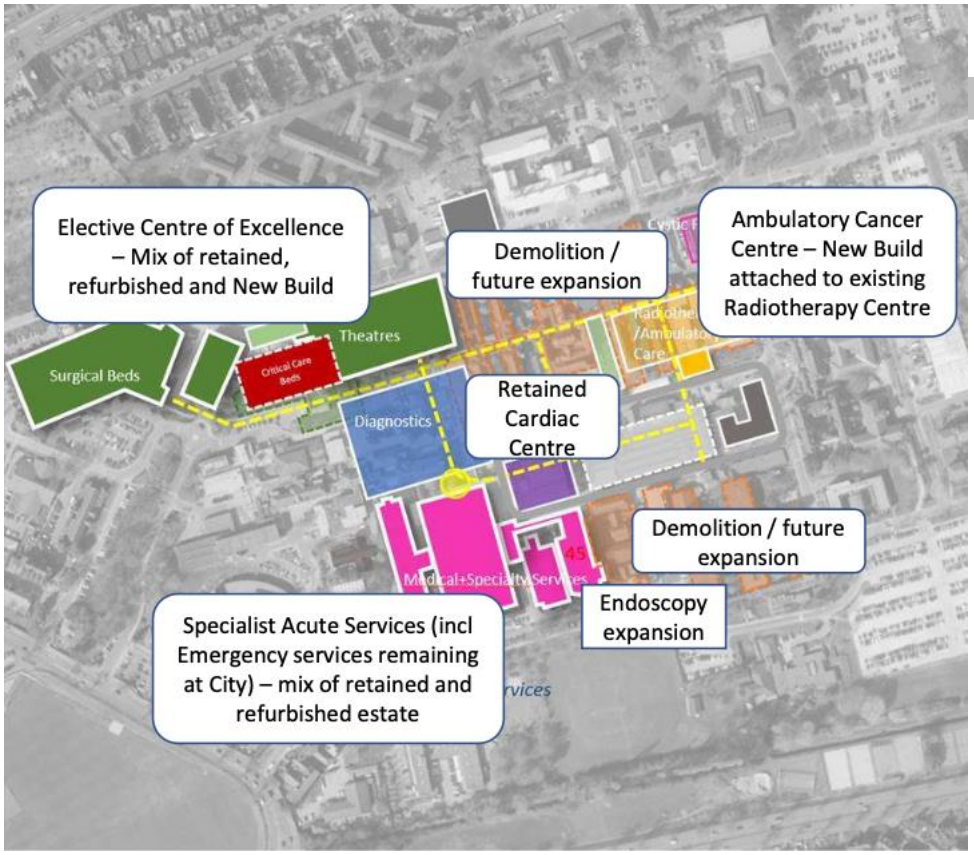


Figure 107: Proposed City Hospital development

The proposed capital projects on the City Hospital site are as follows:

- New critical care and operating theatres
- Creation of elective surgical centre of excellence through targeted upgrades in ward stock
- New ambulatory cancer centre

- Increased endoscopy capacity

7.5 Impact of option

An Integrated Impact Assessment (IIA) (see Appendix 27) was commissioned to evaluate the impact of the preferred option. This IIA was commissioned by the Integrated Care Board (ICB) to support evaluation of the options and, in line with commissioners' public sector equality duty (Equality Act 2010), helps to ensure that genuine consideration is given to equality as part of the decision-making process.

The IIA is an iterative process and the assessment has been updated throughout the planning process by an independent provider to ensure rigor and provide impartiality in relation to the proposed service change options.

The impact assessment considers the impact on the following areas:

- quality and outcomes
- access and travel
- other providers
- sustainability

The impact on disadvantaged, deprived and minority groups was also considered throughout to ensure the impact on inequalities was considered, and is included as an element across the areas listed above. By paying due regard to the findings of the IIA in our decision-making, we will be compliant as commissioners with the *Public Sector Equality Duty* (PSED) under *section 149* of the *Equality Act 2010*, and the duties to reduce inequalities under *s.14T of the National Health Service Act 2006.*

7.5.1 Impact on quality and outcomes

There are numerous positive impacts on quality and outcomes for each of the clinical areas, which have been affirmed by clinicians:

- **Emergency care** – consolidating related emergency care services at QMC would reduce the number of inter-hospital transfers, and improve patient flow which would reduce bed pressure and allow patients to be admitted more quickly. Variation in quality, safety and outcomes for patients requiring emergency care would be reduced as there would be increased access to sub-specialist due to co-location with interdependent specialties at QMC. There would be increased opportunities for emergency physicians to develop new skills and implement new treatments with increased opportunities for collaborative working and cross-specialty learning. The impact of this option is clear in section 5 which illustrates the change from the current to the future model.
- **Women's and children's and family care** – consolidating maternity and neonatal services onto a single site would increase access to specialists and midwives. This would also improve patient experience as women have an enhanced care experience. Consolidation of care onto one site would also allow repatriation of care for very sick babies and co-locate maternity services with paediatric and emergency specialist services. The impact of this option is clear in section 5 which illustrates the change from the current to the future model.

- **Elective care** – separating elective and emergency care would protect elective capacity, reducing cancelled operations thus improving access. This also improves patient experience, as does being treated in a fit for purpose facility with best practice enhanced post-operative recovery in a dedicated unit.
- **Ambulatory care** – providing ambulatory care in accessible locations would ensure every contact counts and minimise impact to patient's lives through one-stop-shop clinics. This would improve access, provide more flexible care and reduce DNA rates. The impact of ambulatory care provision would also support development of integrated care pathways through improved ability of patients to self-manage, with access to care and advice when needed, as well as provide a holistic approach to care with a focus on the pre and post hospital experience.
- **Ancillary services** – consolidating ancillary services would improve efficiency and proximity to care.

7.5.1.1 Quality Impact Assessments

The programme has commenced the development of Quality Impact Assessments (QIAs) for a number of the major moves proposed. These have been developed by senior NUH clinicians with support from Divisional Quality Directors and NUH Clinical Leads for Quality Assurance, Compliance and Effectiveness.

From the initial draft QIAs the risk level varies between moderate and low although with proposed mitigations these can be reduced to low. Key risks identified at this early stage include staff engagement and clinical adjacencies for Maternity.

The QIAs remain live documents and will be re-iterated throughout each phase of the programme, a system approach to the development and sign-off of QIAs is also being developed. The current draft QIAs can be viewed at Appendix 28.

More detailed information on the health impact of option 13a was determined from quantitative analysis, which provided information on the implications for minority groups and outlined in Figure 108 below. The key findings of the health impact assessment for minority groups is as follows:

- Older people and people living in areas of deprivation are proportionately higher users of emergency care services – therefore improvements in the quality of these services would have the greatest proportionate benefit for these populations
- Improvements in the quality of maternity services would have the greatest proportional benefit to Black, Asian and Minority Ethnic (BAME) / other and deprived populations.
- Improvements in the quality of elective services would have the greatest proportional benefit to the elderly.
- Improvements in the quality of cancer services would have the greatest proportional benefit to men, older people and people living in areas of deprivation.

Figure 108 Health Impacts of option 13a on minority groups

Service	Health impact for minority / protected groups
Emergency	Improvements in the quality of emergency care services would have the greatest proportional benefit to the deprived and elderly population. The over 65 population use emergency care services with an average of 261 spells per 1,000 population in the 2018/19 year, compared to 57 per 1,000 for under 65s. Of the elderly population, males use the service slightly more per head of population than females. Similarly, as deprivation level increases, so does emergency service usage.
Maternity	Improvements in the quality of maternity services would have the greatest proportional benefit to Black, Asian and Minority Ethnic (BAME) / other and deprived populations. The BAME and other population had 19 births by 1,000 population in 2018/19, compared to 7 for the white population. The number of births per head increases as the deprivation level increases.
Elective	Improvements in the quality of elective services would have the greatest proportional benefit to the elderly.

	The over 65 population have more elective admissions than under 65s, with 250 per 1,000 population in the 2018/19 year, compared to 60 for the under 65s. Males had slightly more elective spells per head than females. There is less of a clear trend for elective spells and deprivation level.
Cancer	Improvements in the quality of cancer services would have the greatest proportional benefit to men and the elderly, deprived population. Cancer analysis includes all specialties relating to oncology and therefore significant elements in the cancer pathway, including surgery are not included.

7.5.2 Impact on access and travel

The travel impact assessment assessed the transport and travel impacts of option 13a, and the detailed analysis can be seen in Appendix 27. A travel time distance matrix application programming interface (API) was used to calculate the average journey time and distance between each population weighted lower layer super output area (LSOA) centres in Nottingham and Nottinghamshire and the surrounding area to the QMC and City Hospital sites as well as the surrounding hospitals.

The Travel Time API accurately calculates distance and time based on actual travel routes, rather than using an 'as the crow flies' estimate, making it an accurate platform to use for this analysis.

- Peak travel times: weekday morning average travel time was used as an estimate for peak.
- Off-peak travel times: weekday lunchtime was used as an estimate for off-peak. Off-peak is used as a proxy for ambulance times, as this most closely aligns with actual ambulance journey times.
- Public transport travel times: weekday morning public transport travel times were used for public transport.

Overall the travel impact assessment identified for option 13a that the increase in travel times for peak and off-peak driving times and by public transport was limited, with the largest increase in average travel time being 11 minutes. This is broken down by clinical service area below:

- There is limited increase in average travel times for peak, off-peak and public transport for emergency care services, with up to 4 additional minutes, on average.
- There is limited increase in average travel times for peak, off-peak and public transport for maternity services with up to 6 additional minutes on average.
- There is limited increase in average travel times for peak, off-peak and public transport for elective services, with up to 11 additional minutes, on average, for options where elective services are consolidated at City Hospital and 6 minutes at QMC.

Access was also assessed with respect to specific protected and minority groups to determine the impact on health inequalities. Overall, this showed limited impact on the access to services for groups with protected characteristics, except for people living in areas of deprivation within Nottingham City:

- Neither male nor female populations are disproportionally impacted for peak, off-peak or public transport
- The elderly population is not disproportionally impacted for peak, off-peak or public transport
- Current travel times for BME and other populations are shorter than for the white population and remain so if maternity services move to QMC, but the percentage increase in travel time is slightly greater for all transport methods for these groups
- Current travel times for the most deprived populations are shorter and remain so if maternity and emergency care services move to QMC, but there is a slightly higher percentage increase in average travel time compared to the general population for all transport methods. However, people from deprived populations in Nottingham City attending QMC outpatient appointments will need to travel significantly further, especially by public transport.

The travel impact analysis conducted to date shows that whilst there will be a limited impact on access for many patients, there are some communities who will have further to travel for some services. We are actively engaging with these communities to understand what this may mean for them and the analysis and engagement is informing the developing Travel Plan.

In addition, the proposed clinical model of care would improve access for people with long term conditions, disabilities and mobility issues. These have been summarised in Figure 109:

Vulnerable Groups	Description of Impact
Co-location of services for those with multiple conditions	• As was highlighted in the patient support and focus groups, people with long term conditions and disabilities need to use healthcare services on a regular basis. • Many people have more than one long term condition, which can lead, currently, to multiple site visits on separate days and separate campuses, often requiring frustrating transfers between sites for patients. • Co-location of non-emergency care services would allow for the designing of services such that services that are commonly used co-currently can be adjacent to one another.
Accessibility for disabled and people with mobility issues	• 11% of children, 4% of those aged 16 to 49, 11% of those aged 50 to 59, 18% of those aged 60 to 69 and 30% of those

	aged 70 and over have some form of mobility issue in England.[142] • A further 8% of children, 4% of those aged 16 to 49, 9% of those aged 50 to 59, 12% of those aged 60 to 69 and 18% of those aged 70 and over have either chronic stamina, breathing or fatigue problems in England. • For those people with mobility issues or chronic stamina, breathing or fatigue, the issue of accessibility of healthcare services is more than simply how long it takes to travel by car or public transport. • The ease of transfer, walking distance and steps to be climbed all have a negative impact on the ability of these people to access services. • The location of drop off points, provision of shuttle services and provision of porters can have a large positive impact on their patient experience and their access to services.
Integrated working of the service with community and self-care	• People with long term conditions and disabilities would benefit from the integrated working of community and hospital-based healthcare providers. • These people would normally need regular appointments with healthcare professionals. The more easily accessible these services, the better the patient experience and the better clinical management of their conditions. • The adoption of well-functioning digital infrastructure would promote seamless sharing of patient records, encouraging good management of long-term conditions, and offer remote video consultation, which would advantage those with mobility and chronic stamina issues, breathlessness and fatigue.

Figure 109: Impact on access for vulnerable groups

7.5.3 Impact on other providers

7.5.3.1 Analysis from the integrated impact assessment

The integrated impact assessment (IIA) included analysis on the impact on surrounding providers. The main impacts are:

- **Non elective inpatient spells** - most non-elective inpatient spells are currently located at QMC, and this is still the case in option 13a. Any potential service moves may lead to more patients going north to King's Mill Hospital, Chesterfield Royal Hospital and Lincoln County Hospital. This was tested in a series of meetings at

[142] Office for National Statistics, 2020. *NTS0712: Impairments by age and gender: England*. London: ONS

specialty level with clinicians from Kings Mill Hospital, these are described in section 7.5.3.2 below

- **Maternity births** - in option 13a, all maternity services would be located at QMC. This would mean that for some families with routine pregnancies the closest maternity unit would become Kings Mill Hospital if maternity services were no longer available at the City Hospital. This is an anticipated 630 births per annum based on the ICS modelling for the ICS CCSS.

  Over the last 3 years births at Kings Mill Hospital have increased by c300 which is against the trend of declining / relatively flat growth in the previous years. This increase is likely an impact of the quality issues recently publicised at Nottingham City Hospital. We will continue to look at this situation on changing birth patterns to assess over time the likely long term planning assumptions, including the TNUH proposal which my lead to a total of c630 births moving to SFHT.

  The increase in births at SFHT will need to be supported by an increase in staff. An initial staffing model (see below) has been developed to accommodate this level of growth over time. Whilst it is an increase in staff required at SFHT this should be supported by a re-allocation of revenue across the system as births drop at NUH. We will continue to work across the system on a sustainable workforce plan for maternity services.

  - Sonographers: 4 WTE B6
  - Hearing Screening: 2 WTE B3
  - NICU: 6RN (B5&6) & x7 HCA WTE
  - Maternity: 15-20 Band 6 HCA: 4-6 (B3)
  - O&G / Paed Consultant: x5-7 WTE
  - Anaesthetists: x1 WTE (+5 WTE Theatre Team Band 5-7)
  - Junior Doctor x7-9
  - ANNP: x4 WTE (B8a)
  - Pharmacy: 1-2 WTE (B6-7)
  - Other AHP: x3 WTE (B6)
  - Overall indicative cost shift: £4-4.3million

  SFHT are in the process of developing its 5 year strategy which will include a revised estates strategy. The long term implication of the TNUH reconfiguration on the SFHT estate will be reflected in the new estates strategy.
- **Elective** - it has been assumed that elective and outpatient activity across QMC and City Hospital would remain the same, regardless of where services are located in each option
- **Ambulance** – the main impact on ambulance services is likely to be around potential flows of patients to providers outside NUH, however inter-hospital ambulance transfers would decrease from the current numbers which are approximately 400 ambulance transfers each year from City Hospital to QMC and approximately 1,250 ambulance transfers from QMC to City Hospital

Figure 110 highlights these impacts on a map:

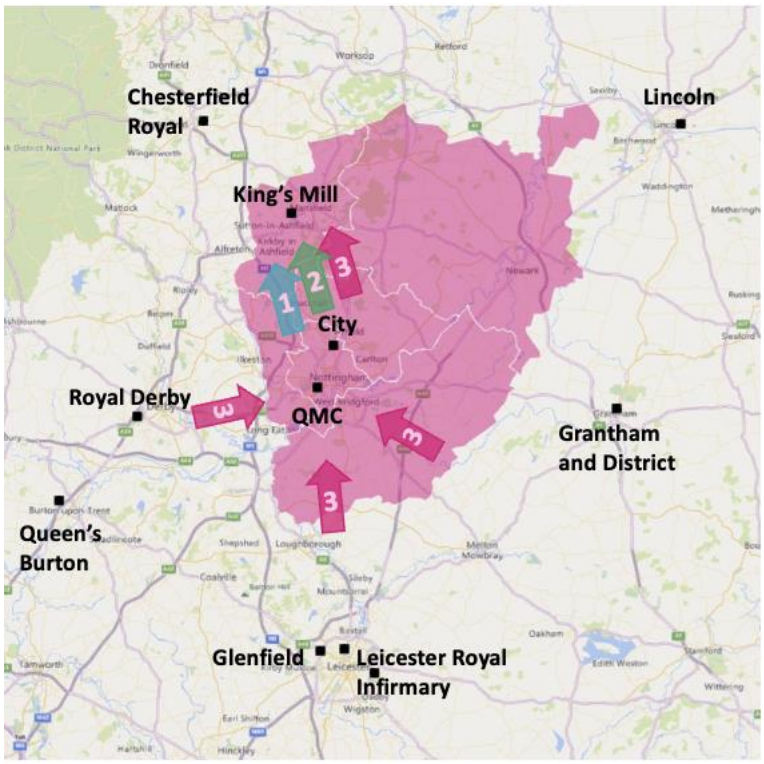


Figure 110: Impact on other providers

For those patients whose destination of hospital switches from City Hospital to King's Mill Hospital, the average and maximum travel time increases significantly. This is demonstrated in Figure 111:

Sites	Average travel time	% within 15 mins	% within 30 mins	% within 45 mins	% within 60 mins	Max
Current (City)	27.32	1%	66%	96%	100%	49.37
Future (King's Mill)	63.61	0%	0%	3%	39%	86.75

Figure 111: LSOA population weighted off-peak catchment, public transport travel times, outflow population (maternity and emergency)

In addition, there is impact on travel times for people in the Basford, Bestwood and Sherwood wards in Nottingham, with greater average and maximum travel times for peak and off peak driving travel times and for public transport travel times. The population around this area are relatively young, relatively deprived with low car ownership, high proportion of females of child-bearing age, and higher black and minority ethnic (BAME) populations than rural areas. Mitigations for this would involve considering additional public transport routes for those areas where there is low car ownership and additional communication and support during implementation for this population.

As a system we continue to have regular dialogue with colleagues at NUH and the wider ICS, to ensure, as system partners and through the provider collaborative, we continue our future planning and strategic thinking in ways that join the impacts of TNUH and other factors.

7.5.3.2 Feedback from targeted engagement with other providers on impact

All system partners are members of the TNUH programme board and provide support for the overall direction of the programme and ensuring the impacts on them are fully understood. All partners have provided letters of support for this business case which can be found in Appendix 40.

Primary Care Networks Clinical Directors have given their support for the programme and look forward to using it as a platform for comprehensive clinical integration both inside the hospital and in the community, improving outcomes and experience for citizens, improving the working day for clinicians and staff and also coherence and sustainability of the system.

In order to further understand the impact of the proposed changes on other providers we carried out direct engagement, in particular with Sherwood Forest Hospitals (SFH). Detailed discussions took place at specialty level between the ICB, SFH and NUH to understand the potential impacts upon patient flow for those specialties proposed to move from the City to the QMC site. In addition to discussions at specialty level, discussions have taken place at senior/Executive level, most recently in March 2023. It was considered that there might be occasions where patients who had previously considered City to be their closest hospital might choose to migrate to KMH for certain specialties.

The outcomes of these discussions are as follows:

Emergency Care (burns and emergency plastics, acute respiratory)	• Burns and emergency plastics: assumed that there would be no material impact upon other providers as the service offered by NUH is already provided for the region. • Acute respiratory: analysis was undertaken on patients from postcodes NG14 – 25 accessing these services during 2019 and there were 279 direct emergency admissions to the City campus during this period. • In the meeting held with SFH it was agreed to interrogate the data from the move of the Hyper Acute Stroke Unit which took place in 2020 on the admissions from these postcodes to both QMC and KMH, as this was a service change which had already taken place. This analysis demonstrated that there had been no statistically significant increase in admissions to either provider.
Maternity and neonatal services	• The potential impact upon Sherwood Forest Hospitals (SFH) maternity is an anticipated c630 births per annum based on the ICS modelling for the ICS CCSS. • The number of Births at NUH in 2021/22 was 7,905 (Source: HES)

	• The number of Births at SFH in 2021/22 was 3,365 (Source: HES • A 630 change would be a 9% decrease in births at NUH and a 19% increase in births at SFH • In 2021 SFH stated that the current service could accommodate 10% additional activity and there has already been an increase in bookings. • Our most recent dialogue with SFH in March 2023 it was noted that births are already starting to increase at SFH possibly as a result of the CQC report and Ockenden review at NUH. Early NUH data suggests that there is a corresponding decrease in bookings at City hospital however it is too early to draw definitive conclusions from this. SFH have identified that the issue that is most challenging for increasing births above the available capacity is the workforce availability. • Dialogue is ongoing and is being taken through the system maternity structures (e.g. LMNS Board). There is an acknowledgement that the ICS modelling may not reflect the choices that women make in real life and this was tested at the second phase of pre-engagement. This showed that there was some concerns around the proposal to remove birthing services from City Hospital, the programme is continuing to engage with Maternity Voice Partnership and community groups on this issue.

Engagement with providers across the system was carried out initially though the Strategic Oversight Group (SOG), then through the Programme and Partnership Board which superseded the SOG once programme governance changed in September 2022.

Detailed discussions were had at a specialty level to discuss the potential impacts. The feedback received and our programme response for each area are detailed in Table 6.

Potential challenges for other organisations	TNUH programme actions
Emergency care	
That QMC site access and road system won't impact the East Midland Ambulance Service (EMAS) or delay	• EMAS will want to review and input into the detailed proposals for the QMC site as the

patients which could lead to activity moving to surrounding Trusts. In time we would welcome detailed data on the expected impact on patient flows. Clear consideration is required to the provision of adequate ambulance parking where there would be an increase in ambulance arrivals at one site. Consideration needs to be given to timely patient handover wherever services would change location and the appropriate inclusion of an IT infrastructure to facilitate data capture of that process. Consideration should be given when considering infrastructure to the potential future requirement for rapid electric vehicle charging in areas frequented by ambulance vehicles (cars and ambulances).	estates strategy is being developed - this would ensure that flow for ambulance vehicles and crews can be optimised reducing unnecessary waits. • Vehicle infrastructure issues would need to be addressed to enable a zero carbon fleet in line with the national sustainability strategy.
Family Care services	
Colleagues feel it is likely that with the move of services for women, children and families from City Hospital to QMC, it may lead to an increase in families choosing to have their babies at Kings Mill Hospitals (KMH), particularly from areas closer to City Hospital. This would also potentially have an impact on neonatal intensive care at KMH. The capacity deal with such additional births would have to be put in place at KMH.	• Further testing of modelling required, as women may make different choices depending on where their closest hospital is located. This was tested in phase 2 engagement in March 2022 through targeted questions in the survey as to whether this would impact where families would choose to have their birth. • Further testing has taken place with families living in the Bestwood, Basford and Sherwood areas of the City around how the proposals will impact their travel and 78% of respondents identified that they would choose the QMC site for their care if they were able to • Engagement is ongoing with patients who may access maternity services.
Neonatal intensive care unit (NICU) capacity calculations should be in line with the neonatal critical care review requirements and ensure that relevant	• The planned NICU capacity is in line with the national requirements. • For NICU, the proposed model should result in fewer transfers from NUH to other units.

support services (especially radiology) can cope with the increased demand on the QMC site. There are currently a number of 'exception' transfers to University Hospitals Leicester (UHL) as there is limited out of hours emergency radiology cover at NUH for the service.	• The single site service has been created to provide better access. The capacity and associated workforce plan in the new women's and children's hospital would be planned in line with national guidance to ensure services can cope with any increased demand.
Cancer care	
That cancer pathways are clear for patients across the two sites.	• The high level pathway for patients at each site has been mapped. Further work is planned to look at more specific patient pathways for ambulatory cancer care across both sites.
With a national shortage of all of the three main workforces that are required to deliver radiotherapy (clinical oncologists, radiographers and physicists) a more resource intensive model has the potential to draw staff – and possibly destabilise – from other regional centres. Within the slides it is not possible to assess whether NUH are looking to expand their capacity as part of these plans which may compound staffing challenges across the East Midlands. As noted, the East Midlands radiotherapy operational delivery network has a mandated role in understanding the impact and should be involved early on in the process to support.	• Significant expansion in Radiotherapy capacity is not planned through the proposed reconfiguration • Future flexibility is being developed through the delivery strategy to respond to the changing needs of local and regional services
Other	
Further explanation about associated car parking issues, particularly on the City Hospital site with increased elective plans Further detail on the savings that are expected that will fund this building. This request is in the context of the White paper and current changing integrated	• Affordability model has been shared with system Directors of Finance.

care system (ICS) funding methodologies and allocations.	
That extended travel times are considered and mitigated as much as possible for patients from Leicester, Leicestershire and Rutland who would access services in the reconfiguration. That local GP providers, i.e. those that send a significant amount of patients to NUH services, are included in development of redesigned pathways to support the reconfigured services.	• Engagement materials were disseminated to GP practices in neighbouring ICS areas during phase 2 engagement in March 2022.

Table 6: Feedback from other providers and TNUH programme actions

7.5.4 Impact on sustainability

Assessment of the social, economic and environmental impact of the programme was undertaken to understand, identify and act to reduce and limit negative impacts of the programme on the environment.

Relocation of services at NUH would lead to a small increase in total vehicular tailpipe emissions and a geographical redistribution of where these would occur.

Category	Description of Impact
Vehicular emissions	• Along with carbon dioxide and other greenhouse gases like lighter hydrocarbons, vehicles powered by internal combustion engines can also release photochemical pollutants, in the form of nitrogen and nitrous oxides, sulphur dioxide and combustion particulates. • These pollutants are undesirable as they have detrimental effects on people's health. • Different vehicles produce each of these pollutants at different rates, depending on the fuel type, the age of the engine and the loading nature on the engine.
Air quality in Nottingham	• The entirety of the administrative area of Nottingham City Council is covered by an Air Quality Management Area (AQMA).[143] • This AQMA is specifically concerned with monitoring the level of nitrogen and nitrous oxides.

[143] Defra, 2020. *Local Authority Details – Defra UK*

	• Due to the lower background amount of traffic, air pollution from vehicles is less of a problem in the countryside than it is in congested cities like Nottingham.
Total change in tailpipe emissions	• If services are relocated, as is proposed in Option 13 (full elective / emergency split), then the total distance travelled by patients may increase. • Any increase in overall journey distance would lead to an increase in total tailpipe emissions from vehicles. • Staff journeys may marginally increase as staff travel slightly further to work. • However, increases in journeys to hospital are likely to be offset to some extent by the development of service closer to home, including virtual appointments, which would reduce the number of journeys taken.
Location of tailpipe emissions	• There may be marginal change as to which healthcare provider patients go to receive services after service relocation. • Some maternity patients may move north to places like King's Mill. • In addition, the East Midlands Ambulance Service may take fewer patients into NUH from the north of Nottingham, and instead take them to locations like King's Mill, and Lincoln[144]. This would reduce traffic and emissions in the north of the city of Nottingham, but these would increase in Mansfield, and to a lesser degree in Lincoln.

Table 7: Environmental impact

The assumptions made to analyse the sustainability impact from increased travel distances are:

- Estimate of 0.275 KgCO2e per mile was used.[145]
- Activity volumes were multiplied by two, to account for the journey to and from the hospital.

[144] Grantham Hospital no longer had a Type 1 A and E Department and is to redesignated as an Urgent Treatment Centre in 2023 and as such would not receive any emergency admissions from NUH catchment at the time of TNUH implementation.

[145] *Government Conversion Factors For Company Reporting Of Greenhouse Gas Emissions,* https://www.gov.uk/government/collections/government-conversion-factorsfor-company-reporting

- Only patient travel times have been considered due to variability on the frequency of visitors.

The carbon emissions associated with travel would increase for all services under all options due to travel distances being longer.[146]

7.5.5 Impact on digital exclusion

Digital exclusion is an important topic for health systems to consider as it can increase health and social inequalities. Figure 112 shows the internet user classification by LSOA of the Nottingham and Nottinghamshire area. It shows the highest level of internet use and engagement is in the city centre, with some of the outer areas showing much lower levels of internet use and engagement. This also links to the point in section 7.5.3.1 which notes that the Basford, Bestwood and Sherwood population have low car ownership in general. Whilst digital solutions initially were cited as a solution to this, the map below highlights these populations has relatively lower internet use and engagement relevant to the city centre. Consideration is being given to alternate routes of public transport for these populations, and we are further considering digital exclusion within the NUH digital strategy.

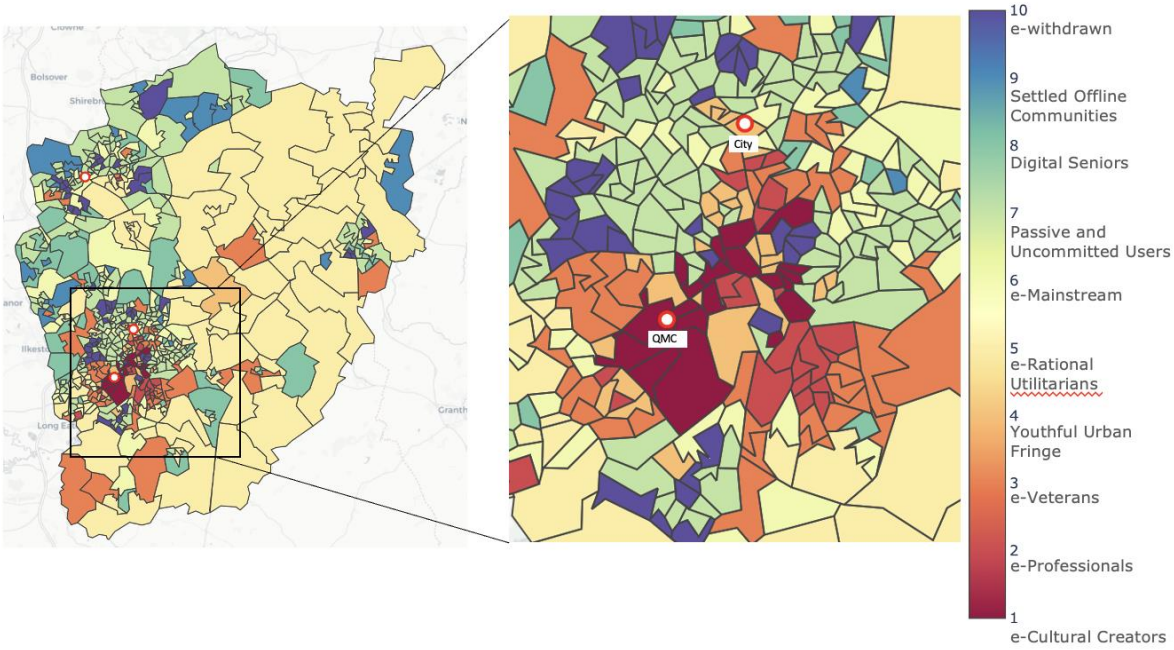


Figure 112: Internet user classification 2018 by LSOA

7.5.6 Mitigations for disbenefits

There are a number of high-level mitigations which have been identified to address some of the potential disbenefits which have been identified by the impact assessment across the areas of access, transport, impact on other providers and digital access.

[146] 2018/19 HES activity data, TravelTime.com distance estimates

Category	Potential high level mitigations	Programme Response
Access for patients	• Improved parking at all sites with review of shuttle bus and trolley provision • Review of porter and volunteer help including patient transport • Integration of ambulatory and community provision of services	• Travel Plan developed which considers access to the hospital and navigating within the sites. • Dialogue commenced with local council transport officers and teams to discuss impact of proposals on patient transport. • Travel advisory group to be established with key stakeholders.
Patient understanding of changes	• Continue the community and patient engagement programme that has already been begun • Active communication of changes • Train informed and engaged volunteers who currently help with patients arriving at hospital	• Engagement is continuous has been ongoing since phase 2. • Detailed consultation plan developed see Chapter 11 • Public facing documentation will be developed to support Public Consultation. • Chapter documents detailing the vision for the future of our hospitals available on public NUH website. • Communications and Engagement Sub-Group established with representation from across the system to ensure that information is cascaded through all channels and opportunities for engagement are maximized.

Impact on other providers	• Share options and estimates of patient activity flows by specialty with other providers • Work with other providers to develop thorough understanding of local patient catchment and their behaviours regarding choice and activity with the health service	• Data shared with providers detailing impact proposals may have. • Meetings held with SFHT to discuss potential impacts at specialty level. These discussions are ongoing. • Membership of TNUH Programme and Partnership Board includes local providers and neighbouring commissioners • Local providers supporting development of public facing communications.
King's Mill, Basford, Bestwood and Sherwood	• Consider additional public transport routes for those areas where there is lower car ownership • Additional communication and support during implementation for this population	• Conversations taking place with local council transport officers and teams to understand transport routes in more detail. • Targeted ongoing communication and engagement for areas most affected by proposals in place.
Digital access	• Provide alternative access routes to virtual appointments, especially areas of low internet use • Communication and engagement to raise awareness and build confidence in digital platforms	• Patients will always be offered a choice between virtual or in person appointments, and given information about how to book. They will also always be able to

	• Co-produce digital solutions tailored to service users and levels of digital skills or engagement • Clear communication on the availability of face to face appointments where digital access is not viable	choose whether they receive correspondence in hard copy or digitally or both. • Patient letters will include information about digital options, including community access to IT services (such as at libraries, GP surgeries and other health and social care facilities), and these will also be shared with patients when they do attend for in person appointments. All patient information leaflets, including those about accessing digital services, will be available in other languages/formats on request. • NUH will always align with and promote national communications messages around digital access, for example in relation to adoption of the NHS App. • TNUH will capture learning from the NRC innovation trials which have co-design groups made up of academics, clinical staff and

		patient representatives as well as colleagues from transformation and human factors. One of the key tests applied to technology is usability and risks are assessed on both adoption and digital marginalization.
Workforce and staffing	• Engagement plan to better understand the impacts on the different groups in the workforce • Survey staff to understand the issues arising from the changes proposed in TNUH • Liaise with human resources and legal advisors to understand obligations to staff	• Thorough workforce engagement plan in place detailing ongoing staff engagement. • Ongoing staff survey to gauge levels of awareness and interest in the programme. • Series of 'pop up' stands held across the Trust in areas of high footfall, and at different times of day to capture as many members of staff as possible. • Regular TNUH updates are provided at staff side meetings.

Table 8: Mitigations for disbenefits

7.5.7 Financial impact

7.5.7.1 Capital cost impact

Capital requirements for NUH under each option have been calculated by expert estates advisors based on best practice and relevant standards and guidance. These were calculated through estimating the space required for the activity required on each site, and how much of this space is required to be new build or refurbished space. The capital requirement for this space was then calculated, including completion of OB1 forms.

The estimated capital costs including costs required for new buildings, refurbishment and decant requirements of each of the options until 30/31 can be seen below. It is anticipated that the 'BAU' and 'Do Minimum' options would also have significant capital spend in the following decade as the estate continues to deteriorate.

	BAU	Do minimum	Option 13a
Total capital costs	£558m	£985m	£1,345m

Figure 113 Capital cost

The capital cost breakdown of each of the developments in the Preferred Way Forward along with their timing are summarised in Figure 114 below.

Figure 114 Capital Cost Breakdown of the Preferred Way Forward

Heading	Out-Turn Cost £m	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31
Fees	67											
Enabling and other works												
QMC MSCP 1& 2	56											
QMC relocation of Day Nursery & Currie Court	10											
NCH Demolition Works	2											*31/32*
Main Works - QMC												
QMC Women's & Childrens	429											
QMC Theatre & CCU block	242											
QMC Cancer Centre	78											
QMC Refurbishment	277											
Main Works - NCH												
NCH Theatres & CCU	75											

NCH Cancer Centre	41											
NCH Refurbishment	68											
Total	**1,345**											

Capital costs are based on the following assumptions:

- Based on agreed Schedules of Accommodation and associated design information.
- Works costs have been estimated based on Healthcare Premises Cost Guides(HPCG) at PUBSEC 250.
- Appropriate allowances have been applied for fees, on costs, equipment, planning contingency and optimism bias.
- Inflation has been applied to mid-point of construction.
- VAT has been applied on all project costs with the exception of fees

Supporting capital cost forms are provided in Appendix 29.

The proposals are not expected to result in additional lifecycle costs over and above the Business as Usual option.

7.5.7.2 Revenue affordability

The finance workstream has estimated the impact of the capital requirement on NUH's overall financial position.

The revenue impact of the proposals on NUH is to incur an additional c. £34m p.a. in capital charges (in 30/31) and deliver £46.9m of cash-releasing benefits (in 30/31). This means the net annual saving estimated to be delivered by the programme will be c. £13m p.a a significant improvement in NUH's income and expenditure compared to business as usual (BAU).

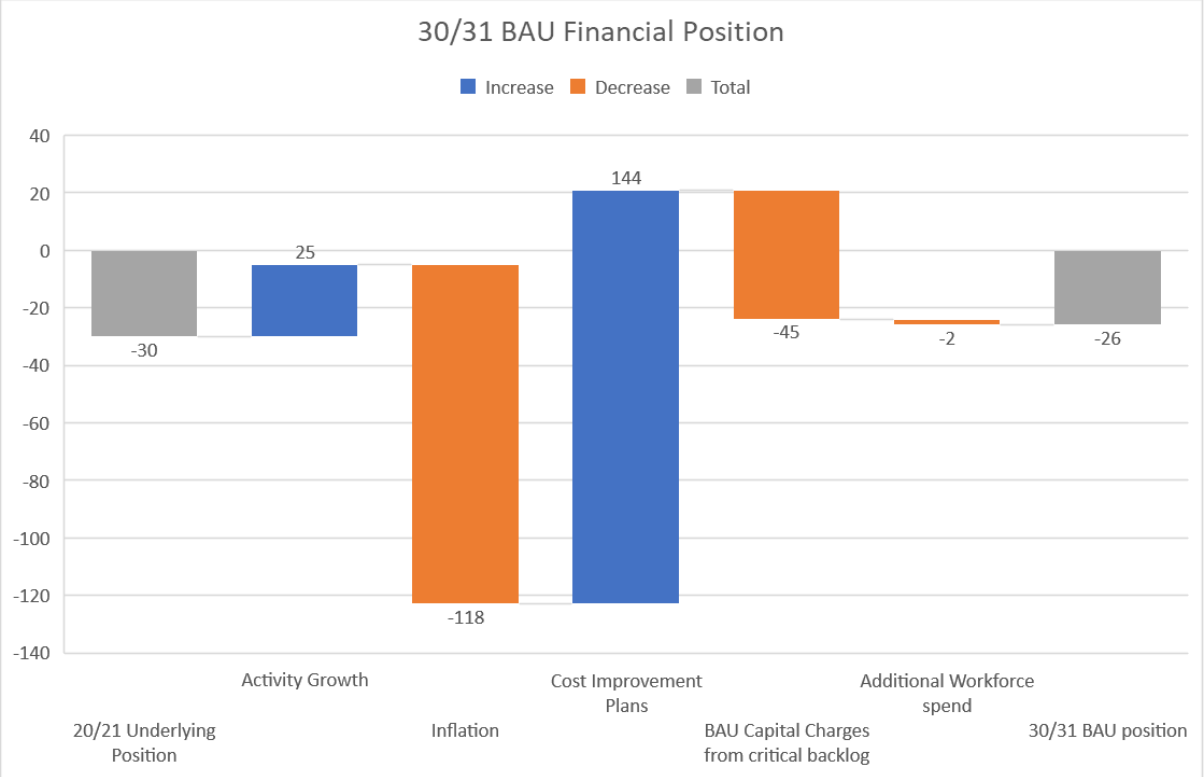


Figure 115: BAU position in 30/31

Figure 116 shows that option 13a is expected to improve NUH's income and expenditure by c. £13m p.a.:

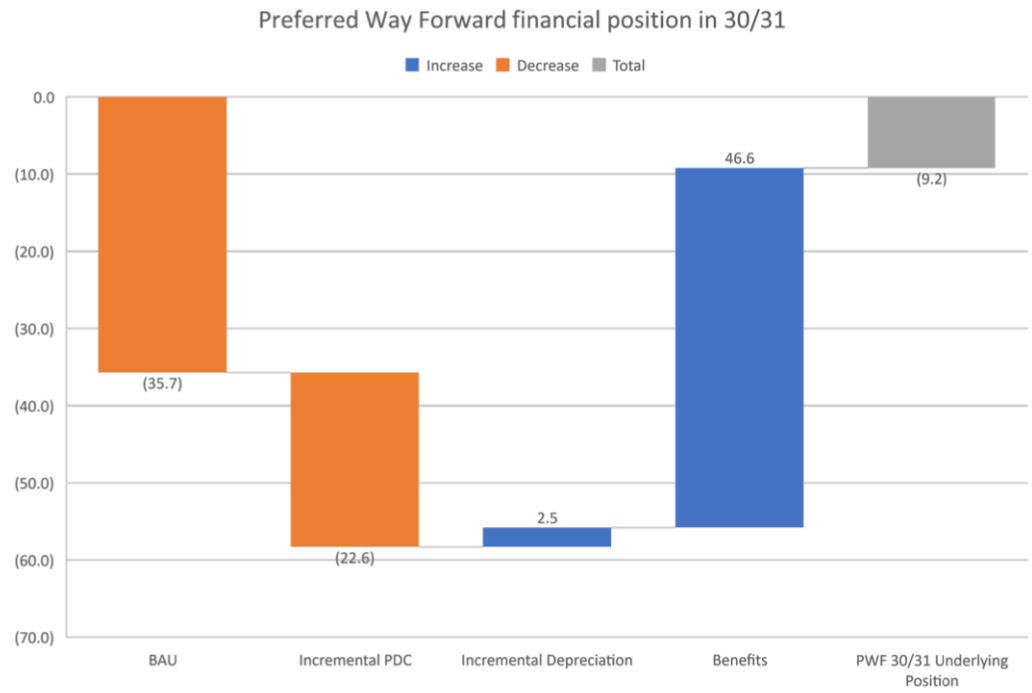


Figure 116: Option 13a financial position in 30/31

This improvement compared to BAU is driven by the significant cash-releasing benefits estimated to be delivered through the scheme.

The improved estate and clinical reconfiguration are expected to result in a range of financial benefits by 30/31. These are summarised in the table below and include a number of cost reduction and income improvements:

Table 9 Cash releasing benefits summary

Benefit	Description	Cash-releasing benefit £m (in 20/21 prices, risk adjusted)
Clinical	This includes benefits to length of stay, theatre utilisation, SDEC conversion, EL to DC conversion and reduced patient transfers through improved design and pathway flow	18.5
Community / Reconfiguration	This includes alternative to attendance in the community and outpatient demand management through implementing ambulatory clinical model	1.9

Workforce	Improved working environments, training opportunities and workforce models and new roles can improve staff turnover, rota efficiency, agency spend and staff sickness	7.6
Operations	Improvements in harm-events (patient injuries, surgical errors, drug events, infections etc) due to improved facilities	0.2
Income	Increased income through research & development opportunities, including subsidised drug costs, retail opportunities and private patient income.	10.8
	Cash releasing benefits TOTAL	**38.9**
	Cash releasing benefits TOTAL in 30/31 prices	**46.9**

Sensitivity analysis has been conducted on the revenue impact of the proposal and shows that whilst the PWF I and E is sensitive to flexes to a number of key inputs, in particular benefits realisation and inflation, in each scenario it is still affordable that the 'BAU' position. This sensitivity analysis, alongside the assumptions behind the financial model, can be found in Appendix 30.

7.5.7.3 System affordability

System affordability analysis has been conducted to understand the impact of the scheme, in particular the additional activity delivered in the acute setting, on the wider system financial position. Analysis suggests the income growth allocated to NUH (c. 2.7% p.a.) is below the likely system allocation growth (c. 4% p.a.), suggesting the model is affordable whilst helping to support a greater allocation of growth funding to other priorities.

The following growth assumptions underpin the affordability estimate shown in Figure 117.

- System allocation: takes average growth from 19/20 to 23/24 (5.3%) and applies to from FY24/25 onwards
- Adjusted System allocation: takes average growth from 19/20 to 23/24 (5.3%) and has a sensitivity adjustment of -1.5% and applies c. 4% growth from 24/25 onwards to reflect a degree of convergence TBC
- NUH: Nominal Operating Income grows at c.2.4% compound annual growth rate between 21/22 to 29/30 in the updated NUH model following delivery of Tomorrow's NUH.

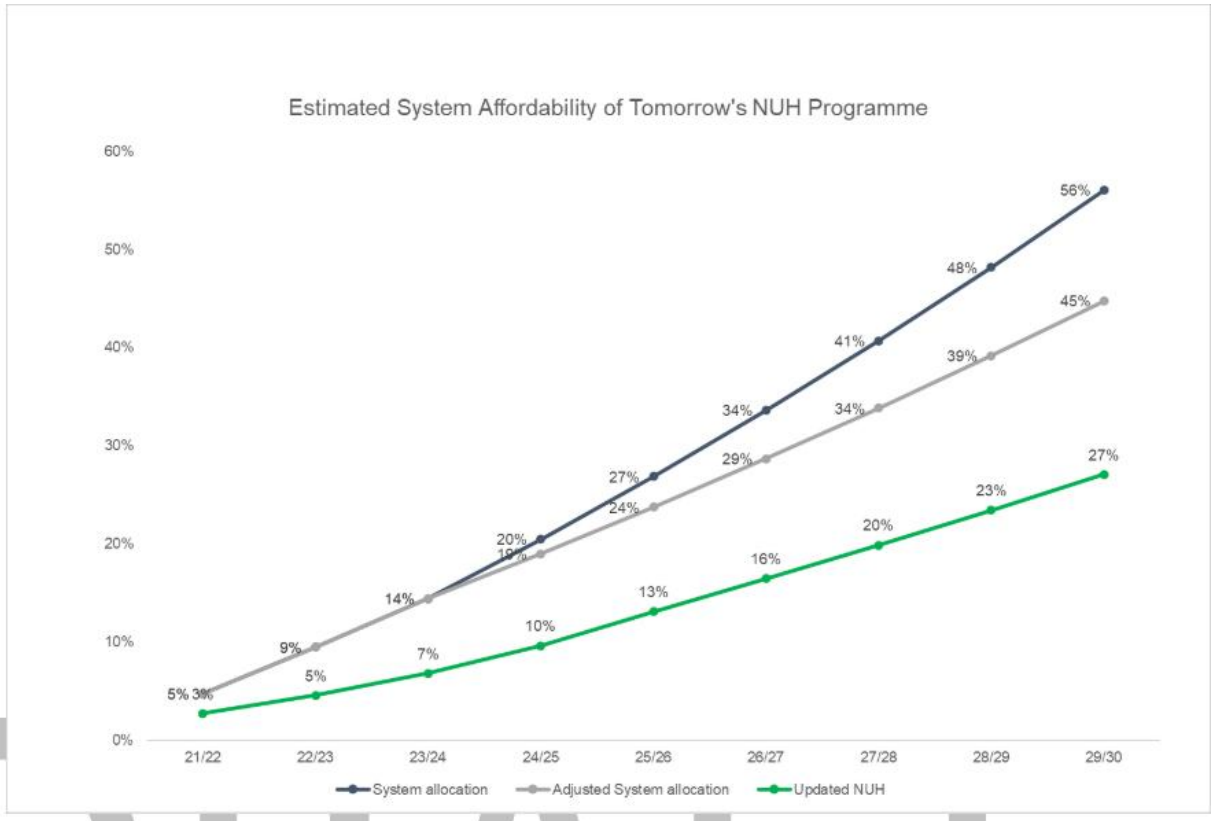


Figure 117 System affordability

7.5.7.2 Conclusion

Option 13a has a capital requirement of c. £1,345m over 10 years until 2030/31. This is expected to be funded through NHS capital through the New Hospital Programme.

The revenue impact of option 13, for NUH, is to deliver a net annual saving of c. £13m once the reconfiguration is complete, which goes a significant way to alleviating NUH's current deficit. Therefore, option 13 represents an affordable option in comparison to the Business as Usual option.

The preferred way forward represents Value for Money and delivers significant non-monetisable benefits in addition to the financial savings.

8 Enablers

This chapter describes the key enablers that are vital for implementation of option 13a including workforce, digital, and estates and sustainability.

Workforce underpins the delivery of our plans for the Tomorrow's NUH programme, and planning seeks to ensure a robust workforce with the appropriate skills and sufficient volume to deliver our aims. Our 'People Plan' and workforce planning process sets out the steps to do so. We would use the Tomorrow's NUH programme to realise opportunities across seven key areas, including culture and leadership, equality and diversity and inclusion and growing and retaining the workforce. More detailed workforce planning will be completed during subsequent phased of the business case developed based on the changes to clinical pathways and service transformation.

Ensuring the appropriate level of digital maturity to achieve the aims of both the Tomorrow's NUH programme as well as support the wider integrated care system (ICS) vision is being addressed with a dedicated strategy. There are two strategies which feed into the how we meet our digital aspirations – the wider Nottingham and Nottinghamshire Integrated Care System (ICS) data, analytics, information and technology (DAIT) strategy, and the Tomorrow's NUH Digital strategy. Within the context of option 13a, our approach to digital would allow us to deliver more efficient and targeted care and provide patients with more ownership over their own care.

Investment in new and up to date buildings means our infrastructure and environment is at its most optimum to deliver our proposed option, allowing outstanding care to be delivered, improving both patient and staff experience, while also addressing long term backlog maintenance costs and aligning how we deliver services with wider sustainability agendas. Construction of new buildings and refurbishing existing estates would provide the opportunity to adopt features which would improve the efficiency of buildings and improve care. Our plans for new estate would significantly reduce backlog maintenance.

Ensuring Nottingham University Hospitals NHS Trust (NUH) is sustainable moving into the future is a key priority, and links in with how we address estates as an enabler in the Tomorrow's NUH programme. The NUH Green Plan 2022 – 2025 ties in with the estates strategy which outlines what is required to achieve Tomorrow's NUH. In order to ensure our buildings are net zero carbon we would:

- **Reduce construction impacts**: an initial assessment of carbon limits was completed in June 2022 and construction would be designed to minimum construction impacts
- **Reduce operational energy use**: designing the buildings to reduce operational energy use, where possible, and publishing annual energy consumption targets and actuals
- **Increase use of renewable energy**: by producing energy on-site (for example, solar panels), where possible and using renewable energy sources where on-site production is not possible
- **Off-set carbon**: as a last resort, off-setting any remaining carbon and publishing the amount of off-setting on an annual basis

8.1 Workforce

Workforce and sustainability are key to the delivery of our proposals. A workforce plan has been developed to address local workforce planning drivers and to develop a workforce that is fit for the future.

Appendix 3 sets out the 'People Plan' and workforce implications of our proposals in more detail.

The people workstream of the Tomorrow's NUH programme has a key role in supporting the people planning aspects of the proposed changes and articulating the workforce impact of the proposed changes set out by the clinical model. Several key groups and committees have had input through the planning processes, giving an overview of the challenges that the clinical workstreams must address from a people perspective, including:

- NUH human resources,
- Professional leads,
- Finance leads within NUH and across Nottingham and Nottinghamshire,
- Strategy leads,
- Transformation and divisional leads
- ICS people workstream.
- Health Education England

Figure 118 outlines the people roadmap which highlights how the plan would meet workforce planning and recruitment goals, address culture and team and leadership challenges and how digital and estates can intersect with the impact on people and workforce.

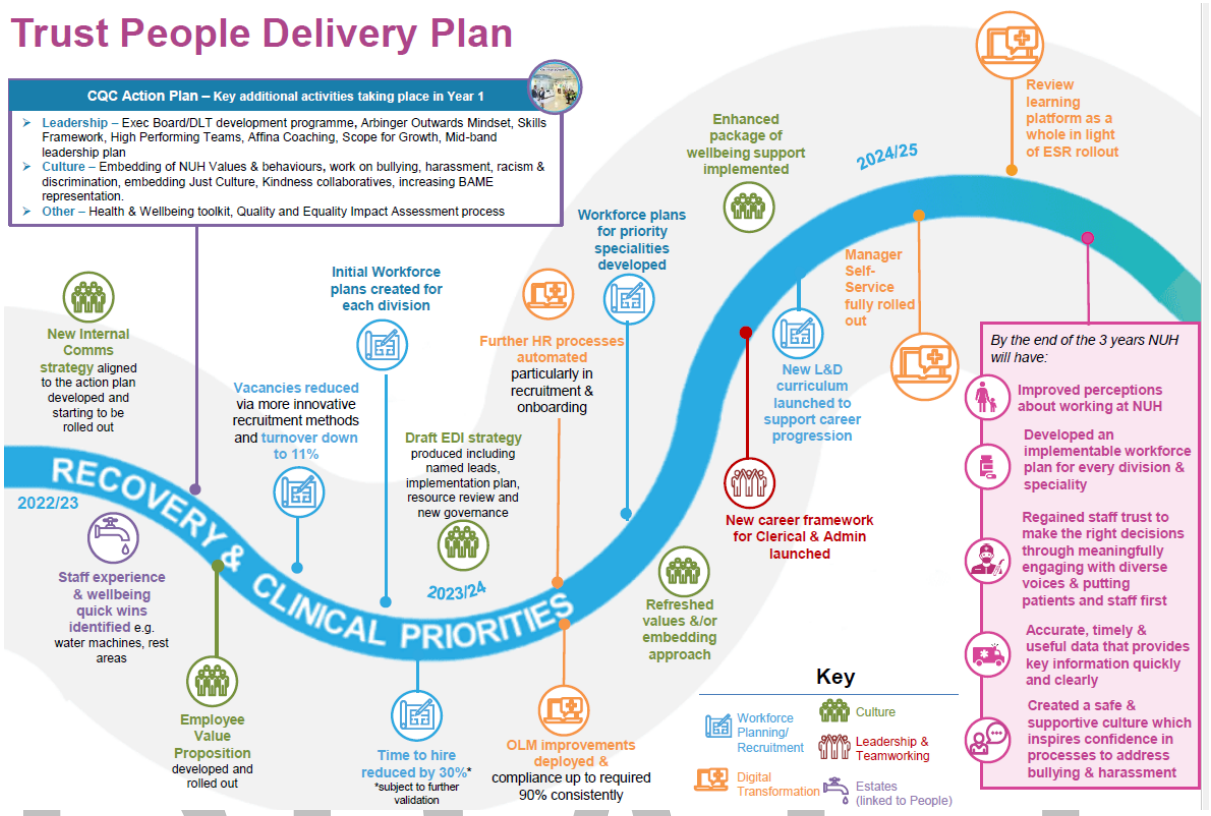


Figure 118: Trust people delivery plan

8.1.1 Workforce impact

8.1.1.1 Current challenges

Currently, NUH employs around 17,250 whole time equivalent (WTE) staff members (September 2022). It is recognised nationally that there is an ever-increasing demand on health care services, with ability to deliver against this underpinned by a robust and resilient workforce.

Staff Group	FTE Budgeted	FTE Actual	Vacancies WTE
Add Prof Scientific and Technic	845.2	729.33	115.87
Additional Clinical Services	2701.23	2546.28	154.95
Administrative and Clerical	3409.96	2952.39	457.57
Allied Health Professionals	832.36	765.29	67.07
Estates and Ancillary	1323.03	1233.57	89.46
Healthcare Scientists	570.85	543.56	27.29
Medical and Dental	1958.73	2064.39	(105.66)
Nursing and Midwifery Registered	5209.81	4502.12	707.69
Grand Total	**16851.17**	**15336.94**	**1,514.23**

There are a number of challenges which have been recognised for workforce at NUH which mirror the pressures nationally. Some of the main challenges for NUH are:

- High levels of vacancies across the workforce groups but particularly across nursing and midwifery at 13.6% in Feb 2021 and for consultant level medical staff
- High levels of premium pay to 'catch up' from cancelled elective activity
- Significant recruitment challenges across healthcare science, particularly at senior levels, Sickness and absence levels which are affected by carrying levels of burnout and stress related illnesses

Staff Group	Vacancy %
Add Prof Scientific and Technic	13.7%
Additional Clinical Services	5.7%
Administrative and Clerical	13.4%
Allied Health Professionals	8.1%
Estates and Ancillary	6.8%
Healthcare Scientists	4.8%
Medical and Dental	(5.4%)
Nursing and Midwifery Registered	13.6%
Grand Total	**9.0%**

Figure 119 Vacancy rates as at Feb 2021

8.1.1.2 Opportunities from the Tomorrow's NUH programme

Tomorrow's NUH will enhance the delivery of an already wide-ranging and ambitious people strategy, providing tangible benefits for our staff and our system partners. There are notable shifts set out within the plans of TNUH that will have an implication for how we support and deliver new models and approaches to care. These include:

- The scoping and development of a wide variety of new roles and skillsets to treat patients and staff at our Hospitals in the future. It will be key to ensure that these roles are planned around the competencies as opposed to current understandings. For example, the consolidation of Same Day Emergency Care (SDEC) capacity will create specific opportunities to broaden the workforce, creating opportunities for Medical Associate Professions including Physician Associates (PA's), Surgical Care Practitioners (SCP) and Advanced Clinical Practitioners (ACP).
- A greater emphasis on virtual attendances, requiring a change in ways of working, development of unique skill-sets and a refresh of processes, culture and technology.
- Movement to a more codified split between Acute and Elective activity whilst still providing flexible capacity to address surges – may require development of new ways of working and more generically skilled staff to deal with fluctuations in demand and a more flexible bed base.
- A greater proportion of specialties will be required to provide split site cover as a more codified Elective/Acute separation comes into force. This will necessitate a shift in the model of providing oversight and care both in and out of hours.

- THUH will enable us to work more closely with our academic partners, in developing new roles for the benefit of our patients and creating development pathways to retain and recruit our staff.
- Exploring the concept of an 'Institute of Learning', a more collaborative, interprofessional approach that will enable different faculties to share their learning and create a workforce with a wider range of skills
- As well as a central hub, we would like to see specific learning hubs within our clinical buildings
- Opportunities for improved access to Research and Innovation roles and practice
- The Elective/Acute split proposed will allow easier sharing across the multidisciplinary team of best practice and processes. Creating opportunity for easy identification of potential new roles and skill sets to support specific parts of the patient pathway, offering career progression and improving staff retention.

We would use the TNUH programme to realise these opportunities and to become a catalyst of change that ensures we have a workforce which allows us to deliver the programme ambitions. These are detailed in table 10 below and explained in more detail in Appendix 3:

Area	TNUH Impact and opportunity	Workforce Impact
Health and wellbeing	The programme gives the opportunity to provide a new working environment and ensure clinical and office work space is fit for purpose	Reduced staff turnover and sickness absence
Culture and leadership	The changes from the programme would see change for staff in terms of their working practices and experience of NUH, a supportive culture with strong and consistent leadership is vital	Staff who feel supported and empowered to engage with managers in the Trust about the change and how they deliver care
Learning and education	The vision for the programme is to address the current issues with the learning and education environment which are few, small and poorly accessible, into local learning hubs, dedicated standalone centres with classroom, clinical skills and simulation areas.	Fit for purpose physical and digital learning environments to ensure a staff base who are continually learning and refining their skills and knowledge
New ways of delivering care	The programme seeks to deliver new approaches to care through virtual attendances, development of new roles and skillsets, a more codified split between acute and elective activity and new estates	More opportunities to broaden the workforce and create new opportunities for health professionals and new workforce models

Flexible working	There would be increased co-location of relevant services resulting in a more efficient model from removing duplication within Obstetrics, Maternity and neonates • Neonatal consultants – current plans are to increase from 15 whole time equivalent (WTE) to 25 WTE; consolidating onto one site would reduce the required staff to 20 WTE • Neonatal middle grades – 2 WTE additional junior middle grade doctors were required to meet the requirements of the junior doctor contract; consolidation would avoid this and remove the need for one further post • Obstetric consultants – 2 WTE additional posts are required to deliver overnight and weekend cover, which would be reduced by 2.1 WTE upon consolidation • Obstetric middle grades – there would be a 9 WTE reduction upon consolidation assuming requisite cover provided by obstetrics and gynaecology consultants • Selected midwifery posts – leadership posts are under review with expected benefits upon consolidation	Rota efficiencies and more flexibility for individuals and between teams
Equality and diversity and inclusion	Developing new services and redesigning services would take into account ways of working and the needs of all diverse groups and communities that we serve and who work for us	Staff, patients, volunteers and carers who feel welcomed and valued
Growing and retaining the workforce	Improved estates and specific recruitment approaches would be central to the TNUH programme. Additional elements of the programme such as increased working with academic partners, increased learning opportunities, increased access to research and innovation and the	Increased recruits and reduced turnover (anticipated reduction of 10% - 17.5% modelled as an impact of the programme)

	elective/acute split would act as draws for potential recruits. The impacts of co-location would also reduce areas of investment needed to meet specific standards	

Table 10: Workforce impacts of TNUH programme

8.1.1.3 Growing and retaining the workforce

At the same time as enabling our current workforce to develop and progress at work, supporting their personal and professional journeys through career planning, Maths and English support, apprenticeships as well as supporting access to higher level qualifications, we will also ensure that the aspirations of our staff are supported at all stages of their careers.

We are fortunate to possess several differentiators that we will continue to maximise to ensure we can recruit and retain staff effectively, including:

- Learning, Education and Training are included as part of the Trust Wide Recovery & Restoration Plans, championed and supported by the Learning and Education Committee
- Extension of the ACP Programme with ACP Trust lead
- Optimise recruitment across the full HCS career pathway (from assistant to consultant) and provide internal development opportunities to grow and retain staff
- Supporting practice placements in diverse settings
- Health Care Assistant (HCA) academy in place with supporting development programmes, with participation in national programme to reduce HCA vacancies to 0
- Number of employability programmes (Princes Trust/Sector Based Work Academies/Traineeships) to enable the local unemployed to access HCA opportunities
- Development of Nursing and Midwifery 3-5 year workforce plan and wider workforce strategy, with annual establishment review, with support, guidance and strong leadership from the Institute of Care Excellence (ICE)
- Continued recruitment strategy to maximise numbers of registered nurses attracted from outside of NUH (whilst allowing stability of ICS partners) with strong preceptorship programmes
- Well-developed international recruitment programme which is vital to filling vacancies in both nursing and medics within 20/21 and 22/23
- A large and diverse range of clinical specialities staffed by nationally renowned clinicians and services, e.g. Major Trauma
- Research opportunities (which will increase with the creation of the Nottingham Research Centre)
- Support secondment and career opportunities where possible
- In-house clinical training and leadership development programmes

- Clinical rotation programmes for newly qualified nurses, acute care clinical skills simulation course, and external rotations across acute and community settings to support the career development of staff
- Development of nursing and midwifery 'Career Coaches', who once trained via a talent developing training programme, will be available to provide careers guidance to any nurse and midwife.
- Retention of the more senior/experienced workforce through recognition of their knowledge and skills, and by offering a new career pathway.
- Nursing Institute offer monthly Breakfast Career Clubs to offer career guidance and support, to include:
    - Retire and return opportunities
    - Clinical Academic Careers
    - Staff transfer opportunities
    - Role Development Opportunities
    - Development for non-registered staff to progress
- Ongoing process of improving workforce planning within Clinical Divisions and Corporate departments
- EFM has recently combined the facilities role to encompass both catering and cleaning to provide a wider range of duties and increase knowledge and skills in both areas
  A 'Chief Nurse Legacy Mentor' initiative for experienced late-career nurses who are clinical experts within their field but do not want to continue in fulltime clinical work

NUH is the largest employer in Nottingham and following recommendations set out within the NHS people plan the Trust needs to ensure our workforce is reflective of the community to which we serve. It is therefore pertinent to recognise the high levels of deprivation within Nottingham and its position upon the youth attainment scale as the lowest in the country – 150th of 150. Nottingham has the least amount of young people in the country going onto employment or gaining academic requirements such as GCSE's in Maths and English.

The developing Integrated Care Strategy for Nottingham and Nottinghamshire has an emphasis on investing in our people and therefore our workforce, by taking a 'One Workforce' approach inclusive of all staff involved in supporting people's health and wellbeing. This will enable the system to make the most of the talent and skills within our workforce and build integrated teams, with staff roles that are designed to meet the needs of our population, and a workforce that is representative of our population. This will include the expansion of the CARE4Notts Health and Care Careers Academy to support people into careers in healthcare.

NUH will play pivotal role within the system's workforce development plans, and as the biggest employer within Nottingham it is a key priority that the organisation supports our local community by enabling opportunities into healthcare. These are currently achieved currently through a number of interventions to include:

- NUH Ambassadors supporting local careers and employment events, virtual and face to face, approx. 2 a month
- Dedicated mentoring with job coaches and clients of Job Centre Plus
- Development of videos and resources to support entry into employment

8.1.1.4 Specific Strategies by Clinical Specialty

Specific strategies for growing our workforce are in place (or in later stages of development) to advance recruitment in the following areas/professional groups:

Area/Professional group	Initiatives in place/Planned
Radiology	• Introducing post core clinical trainee and clinical fellow posts to attract, train and retain the specialist radiologists • Recruitment of more generalist posts • Working in New Ways to develop and retain radiographers, radiographer education to support expansion of advanced practice roles • Application of a recruitment and retention premium to some specialities in radiography • Producing a Pan department workforce plan covering clear career pathway including advanced practice • Apprenticeships in Radiology planned as part of re-establishing Assistant Practitioners • Potential for joint AHP training established for core parts of the role that cross over the disciplines • Liaising with Leicester Hospitals and with Derby University about a HEI supported course that could offer capacity.
Registered Nurses/ Midwives	• Risk assessments and plans in place for fragile services • Expansion of the ACP roles within the divisions to provide opportunities for staff to develop and to improve recruitment and retention across nursing and AHPs • Continued drive to recruitment Nursing Associates through the Nursing Recruitment Strategy • Recognition by the American Nurses Credentialing Centre as a Magnet hospital will drive attraction and retention of the best nurses • The Nursing Institute holds regular recruitment events at which the divisions actively promote and contribute both staffing and materials

	• The Institute also arrange recruitment of international nurses and the trainee nurse associates, which is supported by the division. (We have plans to recruit up to 300 international nurses in 20/21) • Multiple routes into the organisation have been created to expand our pipeline (Widening Participation) starting with work experience, Princes Trust, Traineeships and Sector Based Work Academies through to Apprenticeships and beyond. • A Business case is being progressed to recruit an additional 62 WTE, to bring the maternity establishment to the Birthrate plus recommended level
Pathology	• Review of different ways of working; including the introduction of apprenticeships to attract school leavers into the profession and to offer a structured development programme and training support for future career progression across pathology • Progressing opportunities to automate processes • Scoping the use of Artificial Intelligence to reduce human intervention
Healthcare Scientists	We have 800 Healthcare scientists working across 23 specialisms within NUH. These specialisms are across all the divisions. There are expert Consultant Scientist and regulatory advisory roles within all specialisms. The recruitment challenge is a national one but it is worth noting that there are key challenges with hospitals across the East Midlands **Opportunities exist to:** • Increase HCS assistant roles and opportunities to move into HCS careers through equivalence processes • Support apprenticeships and development to facilitate progression through the HCS pathway • Increase the numbers of training posts, ACPs and Higher Specialist Scientific Trainees • Develop HCS leadership roles at local, system and regional levels • Grow Clinical-Academic posts across HCS to strengthen Research & Innovation
Breast Screening Services	Shortage of mammography and radiology staff have led to the introduction of the Mammography Associate (Apprenticeship) role from 2020-21
Medical	Several areas present hard to fill Medical posts and have been subject to repeated recruitment attempts – e.g. Radiology, Ophthalmology, Urology (surgical and diagnostic), Emergency Department, Acute Medicine, Clinical and Medical Oncology and Haematology/Bone Marrow Transplant (BMT) posts. We have a well-developed Trust Grade Programme and have employed 6 Physicians Associates to help with doctors in training shortages and support development of the alternative workforce. We are supporting a number of current staff to complete the CESR programme and have appointed a limited number of Associate Specialists.

	The next set of priority developments will involve: • Working with HEE to ensure early identification of junior doctor workforce gaps and taking proactive steps to rectify and mitigate • Focus on growing our own staff, preparing and supporting junior doctors at every level of their training at NUH to become consultants and not exclusively through formal programmes • Creating and supporting CESR programme within Acute Medicine – August 21 • Continuation of Trust's Trust Grade strategy as well as an exploration of new roles and grades **Engagement through the PCBC process has flagged requirements for specific investment in the following areas:** **Neonatologist Consultants –** required to meet BAPM guidance **Neonatal Middle Grades –** required to deliver the demand of the new Junior Doctor contract **Obstetric Consultants –** to provide resident Consultant level cover
Pharmacy	Requirement to keep up with the volume and pace of expansion – particularly band 7 pharmacists and band 4/5 technicians bands. • Exploration of over recruitment of the former at the time of year when there is an increased number of these qualifying for band 7 posts
Occupational Therapy	Areas of specific focus include: • planned action around apprenticeships (OT apprenticeships in Jan 2021) • Proactive recruitment rounds to capture new graduates in the graduate windows.

Table 11 Workforce strategies by clinical specialty

8.1.1.5 Specific workforce benefits for clinical models of care

In addition, work has been done to highlight the specific staff benefits for each of the proposed models of care for family care, elective care, emergency care and cancer. These are detailed in Table 12.

Model of care area	Health and well-being	Independence, care, quality	Effective resource utilisation
Family care	• Expand roles of midwives, nurses and other clinicians to work at the top of their registration • Multi professional learning and training to break down barriers between professions • Closer collaboration between general surgical trainees and paediatric surgeons	• Develop roles of paediatric specialist nurses, advance nurse practitioners and nurse consultants • Develop expert neonatal nurses and expand roles for allied health professionals (AHP's) • Train nurses, physiotherapists and sonographers to conduct diagnostic and therapeutic procedures	• Pathways standardised and integrated across ICS providers • Staff across the ICS use a common set of digital tools, accessing information from any location • Consolidation of maternity and gynaecology rotas for efficiency
Elective care	• Nurse led discharge taking up work usually undertaken by doctors • Focus on wellbeing, access to support, rota management, rest and education areas • Reviewing new models of care , job plans and rota management	• The development and expansion of existing roles • Specialty collaboration with universities in research and innovation • Focus on education and teaching time for clinical staff.	• Rebalanced workforce with new model of care 7 day service and care in the community • Greater expertise and specialism from consolidation and development of centre of excellence • Pathway standardisation to reduce unwarranted clinical variation minimising disruption to patients
Emergency care	• Increased opportunities for collaborative working • and cross specialty learning.	• Improved environment and facilities for the workforce which would improve staff satisfaction.	• Consolidation of emergency care at QMC would deliver workforce efficiencies and greater rota resilience.

	• A fit for purpose environment and facilities which would improve staff satisfaction • Opportunity to improve retention and recruitment with improved service identity.	• Increased opportunities to develop new skills, implement new treatments • and new therapies. • Single site working improves training opportunities for staff	• In turn this would free up clinical time to support the clinical model of care in the community. • Increased flexible working with flexible shift patterns. • A more engaged and resilient workforce.
Cancer services	• Paediatric and adult cancer clinicians would be on one site for advice • Co-location supports extensive training and development opportunities in cancer care • Implementation of latest cancer detection technologies, attracting world class talent	• Exposure for clinical oncologists in training to 'acutely unwell' adult patients • Co-location of ENT, maxillo-facial, thoracic, upper GI, lung and plastics cancer therapists • NUH at the forefront of research and innovation in support of cancer services	• Increase collaborative cross-specialty working • Robust workforce planning to include job planning and new ways of working • Pathway standardisation would reduce clinical variation

Table 12: Models of care staff benefits

Appendix 3 sets out the 'People Plan'; this will continue to develop and support the workforce planning element throughout the life of the Tomorrow's NUH programme. It sets out key challenges and considerations that have been identified through engagement through the channels mentioned, as well as specific clinical engagement through the clinical workstreams.

8.1.2 Workforce planning

To deliver the ambitions of the People Plan and realise the positive impacts, workforce planning for NUH will be underpinned by data and implement an evidence-based methodology.

In 2023, after 100 days as NUH's new Chief Executive, Anthony May published the report, People First identifying the need for NUH to focus on emergency care flow, recruitment and retention, and leadership and culture, implementing a series of interlocking enabling strategies designed to achieve these three top priorities.

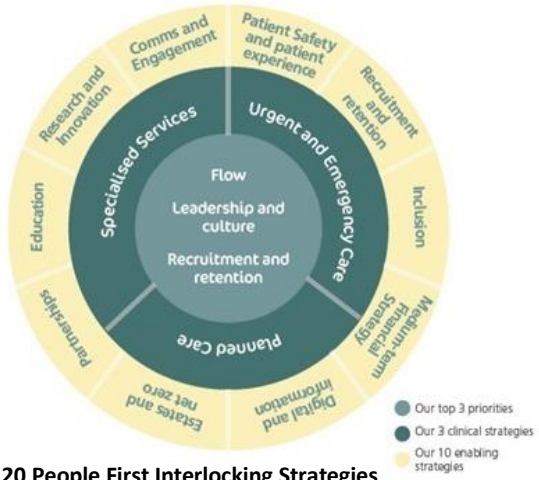


Fig 120 People First Interlocking Strategies

The NUH People Strategy was approved in November 2022 and has been refreshed in 2023 to align with the Recruitment and Retention, Inclusion (Culture and Leadership) and Education enabling strategies of the 'People First' Report.

The Recruitment and Retention Enabling Strategy, which Workforce Planning has been allocated under, has the high level aim to become the employer of choice by creating an environment that supports the recruitment and retention of the most talented staff. To develop a highly skilled, compassionate, and flexible workforce that is equipped to deliver sustainable and resilient services to meet the needs of patients.

8.1.2.1 The Recruitment & Retention Taskforce

The Recruitment & Retention Taskforce, led by NUH's chief Executive, has four sub groups and reports quarterly into Trust Leadership Board:

- Recruitment - Project aim/ status. Recruitment Delivery Group will increase the number of candidates applying for roles at the Trust. To provide rapid on boarding for candidates whilst complying with all legal requirements for recruitment of staff. To increase the positive experience of candidates first contact with the Trust. To promote the Trust as an employer of choice.
- Retention - The retention taskforce will deliver a retention plan for NUH for 12 months with targets regarding short term quick wins and medium to longer term changes of policy and practice. It will deliver against 6 agreed priority objectives

aligned with the people plan. A retention communications plan will support the work.

- Temporary Staffing - Will support the reduction in reliance of high cost long term agency workers across the organisation, developing sustainable workforce solutions with all Divisions. There will be a focus on reducing the usage of off Framework agency workers and work to increase the compliance with the national set agency rules
- Workforce Planning Transformation Delivery Group - WPTDG will identify difficult and hard to fill workforce gaps; understanding what can be done differently within the workforce space, identifying the programmes of work required to establish a series of projects and outcome measures

8.1.2.2 Taskforce Metrics to date

The Trust turnover rate peaked in July 2022 and has seen month on month reductions to the current position of 11.58%. The Trust has seen vacancies reduce month on month from a peak in January 2023. Along with a consistent reduction in time to hire in the same period January 2023 – May 2023.

8.1.2.3 Recruitment & Retention Delivery Plan & Metrics

Over the next three years a number of deliverables have been identified across the four work streams which will move NUH towards its targets. For 2023/24 these included the achieved goals of the development of divisional workforce plans, reducing time to hire to 45 days and reviewing the controls and governance for agency usage. Moving towards 2025/26 sees plans to growing our own workforce working with our partners in local authorities, schools and universities, developing the international recruitment offer and expanding agile working opportunities.

8.1.2.4 Development of workforce plans at Trust & Divisional levels

The 2023/24 Trusts Annual Planning process has seen workforce planning intelligence strengthened with the embedding of workforce intelligence acquisition alongside activity and finance. From this process has been the opportunity for improved line-of-sight around cross-division interdependencies and ability to identify potential gaps / opportunities to work differently, with Divisional priorities fed into Professional Groups. This latticed methodology enabled cross-organisational insight and coordination highlighting the top workforce-related priorities as:

- Retain and Develop / Staff Wellbeing
- New Ways of Working / Roles to Mitigate Gaps
- Grow Our Own / Apprenticeships
- Focused Recruitment to Vacant Positions

Divisions and Professional Groups were also able to identify organisational / corporate support required to (further) unlock localised blockages and optimise resources across NUH. The most commonly referenced enablers, (Fig 121 below), mapped to People First priorities.

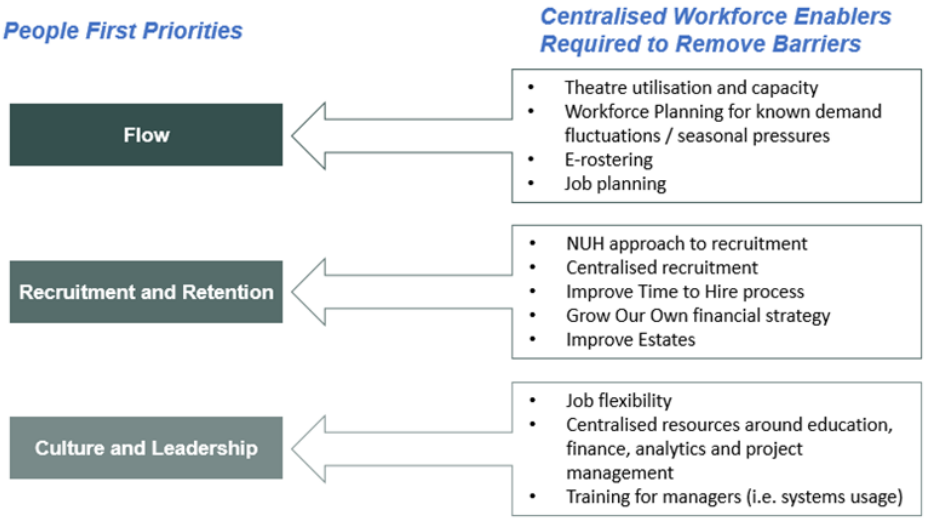


Fig 121 People First Priorities / Enablers

8.1.2.5 Organisational workforce planning skill set

It's important (for the organisation's development and to support the organisation's direction of travel) for NUH to develop a Workforce Planning training offer that is built sustainably, is mindful of resources, the need to work differently and considers the organisation's capacity given other priorities and resources. That this skill set development is linked to the development of skill sets in demand and capacity training.

At NUH the skill of Workforce Planning can be broken down into 3 T's: Transactional Workforce planning (Horizon 1), Tactical Workforce planning (Horizon 2) and Transformational Workforce planning (Horizon 3) and explore and advocate which of the 3 areas are required by job role see Fig 122 below.

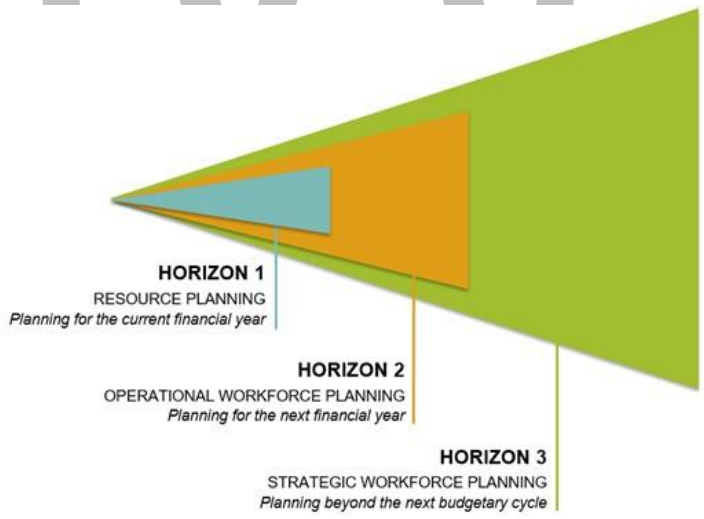


Fig 122 Workforce Planning Skill Set

8.1.2.6 System oversight of the people plan

NUH is an active partner in the newly formed ICS People and Culture Planning Performance and Risk Group, part of the monthly assurance process of the ICB in managing and monitoring the system People Plan that feeds into the Regional reporting process.

8.2 Higher Education Institutions (HEIs)

At Nottingham University Hospitals NHS Trust (NUH) professions work closely with our local higher education institutions (HEIs) and also with more distant education providers. For example NUH Pharmacy works in partnership with the University of Nottingham's School of Pharmacy. In the next few years pharmacy undergraduate education is undergoing key reforms, with the rollout of the new initial education and training standards set out by the profession body and NUH are closely working with them to reform the programme.

The Physiotherapy team at NUH have been involved with the programme revalidation at Nottingham University School of Physiotherapy since 2022. This has led to a redesign of the programme content and placements associated with their programme and Orthotics have been involved with a complete programme design at Derby University.

There are strong and established working relationships in nursing and midwifery between key Higher Education Institution partners, the Assistant Directors of Nursing lead the NUH Institute for Care Excellence encompassing research and innovation; practice development, nurse education and international standards of care excellence for nursing across the Trust. Key partnerships include the University of Nottingham, Nottingham Trent University and University of Derby for both research and education, including undergraduate and post graduate education, research training, development and delivery. There is a current co-design programme between NUH and University of Nottingham, with nursing and physiotherapy considering the needs of the workforce in the future and the potential for shared education.

NUH nursing teams have been a key partner in establishing undergraduate nurse education at Nottingham Trent University as a new training provider from 2020. In addition collaborative models of delivery for speciality post registration education have been established with Nottingham Trent University and delivery of these programmes is in partnership. This includes designing an innovative work based degree 'top up' programme, that enables experienced nurses, midwives and operating department practitioners, who qualified with diplomas to add academic credits and become degree qualified. As part of this degree programme, NUH staff undertake a service improvement project focused on either improving patient outcomes, improving patient experience, or improving staff experience in their clinical areas. These projects are having a direct and positive impact in practice.

As a teaching trust NUH remain committed to further collaboration with the Universities locally (and wider), to support clinical placement expansion, alongside the needs of the NHS today to educate more health and social care workers. Pharmacy as an example employs teacher practitioners which is a role that benefits all by providing clinical service to our patients and educating the pharmacy undergraduate workforce of the future.

Many of professions at NUH employ staff to support the students from HEIs on placement to ensure an exemplary quality of placement. Much work was undertaken during the COVID pandemic to ensure the safety of students and professionals in the NHS workplace – which involved joint online seminars with students and staff of the HEIs and NUH. This close communication and partnership working to improve student and learner experience continues, with new and increasing opportunities for apprenticeship routes to training now established for nursing, nursing associates, advanced clinical practitioners and a range of other clinical professions including operating department practitioners (ODPs) and radiologists. These apprenticeships are developed and delivered in partnership between NUH and our HEIs.

8.3 Digital

Digital enablement is key to the changes we would make across the health system to improve the quality of care that we can offer. Additionally, as highlighted in section 7.5.5, we have considered how we can reduce the risk of digital exclusion and ensure health inequalities are not exacerbated. There are two strategies which feed into the how we meet our digital aspirations – the wider Nottingham and Nottinghamshire Integrated Care System (ICS) data, analytics, information and technology (DAIT) strategy (see Appendix 31) and the Tomorrow's NUH Digital strategy (see Appendix 32).

Our ambition is to create efficient, digitally enabled smart hospitals that support a transformed clinical model to meet the evolving needs of patients and staff in the modern world. We will deliver patient first, outcome-focused care in a boundless health ecosystem that utilises the power of shared data to impact on population health planning. We aspire to be at the very forefront of digital innovation, a global digital exemplar that shares best practice with public sector partners whilst ensuring pragmatic adoption of technology based on robust case studies and benefit methodology. We will introduce benefits-led transformative technology that will afford patients greater control over their care whilst supporting staff to spend more time doing what they entered the health profession to do; deliver quality patient centred care. This will be achieved through the implementation of integrated, interoperable systems that are secure by design and will be underpinned by a 'people-first' over 'technology-first' ethos.

8.3.1 Data, analytics, information and technology (DAIT) strategy

The system vision for DAIT is 'for our citizens and service users to engage with us digitally and for our front line professionals to be supported by digital systems to make their work easier by giving them access to everything they need.' The strategy describes the service transformation and level of digital maturity which the system requires to successfully achieve this vision, which would in turn support the delivery of the ICS shared vision.

The strategy sets out what success would feel like for people. As citizen living in Nottingham and Nottinghamshire this means:

- We would support our population by providing them with the skills, training and tools to access digital health and care services in order to empower and enable them to manage their health and care and reduce health inequalities and social isolation.

- We would not worsen digital inequalities; we would work to reduce them.
- We would provide our population with public facing digital health and care service to enable them to access health and care services digitally from a single trusted place and provide them with the information they need about their health and care and community services.
- We would reduce the number of times people have to repeat themselves to health and care services - by making the right information available at the right time.

As a person receiving support from our health and care system:

- You would be able to communicate with health and care professionals through a single secure application, the NHS App. You would be provided with a range of information and online services to support the delivery of your health and care services.
- We would improve how we proactively identify the health and care needs of our population in order to identify and put in place support and treatment that our population need in order to stay well.
- Your data is captured by electronic health and care systems which would be interoperable to make clinical information visible to professionals and service users where required. Information would be held and moved safely with regular testing to ensure that the systems are secure.

As a person working in our health and care system:

- We would provide support and training to our health and care professionals to develop the skills that they need to use digital technology in order to enable them to undertake their job to the best of their ability.
- All health and care professionals would have the right tools to do their job and would be supported by digital infrastructure to deliver services in any of our buildings, community and people's homes.
- We would provide the people involved in providing health and care with the information they need in one place to enable them to provide the most appropriate health and care to our population.

8.3.1.1 System approach to digital inclusion – Connected Nottinghamshire

Connected Nottinghamshire is a programme of transformation to develop the local digital roadmap for Nottinghamshire and led the development of the DAIT strategy working with stakeholders across the ICS. There is a specific digital and social inclusion project as part of the programme called 'Get Nottinghamshire Connected' which supports the most excluded people across the city and county to gain the essential skills and confidence they need to start using technology and get connected. The DAIT strategy is built upon an extensive programme of research and engagement, which was undertaken with the objective of understanding what people wanted from digital health and care, and creating a streamlined user experience. One of the findings of this research was a correlation between areas of deprivation and digital exclusion.

As detailed in the DAIT strategy, the NHS App is the single point of digital access for patients in Nottingham and Nottinghamshire, with patients able to access their own health and care

record. There are also a number of other schemes which provide support within the community to mitigate the risk that further digital delivery of services would further increase health inequalities:

- Support phone line which offers free IT help including support with the NHS App and access to free training.
- Tools, resources and useful information to support getting online, including links to local service directories and support to with virtual platforms.
- Digital support hubs that offer free digital and technology training in community spaces.
- Digital ambassadors' network – a network of passionate staff and volunteers from across the system to act as champions to promote the benefits of getting online.
- Tablet lending scheme to organisations and community groups.

Get Nottinghamshire Connected is now working with organisations across the city and county and developed networks across communities to promote digital support and enable access to digital health and care services. The DAIT Board has committed to refreshing the public engagement with a view to understanding what the impact of the COVID-19 pandemic has been upon digital access to health and care services, and if there have been any additional barriers experienced or challenges as a result.

8.3.2 Tomorrow's NUH digital strategy

Work has been done on the TNUH digital strategy specifically, with extensive research on the current position of digital, the capabilities, the gaps and what we should aspire to in terms of the New Hospitals Programme (NHP) digital blueprint, the NHS Long Term Plan, and what good looks like framework.

Understanding what the vision for the digital strategy looks like requires awareness of the current challenges with regards to digital. Some of the key challenges picked up were:

- Changes in patient populations and their clinical needs
- Greater patient expectations
- Recognition that a lot of care can be provided for better in community settings
- Advances in both clinical knowledge and technology
- Financial and funding challenges
- Being able to meet requirement to measure quality and provide good governance

8.3.2.1 Context for the strategy

The Tomorrow's NUH digital strategy has been considered in the context of wider digital aims and frameworks – including the NHS Long Term Plan (LTP), the New Hospitals Programme (NHP) digital blueprint and the Atos NHSX Digital capability model. We also researched global best practice such as the Global Digital Exemplars Programme, engaged extensively with corporate, academic partners and other trusts.

In terms of the NHS LTP, there are a number of digital priorities which have been outlined in Figure 122 [147].

- Create straightforward digital access to NHS services, and help patients and their carers manage their health
- Ensure that clinicians can access and interact with patient records and care plans wherever they are
- Use decision support and artificial intelligence (AI) to help clinicians in applying best practice, eliminate unwarranted variation across the whole pathway of care, and support patients managing their health and condition
- Use predictive techniques to support local health systems to plan care for populations
- Use intuitive tools to capture data as a by-product of care in ways that empower clinicians and reduce their administrative burden
- Protect patients' privacy and give them control over their medical record
- Link clinical, genomic and other data to support the development of new treatments to improve the NHS, making data captured for care available for clinical research, and publish, as open data, aggregate metrics about NHS performance and services
- Ensure NHS systems and NHS data are secure through implementation of security monitoring systems and staff education
- Mandate and rigorously enforce technology standards (as described in the Future of Healthcare) to ensure data is interoperable and accessible
- Encourage of world leading health IT industry in England with a supportive environment for software developers and innovators

Figure 122: NHS Long Term Plan digital priorities

The NHP sets out a digital vision which outline five themes for cutting edge facilities underpinned by the most up to date technology, informed by best practice, highlighted in Figure 123. The idea is that by harnessing the opportunities provided by this technology and digital enablement, safety, quality, efficiency and productivity can be maximised.

[147] NHSE Long Term Plan, 2019. Chapter 5: Digitally-enabled care will go mainstream across the NHS. https://www.longtermplan.nhs.uk/online-version/chapter-5-digitally-enabled-care-will-go-mainstream-across-the-nhs/

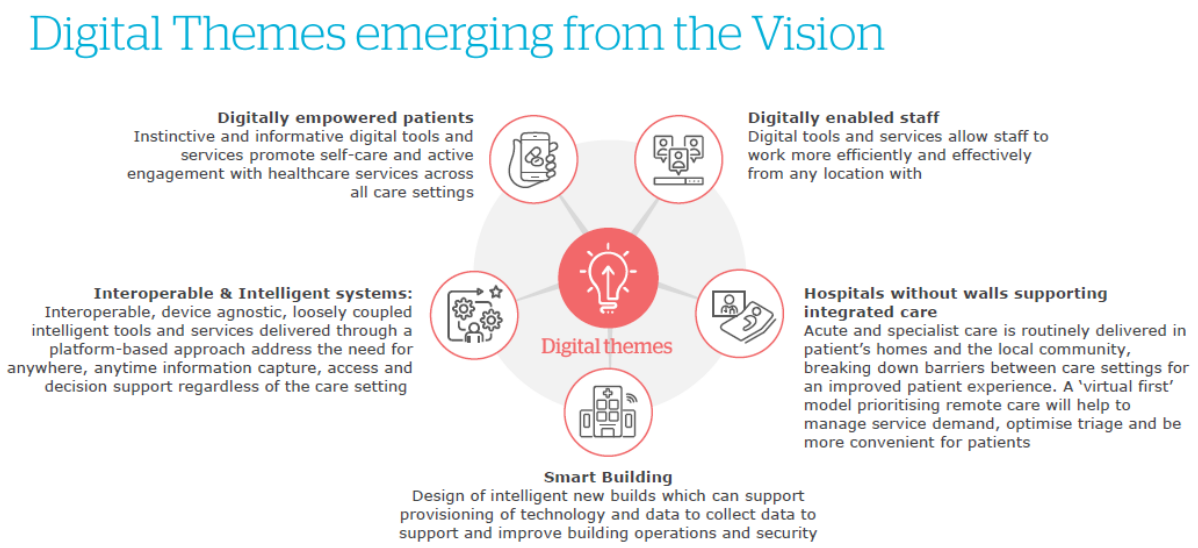


Figure 123: Digital themes from the NHP digital blueprint

In addition to the themes, there are a set of design principles to ensure technology and data is considered at all stage of the build process. These are shown in Figure 124:

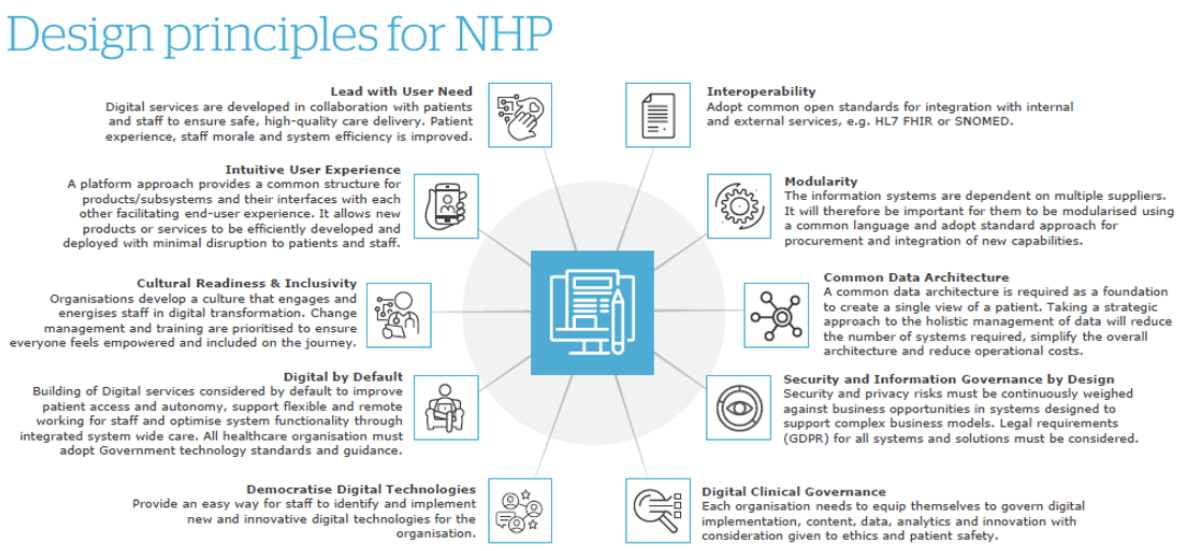


Figure 124: Design principles for the NHP digital blueprint

Finally, the Atos NHSX Digital Capability Model has been considered, which outlines the core capabilities of an NHS organisation needed for a digital healthcare facility[148]. Please see Appendix 28 for this model.

8.3.2.2 Visionary blueprint for Tomorrow's NUH digital work

In light of this, a visionary blueprint has been created for TNUH's digital work. This outlines key technologies which fall into three brackets:

[148] Atos, 2022. https://atos.net/en/client-stories/nhsx

- Fabric – deals with delivering resource efficiency and sustainable buildings providing personalised experiences to staff, patients and their carers
- Footprint – deals with the interaction of the new building and the wider care ecosystem
- Flow – deals with the operating model and clinical pathways.

The timeframe for which each technology and area can be achieved has been mapped out for now, near term (0-2 years), medium term (2-5 years) and the long term (5-10 years). In addition, they have been aligned to the existing capabilities. For more detailed information on this please see the TNUH digital strategy in Appendix 27.

8.3.2.2.1 Digital roadmap, three-year plan and engagement strategy

In order to achieve the TNUH digital strategic aims, a roadmap (see Figure 125) has been outlined until 2024/25, which promises to improve patient experience and achieve better health outcomes through investment into digital. Key areas of provision are:

- Shared electronic patient records
- Improved real-time data capture
- Public facing digital services
- Analytics and intelligence to support initiatives
- Develop a single summary health and care record
- Complete digitisation of providers by 2024.

In order to ensure smooth integration of our digital strategy and align all relevant stakeholder with our ambitions, we have outlined key engagement workstreams to achieve our goals of engaging with multiple groups around the New Hospital Programme (NHP) blueprint themes, integrate technologies with future proofed design and keep patients at the forefront of whatever we do. We would have steering groups with multiple engagement rounds and conduct surveys and workshops to elicit requirements, provide assurance and evaluate products. For more detail on the specific engagement workstreams, please see the TNUH digital strategy in Appendix 27

8.3.2.2.2 Existing digital innovations

NUH has implemented many digital innovations over the last 10 years; from ground-breaking mobile technology for clinical teams; to cutting edge, specialist clinical systems; innovative collaborations across multiple organisations for clinical benefit (e.g. EMRAD); and a progressive network infrastructure. As part of our digital strategy we also have a digital enablement roadmap which outlines our desired future vision, ultimately leading towards Tomorrow's NUH. Within that roadmap multiple digital transformation projects are in the process of being undertaken, for example:

- **Digital Dictation and Speech Recognition –** This has improved efficiencies in the dictation, transcribing and sending of patient letters, GP letters and many more, saving time and resources.
- **E-Prescribing (ePMA) –** This improves safety and experience amongst staff and patients by reducing the need for paper prescriptions. Sending prescriptions directly to the pharmacy improves the safety measures around the prescribing of drugs and

creates a seamless flow from the ordering of a prescription to the collection by the patient.

- **Digital Letters –** This enables clinical letters to be made available to patients virtually which improves the efficiency of when patients will receive their letters while also reducing paper consumption.
- **Virtual First –** This technology enables remote consultations where possible and appropriate, which reduces the need for patients to make unnecessary trips to the hospital. This also has a positive environmental effect for our local communities by reducing carbon consumption caused by patients travelling to the hospital site.

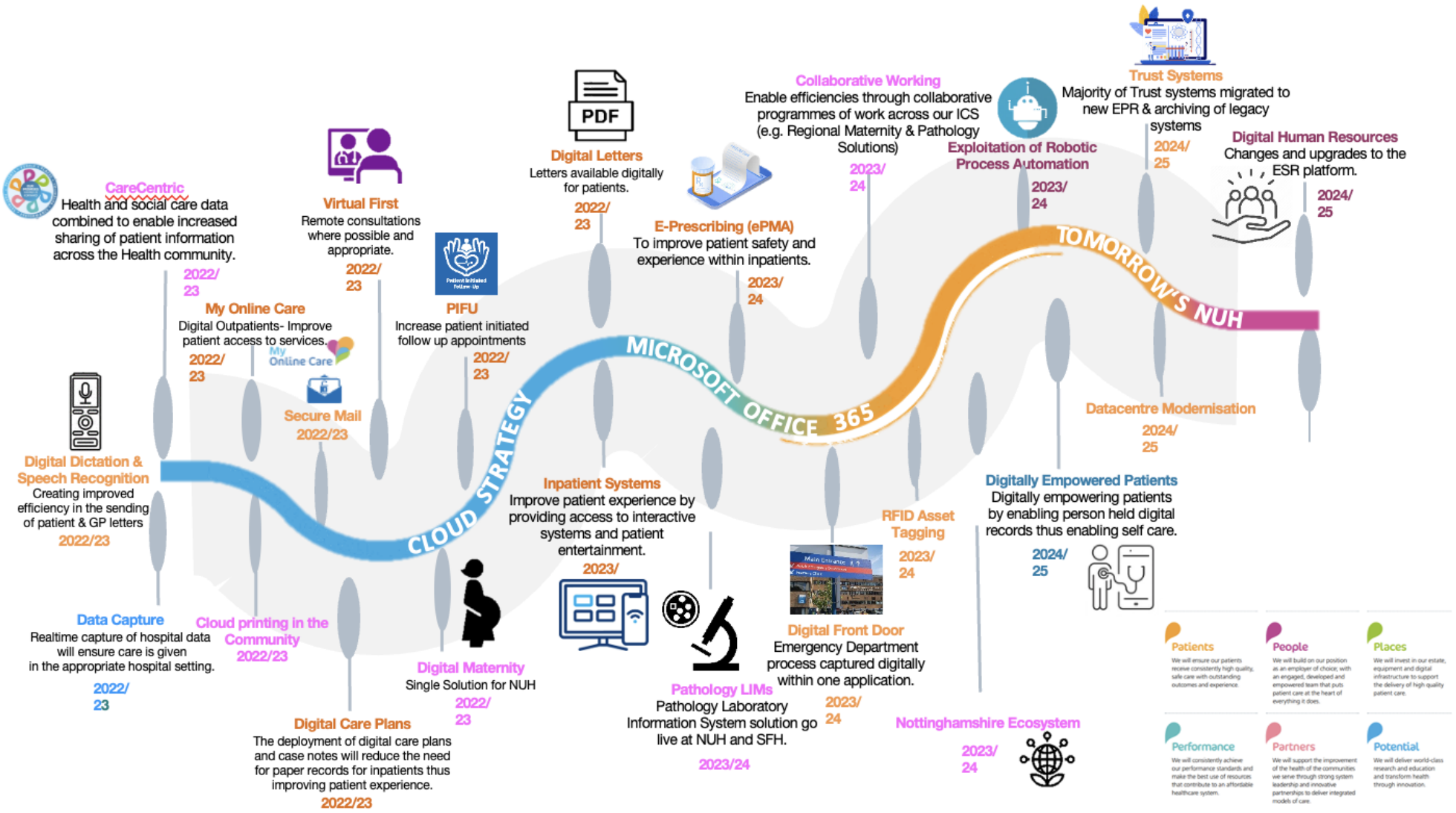


Figure 125: NUH strategic digital roadmap

	2022/23	2023/24	2024/25

Digital Plan	• Digital outpatients – improve patient access to services through "my online care"
	  ○ Increase patient initiated follow up appointments
	  ○ Virtual first, remote consultations where possible (and appropriate)
	  ○ Letters available digitally to patients
	• Digital Inpatients
	  ○ E-prescribing in Inpatients to improve safety and patient experience
	  ○ GS1 compliant wristbands will improve safety through positive patient identification
	  ○ Order communications and reporting in a single solution
	• Digital maternity, single solution deployed at NUH (same solution as Sherwood Forest Hospital)
	• Continuation of upgrades to networks and data-centre facilities to cyber-secure hybrid-cloud capabilities that are also in-line with Tomorrow's NUH planning
		• Digital front door
		  ○ Emergency department process captured digitally within one application
		• Summary health and care record; supporting workflows across our 'ecosystem'
		• Pathology – single LIMs (laboratory information system) solution go live at NUH and Sherwood Forest Hospital
		• Implementation of digital workforce strategy; integration of human resources solutions
		• Achieve cyber essentials +
			• Patient-held digital records – digitally empowering patients enabling self-care
			• Delivery of 'What Good Looks Like' and NHS's 'levelling-up digital maturity' and GP IT futures programme;
			  ○ Migrate most of the Trust's core systems to new electronic patient record (EPR), solutions convergence, fully integrated
			  ○ enable all staff to work in any location where appropriate
			• Digital infrastructure and standards available across the whole of Nottingham University NHS Trust (NUH)

Table 13: TNUH 3 year digital plan

8.3.3 Managing the risks associated with digital transformation

Digital transformation is a major enabler for realising the full ambitions of the TNUH programme, and there are some key risks associated with this. The NHS has not been at the forefront of digital innovation historically, meaning that full potential of digital intervention is difficult to visualise, and the transformational culture required to realise the ambition of a modern intelligent hospital needs developing. Additionally, the systemic change needed to embrace multiple new technologies runs the risk of further marginalising the digitally disenfranchised and contributing to rather than relieving existing staff pressures. Greater adoption of technology also requires greater resilience and resource to safeguard against the critical impact of events such as cyber security attacks.

The NUH Digital Team are currently also working on the National Rehabilitation Centre (NRC), which is another New Hospital Programme scheme. Whilst a smaller scheme overall, the NRC has the same level of ambition is terms of digital transformation and will be completed sooner. This means that the team have the opportunity to evaluate and overcome many of the digital challenges in advance of TNUH implementation. For example, in order to mitigate the risks identified above, a series of technology trials have been planned with academic partners. These trials will allow us to:

- accurately validate and measure benefits,
- ensure that innovation technology meets the needs of staff and patients
- that systems integrate and unlock the potential of big data
- that they are easy to use and positively impact staff experience
- create a digital transformation culture that can continue into TNUH

The approach taken by the Trust Digital team is to align technologies to ambition of the NHP Digital Chapter and at a minimum, meet the portfolio outlined in the MVP & MVP+. These technologies would be proven, scalable and supportable as ‘business as usual’ before any deployments into the TNUH programme. This will very much take the deployment approach of ‘NUH-proven first’ and scaled outwards to new builds, the approach would never be to implement new technologies into new facilities first and scale inwards to NUH.

Section 7.5.6 outlines our mitigations for disbenefits and for digital access we will ensure that:

- patients will always be offered a choice between virtual or in person appointments, and given information about how to book. They will also always be able to choose whether they receive correspondence in hard copy or digitally or both.
- patient letters will include information about digital options, including community access to IT services (such as at libraries, GP surgeries and other health and social care facilities), and these will also be shared with patients when they do attend for in person appointments. All patient information leaflets, including those about accessing digital services, will be available in other languages and formats.
- NUH will always align with and promote national communications messages around digital access, for example in relation to adoption of the NHS App.

- Tomorrow's NUH captures learning from the NRC innovation trials which have co-design groups made up of academics, clinical staff and patient representatives as well as colleagues from transformation and human factors. One of the key tests applied to technology is usability and risks are assessed on both adoption and digital marginalization.

8.4 Estates and sustainability

Estates are one of the major enabling factors behind delivering option 13a. In order to meet the strategic aims of the Tomorrow's NUH programme there must be a fit for purpose estate to support the delivery of safe, efficient and high quality care, as well as make NUH a comfortable place to be treated and to work. Construction of new estates is due to be finalised in 2031 – more details on implementation can be found in section 12.

8.4.1 ICS estates strategy

The ICS Estates Strategy was developed in 18/19 through engagement with partners, NHS SEP and Specialist Commissioners from NHSE. The Estates Strategy mirrors the four key strategic focuses of the ICS with the key implications to improve the use of high quality PFI and LIFT estate, combined with a rationalise but redeveloped high quality hospital estate for the future.

The summer 2019 checkpoint submission of the ICS Estates Strategy to NHSEI further outlined the priority capital schemes and their alignment to the ICS Clinical Service Strategy and national priorities. The outcome of the 2019 checkpoint submission was a "Good" rating.

Tomorrow's NUH is included as a priority in the ICS estates strategy.

8.4.2 Tomorrow's NUH estates strategy

With the new estates plan, the new build elements of City Hospital and QMC are maximised to meet clinical demand, with utilisation of the existing estate where possible and appropriate. The detailed plans for the new estate are included in Appendix 33, but would ensure design is centred around:

- Maximising the building to meet the ambitions of the digital strategy and creating a 'smart healthcare building'
- Meeting the need for relevant clinical adjacencies in design
- Ensuring infrastructure is future proofed for sustainability and efficiency
- Meeting the ambition within the travel plan for sustainable modes of transport and improving access and parking accessibility within NUH, specifically through a multi-storey carpark

Construction of new buildings and refurbishing existing estates would also provide the opportunity to adopt features which would improve the efficiency of buildings and improve care, such as:

- Energy conservation through efficient buildings, fuel-efficient heating and cooling resulting in reduced energy costs and CO2 emissions
- Less maintenance, with future maintenance moving from reactive to proactive

- Quicker and easier cleaning with fewer odd corridors and rooms
- Help towards achieving net zero carbon targets and reduce consumption of energy from unsustainable sources
- Single patient rooms (of which there would be 100% in the new builds and 70% in the refurbished space) which would reduce infection, help to reduce adverse drug events and patient falls, and improve patient satisfaction. Additionally, the space and privacy would allow family members to stay overnight, increasing their involvement in patient care

8.4.2.1 TNUH estates strategy development

The estates annex (Appendix 33) covers the discussions, development and agreement for the estate strategies and design response to the Project Brief developed by the TNUH Programme and Cliniplan (Healthplanners).

The estates annex represents project stage 3 of a three stage process following the principles of 'Developing an Estates Strategy' and sets out a response to the question 'how do we get there?' following the work completed in the 2 previous stages (Where are we now? / Where do we want to be?).

In line with the Green Book guidance this stage has assessed the clinical brief and the developed functional content, schedules of accommodation derived from clinical models describing options for the delivery of care. After moving from a longlist to a shortlist of clinical model options the Estates and Technical team supported by BDP (Architects) have developed a 'Preferred Way Forward' design response to demonstrate how the estate can facilitate the proposed clinical model and allow assessment of this against BAU and Do Minimum Options.

The proposed service configuration and estate response for Queen's Medical Centre and Nottingham City Hospital is described through the sections of the estates annex which are organised to address the Criteria / Criteria Assessment Guidance Notes advised by NHP in Appendix 23.

At the end of the 22/23 financial year, NUH purchased a small parcel of land next to QMC and directly adjacent to car park 2. The purchase of this land was made on the basis of providing short term solutions to multiple current demands on the site for non-clinical services and staff parking as well as providing future flexibility for contractors compounds as NUH continues to develop the site. Our assessment of this land, supported by Architects and Quantity Surveyors is that it is not suitable for the delivery of any of the clinical proposals and therefore does not alter our preferred way forward.

During the creation of this business case, the University of Nottingham indicated that they might wish to relocate the Medical School and relinquish the current building on the Queen's Medical Centre campus. Our assessment supported by architects and quantity surveyors is that whilst this may be an opportunity as a future base for some of our non-clinical services, the costs associated of repurposing the building for clinical use would be prohibitive and therefore whilst we intend to keep any opportunities in mind as the

University develop their thinking, this potential development does not alter our thinking in terms of the ideal configuration of clinical services.

8.4.3 Clinical Brief

The TNUH Clinical Brief defines a series of priorities for delivery of clinical services transformation at QMC and City Hospital based on the forecast clinical activity at year 10 of the programme.

The Preferred Way Forward described in the estates annex illustrates the strategy for the supply of space to meet the clinical scenario across the City and QMC sites. These clinical demands are met by maximising the new-build elements at both City and QMC and re-using existing estate where practicable and within the available funding envelope.

The maximum new build gives: Maximum Capacity and Flexibility and certainty in delivery through:

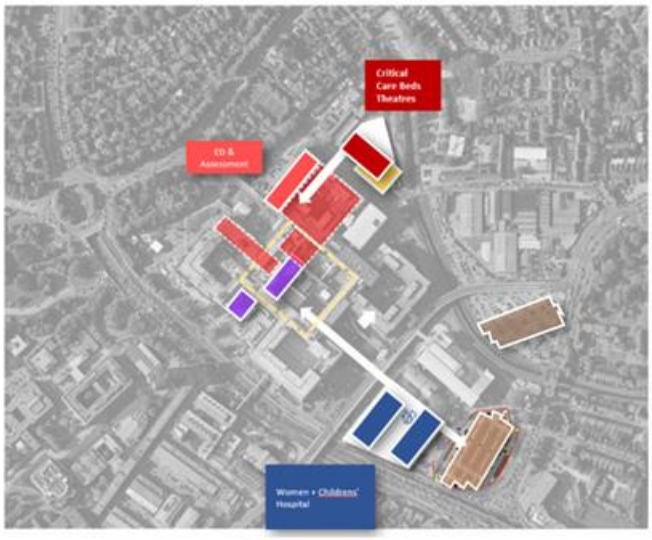
- Standardisation
- MMC
- Low Carbon Estate supporting the route to Net Zero Carbon
- Maximum opportunity for the integration of Digital technology for an Intelligent Hospital addressing the aims of Digital First

The strategy aims to provide suitable capacity, clinical adjacencies and flexibility to meet the clinical demand as well as addressing backlog maintenance and giving certainty in delivery through reduced complexity and optimal programme of works (time to build).
The estates strategy includes the following principal projects:

- QMC: new family health building
- QMC: new cancer centre
- QMC: new critical care and operating theatres
- QMC: upgrade of East Block in-patient facilities
- QMC: upgrade of ED and collocation with new SDEC and assessment facilities
- QMC: targeted investment in pathology, pharmacy, medical equipment, education
- NCH: new critical care and operating theatres
- NCH: creation elective surgical centre of excellence through targeted upgrades in ward stock
- NCH: new ambulatory cancer centre
- NCH: increased endoscopy capacity

The total capital investment required to deliver the principle projects is £1.345bn.

8.4.3.1 QMC Design Principles and Clinical Adjacencies



QMC	
Women's and Children's Hospital	47,748
Theatres & CCU	18,325
Cancer Centre	7,751
Urgent & Emergency Care	9,207
Imaging	2,700
Ward Refurbishment	27,000
Support	4,230
	116,962
Accommodation to be reprovided	
Displacement of Nursery and Currie House buildings	
Displaced accommodation from East Block tbc	
Other On costs / Abnormals	
Helipad	
Electrical Infrastructure upgrade	
Connecting link corridors / bridges	
Demolitions	

Figure 126 QMC proposed estate configuration

Ease of connection for patient staff movement between ED, SDEC, Shortstay, Emergency Imaging, and Critical Care underpins the masterplan. The location of the new building on Car Park 1 with its bridge links provides these critical adjacencies. Paediatric emergency treatment and assessment is moved to the Family Health building with efficient flows between the children's ED and PAU and Paediatric theatres and intensive care areas. Separation of visitor and outpatient flows from inpatient bed/trolley movements is a key consideration and as the design proposals have developed, solutions to meet this requirement have been established both within the stacking / blocking diagrams and the proposals for separate clinical v public links between the Family Health building and the existing QMC Blocks. Overlaying these adjacency objectives with the constraints and opportunities of the existing estate along with the available sites for development, and implementation plans that supports the delivery of clinical priorities with minimum possible impact on the provision of clinical services, has guided the development control plan for the SOC preferred option.

8.4.3.2 NCH design principles and Clinical Adjacencies

NCH		
Women's and Children's Hospital	666	
Theatres & CCU	8,818	
Cancer Centre	4,199	
Inpatients	7,408	
	21,090	
Accommodation to be reprovided		
Block 39 Outpatients/Biomed Research	1,413	GIA
Block 42 Outpatients Clinic 3	519	GIA
Other On costs / Abnormals		
Connecting link corridors / bridges		
Demolitions		

Figure 127 City Hospital Proposed Estate Configuration

Reduction in activity at City Hospital releases a significant amount of the existing buildings – and the long term masterplan which envisages removal of the poor quality estate will also provide an opportunity for site disposal. The detail of this is at an early stage of development and through the next stages of the project the detail will develop. The medium and long range masterplans illustrate the extent to which the hospital services can be consolidated to a core of buildings – more easily accessible for patients and visitors with less reliance on the aging building stock, and shorter routes for patient and staff journeys. This will be facilitate through the development of clinical zones: elective, cancer treatment, diagnostics and specialty inpatient services.

There are a number of further opportunities which would provide further enhancement to both clinical and public routes and arrival – for example:

- Development of a new Elective Surgical Centre entrance enabled through 3rd party funding for café space / staff wellbeing space for example
- Improvements in connecting routes between the consolidated core buildings – looking to separate clinical flows perhaps at the upper floor level of reconstructed 2 storey hospital street with public flows on the floor below.

8.4.4 Design principles

The estates strategy is developed based on some key principles which will be further developed at future stages of capital planning.

8.4.4.1 Design Principles (Inpatients)

The planning of inpatient units can offer flexibility in use, positive staff and patient experience and support the delivery of safe and effective care. The following principles have been identified for inpatient areas:

- Bariatric rooms - availability on each ward
- Acuity adaptable rooms on each ward to enable monitoring of more acutely unwell patients remotely by intensivists and critical care outreach
- 100% single rooms in all new buildings where clinically appropriate
- Quiet rooms in all departments to be used by multiple services as a place to have confidential discussions away from the clinical environment and for spiritual care to be able to support patients and relatives
- Accommodation conducive to mental health needs including a dedicated area within ED and mental health assessment space within the paediatric assessment unit.
- Learning from Covid including consideration of providing single rooms with ‘isolation’ lobbies in new and reconfigured bedded areas and an isolation suite within ED
- No assisted bathrooms as these are generally rarely used
- New build and reconfigured accommodation to improve privacy & dignity by separating inpatient / outpatient flows improving en-suite provision and assessment rooms rather than bays where possible

- Repeatable room planning has been considered in setting up structural bays for the new building footprints – based on accommodating NHS P22 Bedroom / En-Suite standard room design as illustrated in the key room test fit studies.

8.4.4.2 Design Principles Patient-Centric

The planning of inpatient units can offer flexibility in use, positive staff and patient experience and support the delivery of safe and effective care. The following principles have been identified for inpatient areas:

- Patient centered design will be adopted as the approach to developing designs
- Accommodation for patient care will have access to natural day light and ventilation as a priority.
- New build Bed spaces will be provided in single bedrooms by default to provide patient choice, privacy & dignity, support prevention of cross contamination and to provide spaces for high acuity patients which require intensive observations. Multi bed bays will be provided where there is strong clinical justification.
- Procedures will be undertaken in an outpatient setting rather than an operating theatre where possible
- Facilities will be designed to ensure equitable access and experience for all patient groups
- Patients will be supported through effective wayfinding and logical design to navigate around the estate – including the development of the new southern entrance at QMC
- New Buildings will be designed in a way to be conducive to therapeutic recovery
- Designs will ensure privacy & dignity for patients visiting or being admitted for assessment or treatment
- Patient access and experience will be maximised by providing services on days and times that suit the patient group

8.4.4.3 Design Principles Staff-Centric

The planning of inpatient units can offer flexibility in use, positive staff and patient experience and support the delivery of safe and effective care. The following principles have been identified for inpatient areas:

- The design will provide promote the health and wellbeing of staff by providing high quality spaces for staff to work and rest
- Staff will have a dedicated place to eat and facilities to breakout and rest close to their usual place of work
- Office accommodation will support activity based working principles, providing staff with the ability to choose from a variety of settings according to their work need.
- Meeting rooms and office spaces will be centralised and bookable using digital solutions. Technology will be embedded to enable virtual meetings and learning
- There will be no non-clinical administration space within clinical areas
- Staff will move around the patient thus reducing the number of patient movements
- Office environments will have access to natural day light and ventilation.
- Services will adopt the use of technology to drive the transition away from face to face attendances where appropriate

- The design will respond to mobile and agile working models

The provision of a Staff Wellbeing hub, is considered in the opportunity for the expanded scope of the new southern entrance building; potential to provide staff only access to rest areas, café space, meeting rooms and quiet working spaces, staff cycle change and showers. The master plan will address cycle routes into the site and safe / secure cycle storage.

8.4.5 Sustainability

Ensuring Nottingham University Hospitals NHS Trust (NUH) is sustainable moving into the future is a key priority, and links in with how we address estates as an enabler in the Tomorrow's NUH programme. The NUH Green Plan 2022 – 2025 (Appendix 294) ties in with the estates strategy (Appendix 33) which outlines what is required to achieve Tomorrow's NUH. The Green Plan aims to ensure the key infrastructure investment decisions are future proofed in terms of sustainable efficiency. The vision for this is:

- By 2040, NUH will have achieved a Net Zero carbon operation for all its emissions from heating and energy use and 80% reduction of its Carbon Footprint Plus (indirect emissions including procurement).
- Access to NUH services will be low carbon via telemedicine and by ensuring the Trust has good quality facilities to incentivise active travel, electric vehicle use and excellent public transport links.
- NUH will manage an estate upgraded to minimise energy demand which will be provided by low/zero carbon energy sources.
- By 2025, NUH will continue connecting buildings at the City Hospital to the new LTHW network delivered under the CEP Project. NUH will take initial steps in de-steaming the QMC site by installing a ground source heat pump and making improvements to the building insulation.
- By 2025, NUH will have in place an Energy Strategy to net zero which informs the Engineering Strategy and hence the Estate Strategy for each campus.
- NUH will see the installation of new facilities to maximise sustainable access to health services through the established telemedicine platform.
- By 2025, NUH will have made foundation steps to ensure the core of its supply chain has net zero carbon plans and internal projects aiming to reduce wastage of resources.

In line with both the NUH Green Plan and government policy, any work on estates for option 13a would aim to achieve net zero carbon buildings. There would be two sources of emissions related to the estates which we have identified, embodied carbon emissions and operational carbon emissions:

- Embodied – emissions related to the construction process of any new buildings or refurbishment e.g. materials, transport of people and equipment and waste disposal
- Operational – emissions related to the ongoing operation of the hospitals e.g. heating, lighting, use of equipment, water and sewerage

In order to ensure our buildings are net zero carbon we would:

- Reduce construction impacts: an initial assessment of carbon limits was completed in June 2022 and construction would be designed to minimum construction impacts
- Reduce operational energy use: designing the buildings to reduce operational energy use, where possible, and publishing annual energy consumption targets and actuals
- Increase use of renewable energy: by producing energy on-site (for example, solar panels), where possible and using renewable energy sources where on-site production is not possible
- Off-set carbon: as a last resort, off-setting any remaining carbon and publishing the amount of off-setting on an annual basis

8.4.6 Backlog maintenance

The high levels of backlog maintenance have been referenced in section 4, with costs across QMC and City Hospital sites at £407.31 (2020/21) and rising each year. With new estates we would take advantage of the opportunity to reconfigure existing buildings and tackle poorly performing estates.

Within QMC the approach involves increasing the engineering plant accommodations to meet national standards for environmental conditions within hospitals, access and maintenance. For City Hospital, the reconfiguration of services allows attention to be given to removing buildings which are the highest backlog risk.

8.4.7 Impact on patient care and staff experience

Improvements are expected through the refurbishment of estates from both a clinical and a people perspective. Through refurbishment and fit for purpose estates, two metre space between bed spaces and in patient areas would enable social distancing to be maintained, the increased number single rooms and isolation facilities would reduce the risk of cross infection and ventilation systems would be compliant with national standards. In addition, new and updated facilities should increase staff satisfaction through a better environment in which to provide clinical care, as well as work in.

9 Benefits

This chapter describes the benefits that are expected following the implementation of our clinical model of care and preferred option. The proposed new clinical model of care, combined with the opportunity of significant capital investment form the New Hospital Programme (NHP), is expected to deliver a wide range of positive benefits. These benefits will be felt and experienced by patients, staff, and the communities we serve. We expect the new clinical model of care and the much-needed investment in estate to be a strong component of the Nottingham and Nottinghamshire health care system.

We have developed a benefits framework aligned to the three areas within our case for change:

1. Care to meet the needs of the local population
2. Services which are clinically sustainable
3. Up to date estates and buildings which are fit for purpose

This framework will improve understanding of what will be achieved by the proposed changes and enable us to measure improvements from the programme. This incorporates high-level benefits, benefits directly associated with our model of care, and more granular benefits against which we have calculated the net present social value (NPSV) and benefit cost ration (BCR) for option 13a.

The high-level benefits focus on care delivered in the right place and at the right time, a high quality workforce that can deliver the best possible care, a new clinical model that will enable us to better meet national clinical quality standards, and new buildings that will not only support the new clinical model of care but will also be more efficient to run and better places to work. These are translated across to our clinical model of care, for example in our maternity model, consolidation of women's and children's care at one site allows both efficient and resilient rotas with increase consultant cover and improved training and supervision for staff, as well as access for women and babies to the specialist input they need.

The more granular benefits for each of our proposed areas of change are defined in terms of community and reconfiguration, wider economic, safety, clinical, workforce, income and buildings. We have calculated a non-case releasing or cash releasing benefit and the overall scheme achieves a 3.6 incremental BCR.

We will ensure strong clinical leadership to carefully manage and measure how these benefits are realised to ensure success. This will be based on outputs e.g., reduced average lengths of stay) and expected outcomes (e.g., reduced disability). A pragmatic list of measurable performance indicators will sit alongside the benefits outlined in the benefits framework. These will begin to be realised once we commence implementation. Benefits will follow as soon as we make changes to hospital services and are likely to be maximised after the plans are fully implemented.

9.1 Benefits framework

A benefits framework supports the monitoring of the successful delivery of benefits from the changes as they are implemented. We believe it is important to translate our proposals into specific benefits, so people can have a better understanding of what will be achieved by the proposed changes, and so we can measure improvements from the programme. Setting out the benefits framework also shows that benefits can be realised through the programme and that consideration has been given to how this will be achieved.

In order to demonstrate this, the benefits framework aligns with the three main challenges highlighted in the case for change:

1. Care to meet the needs of the local population
2. Services which are clinically sustainable
3. Up to date estates and buildings which are fit for purpose

9.2 High level benefits

The high level benefits we would expect to realise from the proposed changes, which align to the challenges we highlighted in the case for change (see Section 4) include:

1) Care to meet the needs of the local population

- we have taken account of current and future demand for acute hospital services and changing population need in our planning and design work, acknowledging the interdependencies with ambitions to improve 'out of hospital' care in our system. Redesigning our acute model of care, exploiting efficiencies through different and innovative ways of working in fit for purpose buildings, embracing smart and new technologies, and more integrated working as described above, will help increase efficiency and productivity. We expect our proposals to help us ensure the right hospital services are available, in the right place and at the right time for people in Nottingham and Nottinghamshire now and into the future

2) Services which are clinically sustainable

- creating and maintaining a high quality, sustainable workforce will impact directly and positively on the quality of care that is delivered, and in turn improve outcomes for patients. We have designed a new model of care that we believe will better enable clinical teams and the wider workforce to deliver the best possible care and will better facilitate the development and training of the workforce for the future. In addition, we expect investment in new buildings and facilities to bring benefits in terms of improved staff morale, staff experience, and workforce efficiencies
- supporting safer care by redesigning how we organise and deliver services, including centralising some of our most specialist services on a single site, will allow us to better meet national clinical quality standards, seven-day access to key services and to enhance medical cover. Building more integrated ways of working between acute, primary, community and mental health services, as well as social care and other support services, including building on our 'out of hospital' model, will bring a range of benefits across patient pathways

3) **Up to date estates and buildings which are fit for purpose**
    - Investment in new buildings and a wider estate so we have fit for purpose facilities will play a key role in delivering clinical benefits. New facilities also have other direct benefits such as being more efficient to run, easier (and therefore cheaper) to maintain and clean, able to play a significant role in reducing the risk of hospital-acquired infection and providing an attractive working environment for staff and healing environment for patients.

We will further develop our benefits framework to explicitly describe the inputs and outputs we would expect to see associated with the outcomes we have identified.

9.3 Benefits of the proposed models

There are many detailed benefits related to the model of care (see section 5), which also align to the case for change (see section 4). We have defined the key benefits for the proposed models of care for family care, elective care, emergency care and cancer care in line with the ICS Outcomes framework along the domains of:

- Health and wellbeing
- Independence, care, quality
- Effective resource utilisation

The detailed benefits are shown in **Figures 128 – 131.**

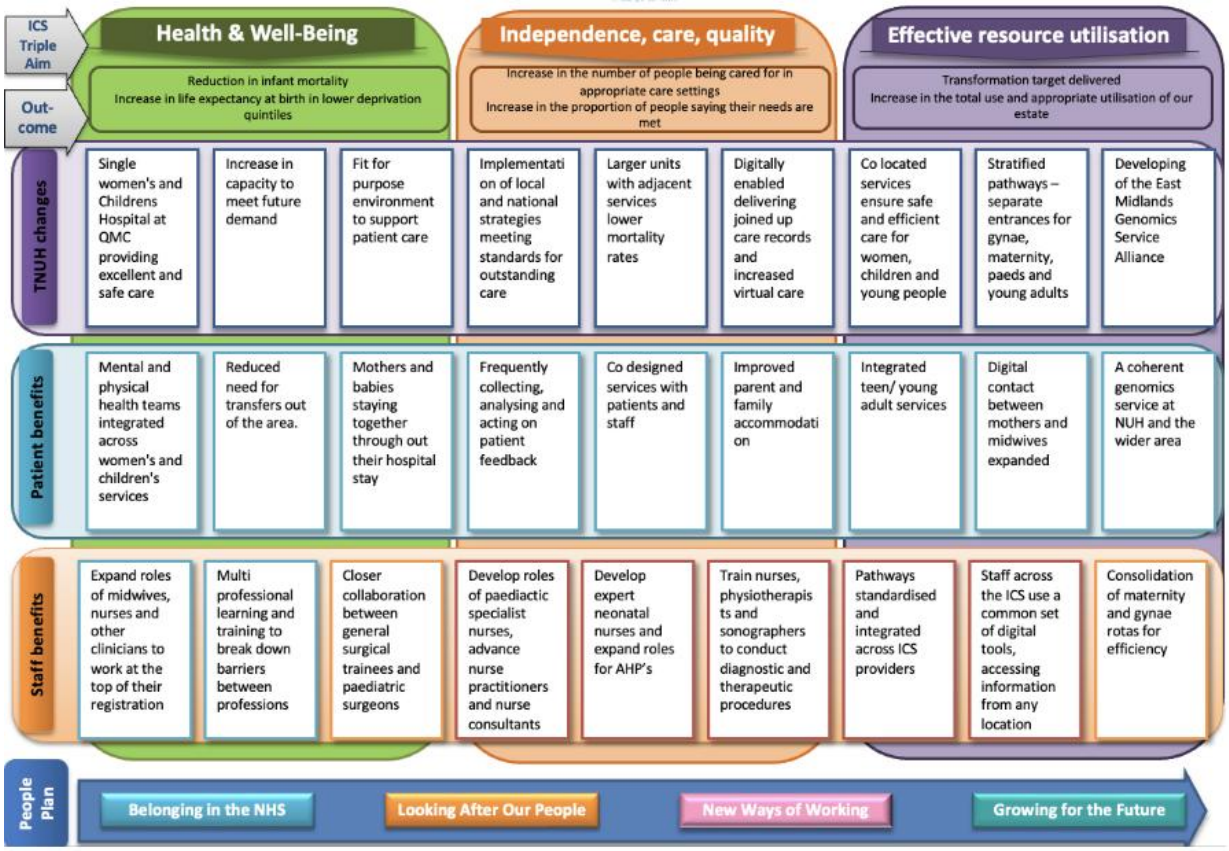


Figure 128: Proposed model of care benefits for family care

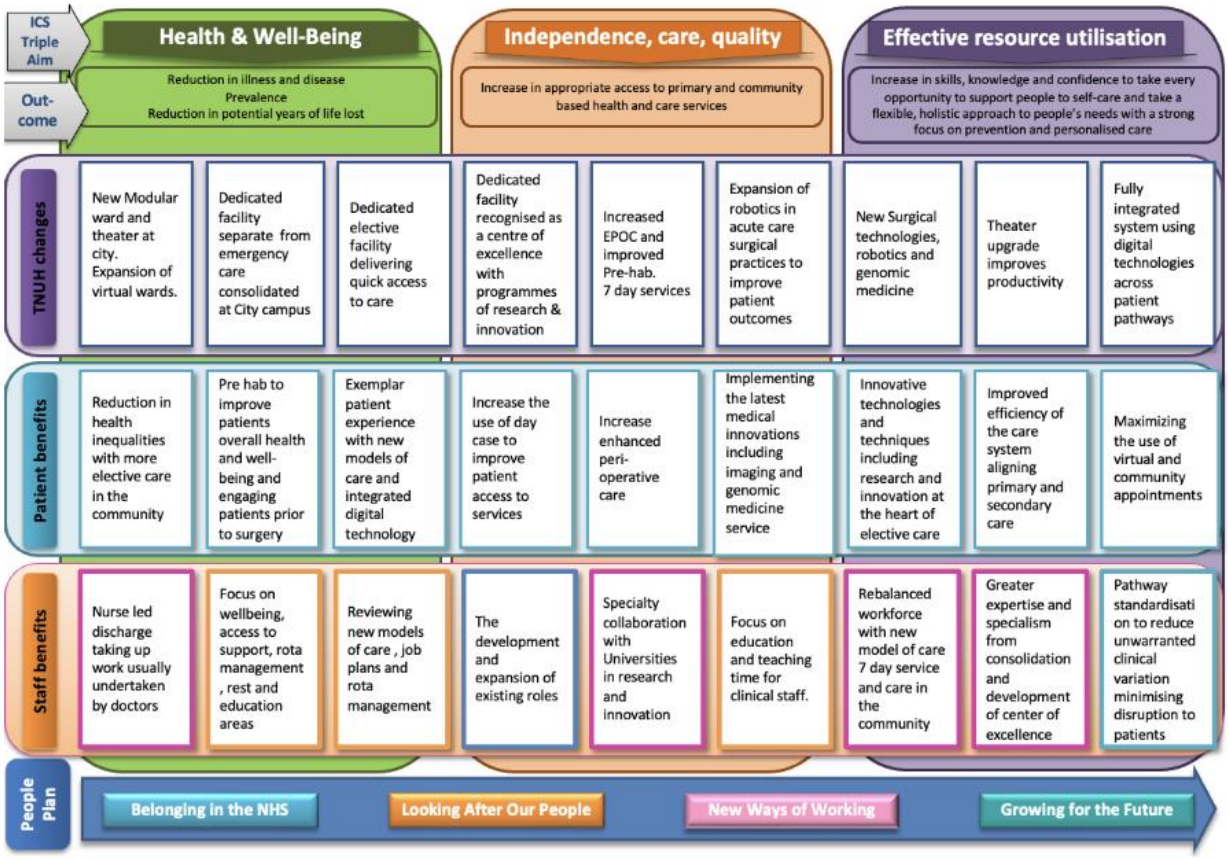


Figure 129: Proposed model of care benefits for elective care

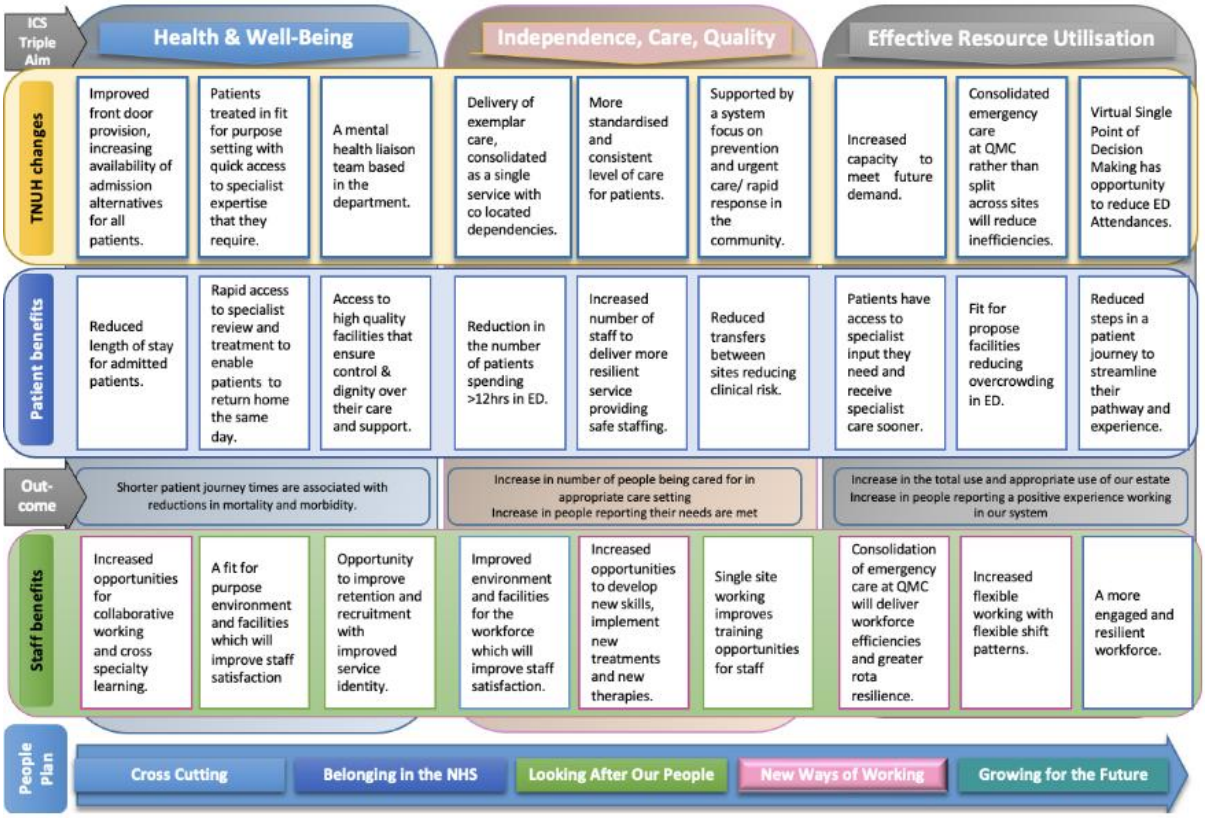


Figure 130: Proposed model of care benefits for emergency care

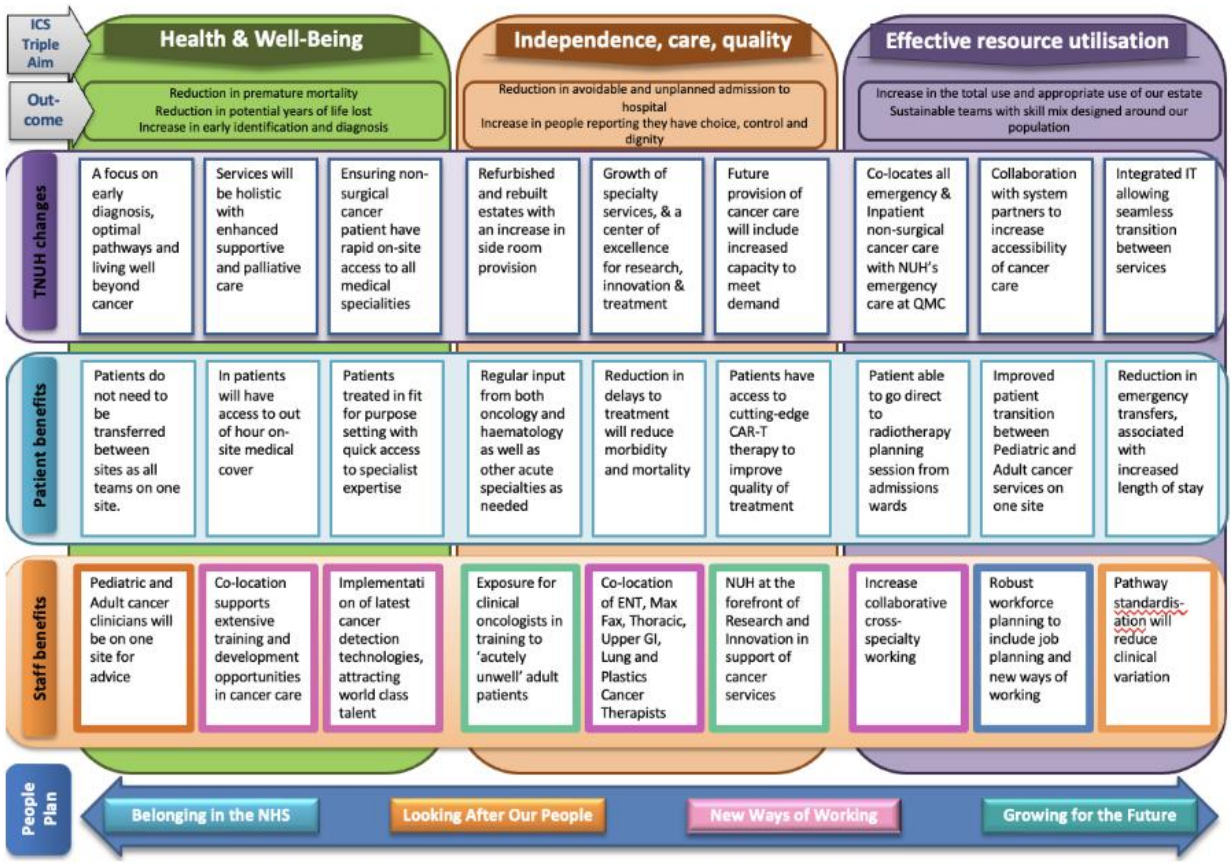


Figure 131: Proposed model of care benefits for cancer services

9.4 Quantification of benefits

Benefits can be a mixture of cash-releasing, quantifiable but not cash-releasing, and qualitative. All are significant and important to realise. Cash-releasing benefits identify where money can be reallocated or the cost of delivering a service is reduced, whereas non cash-releasing benefits are efficiency savings such as staff time saved, but the cost of delivering the service may the same[149].

Where it has been possible to quantify these in terms of a cash-releasing or non-cash-releasing target benefit we have done so, and this is set out in table 14. We have also aligned these to the benefits framework in section 9.1. Table 15 summarises the costs and impact on the net present social value (NPSV) and benefit cost ratio (BCR) for option 13a, our single option for consultation. Both NPSV and BCR are calculations involved in the appraisal of social value. NPSV is defined as the present value of benefits less the present value of costs. It provides a measure of the overall impact of an option[150]. The BCR is defined as a ratio of the present value of benefits to the present value of costs, providing a measure of the benefits relative to costs[150].

Further detail on the expected financial impact of these benefits, and an assessment of how this differs between the options is included in section 7 and in the finance and economic models set out in Appendix 30. Appendix 30 also includes a detailed breakdown of the financial benefits assumptions.

[149] NHS Digital 2022. Financial benefits of personal health records. https://digital.nhs.uk/services/personal-health-records-adoption-service/personal-health-records-adoption-toolkit/benefits-of-personal-health-records/financial-benefits-of-personal-health-records#:~:text=cash%2Dreleasing%20benefits%20are%20where,release%20money%20back%20to%20budgets

[150] Gov.uk, 2022. The Green Book. https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent/the-green-book-2020#valuation-of-costs-and-benefits ,

Benefit framework aim	Benefits in 30/31, undiscounted £m	Benefit description and drivers	Benefit type	Option 13a	
1: Care to meet the needs of the local population	Community and reconfiguration benefits			**Cash-releasing (£m)**	**Non- cash releasing (£m)**
	Emergency care - alternative to attendance in community	Centralisation of emergency portals and improved navigation of emergency offer across system enabled by technology	Cash- releasing	1.0	
	Outpatient demand management	More multi-disciplinary input earlier in pathway and improved digital infrastructure improves referral streaming		0.9	
	Wider economic benefits				
	Reduced emergency transfers	Quality-adjusted life year (QALY) impact of reduced emergency transfers for cancer and non-cancer patients	Societal, QALY		22.2
	SDEC (Cardiac and non-cardiac)	Economic impact of improved SDEC effectiveness			0.3
	Reduction in adverse drug reactions and HCAI	Improved outcomes driven by improved safety measures			0.0

	Reduced emergency attendances and workplace absenteeism through out of hospital care	Impact of more care taking place out of hospital and convenience impacting workplace productivity	Societal, Non-QALY		0.3
	Safety benefits				
	Improvements in harm events	Reduction in healthcare associated infections (HCAI), falls and adverse drug events where design supports improved safety features	Cash-releasing	0.2	
2: Services which are clinically sustainable	Clinical benefits				
	Improved same day emergency care (SDEC) conversion	Conversion of non-elective inpatient (NELIP) to non-elective day case (NELDC) through co-location of ambulatory portals and improved multi-disciplinary input	Cash- releasing	0.6	
	Increasing virtual appointments	Improved digital infrastructure enabling movement to increased virtual %		2.7	
	Reduced patient transfers	Reduced impact of transfers between site due to reconfiguration of services		0.2	
	Maternity clinical negligence scheme for trusts (CNST)	Consolidation of maternity care will improve patient safety through reduced transfers and safe staffing levels		1.9	

	Workforce benefits				
	Reduced staff turnover	A new facility can reduce turnover as a result of increased staff satisfaction	Cash- releasing	5.1	
	Reduced staff absence	A new facility and reduced workforce pressures due to improved clinical model and workforce models can improve sickness and absence rates and overall staff satisfaction		0.3	
	Rota efficiencies through colocation	The co-location of services for women, children and families will lead to rota efficiencies compared to the business as usual (BAU) option		1.2	
	Improved skill mix of workforce	Improved skill mix, new workforce models, reconfiguration of services and improved recruitment will cap agency share		1.0	
3: Up to date buildings and estates which are fit for purpose	Clinical benefits				
	Elective length of stay	Improved patient flow, and therefore length of stay, through improved hospital design, discharge facilities and dedicated elective facility	Cash releasing	2.3	

	Non-elective length of stay	Improved patient flow, and therefore length ofstay, through improved hospital design and discharge facilities		3.8	
	Increased elective to day case conversion	Increased conversion of elective cases to day case due to improved theatre infrastructure and dedicated elective facility		4.7	
	Improved theatre utilisation	Improved co-location and theatre estate/separation from emergency care drives improved productivity		2.0	
	Income and buildings benefits				
	Private income attraction	Improved provision and reputation, increasing demand for private patient services	Cash releasing	4.3	
	Expanded research and development (R&D) income and commercial partnerships	Increased R&D activity undertaken as a result of improved facilities, an inpatient research facility and colocation of oncology and clinical haematology in the clinical research facility.		2.5	
	Subsidised drug costs for R&D patients	Savings from converting NUH patients (particularly additional oncology and clinical haematology) onto funded trials due to increased research capability		3.5	

	Retail revenue	Impact of increased floor space available for retail		0.4	
	Car park income	Increased income from new multi-story car park		0.2	
	Data centre savings	Reduced down time and associated costs due to increased reliability of new data centre		0.2	

Table 14: Benefits values and alignment to the benefit framework

Summary		
	Cash releasing (£m)	Non cash releasing (£m)
Total in-year benefits	38.9	22.8
Total incremental benefits(discounted to 80/81)	1,457	
Total incremental costs(discounted to 80/81)	409	
Incremental NPSV	1,047	
Incremental BCR	**3.55**	

Table 15: Impact of option 13a on NPSV and BCR

9.4.1 Sensitivity analysis

Sensitivity testing was undertaken to assess the impact on the benefits cost ratio (BCR) of a range of scenarios, shown in Figure 132. The sensitivity analysis showed that whilst the BCR would be impacted by increased capital costs, or under delivery of benefits, in both scenarios the BCR remains above 3, indicating good value for money. An increase in costs has a more significant impact that benefits under delivery.

Scenario	BCR impact
1. 10% increase in capital costs for PWF	3.0
2. 10% decrease in benefits	3.4

Figure 132 BCR sensitivity analysis

9.5 Benefits realisation

It is important to make sure that the benefits are delivered, and, after consultation, the benefits framework will be extended to describe the benefits realisation of the proposals.

Benefits realisation needs both careful management and close measurement. Benefits measures will focus on and record both outputs (e.g., reduced average lengths of stay) and expected outcomes (e.g., reduced disability) to demonstrate delivery success. A pragmatic list of measurable performance indicators will sit alongside the benefits outlined in the benefits framework. There can sometimes be a 'dip' in performance during implementation and some changes will not always be viewed positively by individual patients or staff. However, patient safety will always be of over-riding importance.

Benefits tracking is firmly embedded within performance management arrangements under business-as-usual. There will be strong clinical leadership of benefits realisation to support successful delivery of the programme. Wherever possible, existing mechanisms and systems will be used to monitor the realisation of benefits, rather than creating an additional data burden.

Draft implementation plans have been included in this PCBC (see section 12) and are part of the public consultation process. Whilst different elements of the proposals have differing associated timescales, changes to hospital services will start as soon as possible, and realisation of benefits will follow. However, all benefits are likely to be maximised after the plans are fully implemented.

It is sometimes difficult to isolate benefits from specific changes but measuring benefits alongside implementation plans will help. Some improvements may be attributable to several factors but also not seeing improvements against a particular measure may not necessarily mean that the changes have been unsuccessful. Other factors may have arisen which means improvements are not seen but the benefits framework will allow investigation and rectification, if required.

10 Quality assurance

This chapter describes the external assurance and scrutiny that the proposal have undergone. We have undertaken a robust quality assurance process which underpins the programme and gives assurance to this pre-consultation business case. The process undertaken has been assured by NHS England and going to public consultation is dependent on this assurance being received. Our proposals have been independently reviewed by the East Midlands Clinical Senate whose feedback we have acted upon and built into this business case.

The programme has met the five tests for reconfiguration set out by the Secretary of State:

- **TEST #1**: The proposed change can demonstrate strong public and patient engagement.
    - We have had early involvement with patients and the public via our communications and engagement workstream. Our materials have been tailored to meet the needs of the audience and ensure participation.
- **TEST #2**: The proposed change is consistent with current and prospective need for patient choice
    - We have ensured that our proposals maintain choice of services as per the NHS Choice Framework for planned care and maternity services; within emergency care we are working closely with East Midlands Ambulance Service.
- **TEST #3**: The proposed change is underpinned by a clear, clinical evidence base.
    - We developed six clinical design principles to reflect best practice care and tested them with our clinical advisory group; the East Midlands Clinical Senate provided a source of independent, strategic advice throughout
- **TEST #4**: The proposed change to service is owned and led by the commissioners.
    - We have led the development of the PCBC and have been part of the TNUH governance structure
- **TEST #5**: Proposals including significantly reducing hospital bed numbers will have to meet one of the three conditions
    - The proposed service change will not reduce hospital bed numbers and therefore the conditions set out by this test do not apply

In addition, assurance has been received from engagement with the New Hospitals Programme, the Health Overview and Scrutiny Committee, patients through Healthwatch Nottingham and Nottinghamshire, and staff and programme partners through the Strategic Oversight Group (superseded by the Programme and Partnership Board).

In line with the programme governance set, the approvals process for the PCBC includes ratification of information from a number of different groups before submission to the TNUH Programme and Partnerships Board. It has also been reviewed by the Nottingham and Nottinghamshire Integrated Care Board and submitted to NHS England for assurance. The document will form part of the strategic outline case for capital approval, which will be submitted to the New Hospital Programme (NHP) within the Department of Health and Social Care (DHSC). Approval to proceed to consultation will be required from the New Hospital Programme investment committee in addition to successful 'Stage two' assurance from NHS England. A recommendation will be made to the Nottingham University Hospitals NHS Trust Board for discussions, assurance and support. Following assurance, a decision whether to proceed to consultation will be made by a meeting in public of the Nottingham and Nottinghamshire Integrated Care Board.

10.1 Approvals process for the programme recommendations

In line with the programme governance set out in chapter 1, the approvals process for this document is:

- the Tomorrow's Nottingham University Hospitals NHS Trust (TNUH) Clinical Advisory Group, Finance, Estate and Activity Advisory Group, Equality, Engagement & Comms Group, and the PCBC production group have ratified the information that has formed part of this document before being submitted to the TNUH Programme and Partnerships Board
- The TNUH Programme and Partnership Board have reviewed the PCBC and recommended for approval from the ICB Board
- the Nottingham and Nottinghamshire Integrated Care Board have reviewed this document and submitted it to NHS England for assurance
- this document will act as the strategic outline case for capital approval, which will be submitted to the New Hospital Programme (NHP) within the Department of Health and Social Care (DHSC). Approval to proceed to consultation will be required from the New Hospital Programme investment committee in addition to successful 'Stage two' assurance from NHS England
- a recommendation will be made to the Nottingham University Hospitals NHS Trust Board for discussion, assurance, and support
- after assurance, a decision whether to proceed to consultation will be made by a meeting in public of the Nottingham and Nottinghamshire Integrated Care Board

10.2 Engagement and review with the Clinical Senate

The development of the clinical model has undergone a number of independent reviews by the East Midlands Clinical Senate. Clinical senates are a source of independent and objective clinical advice and guidance to local health and care systems, to assist them to make the best decisions about healthcare for the populations they represent. The TNUH programme, Programme has been engaged with an ongoing dialogue with the Clinical Senate since 2020, and there have been formal reviews with a senate panel at three points during this process: full reviews in December 2020 and July 2022 and a thematic review in April 2021. The December 2020 and April 2021 reviews were undertaken virtually due to the Covid-19 restrictions in place at that time. Before each review, we submitted evidence packs for review by the senate panels and queries generated shared back with the programme teams to enable a full and informed discussion on the day of the panel.

We first engaged with the Clinical Senate early on the programme in December 2020 presenting the case for change and the six clinical design principles that underpin the clinical model development. This review took place in tandem with the first round of public engagement and before the options for consultation had been proposed for the programme. The panel members understood the point at which the programme was engaging with them and generated a number of recommendations designed to assist with the development of the programme. Table 16 summarises the key reflections from this review.

Senate reflection/recommendation		TNUH response/action
Service configuration	The Trust would simply not be able to ringfence beds if elective and emergency care services are on the same site	• Considered in options appraisal process (in section 6) contributed to the proposal to rule out a single site option
	Unclear how the Trust would manage periods of surge and pressure on the emergency care services	• Covered in emergency deep dive (Appendix 8)
	QMC and City Hospital are both physically constrained to the extent that a single site model would be exceptionally difficult	• Considered in options appraisal process (in section 6) contributed to the recommendation on not operating to a single site option
Benefits and outcomes	Intended and anticipated clinical outcomes could be more clearly described	• Covered in emergency and maternity/ neonates deep dive (see Appendix 108 and Appendix 11) • Covered in ambulatory deep dive (not part of senate review) (see Appendix 14) • Ongoing work to define clinical outcomes as part of clinical model development
Data and analytics	Need for neonatal data to support the family care case	• Covered in maternity/ neonates deep dive (see Appendix 1011)
	Laudable for the system's ambition to be wholly digital and clearly a lot of work has been undertaken to date. It will be important however with digital technology to not disenfranchise people and potentially widen any health inequalities	• Will be addressed as part of a joint review by NUH digital team and wider Integrated Care System (ICS) digital team. Work to be linked with health inequalities work at both NUH and ICS level. This was included in the integrated impact assessment (see 27) and is currently being taken forward by the programme team
	The panel recommend that the activity modelling is reviewed.	• Covered in clinical senate evidence submission • Ongoing work to review and revise the activity modelling through extensive engagement with the clinical and non-clinical teams

	The panel suggested that the GIRFT Emergency Medicine data is shared with the clinical review team in order for it to be able to see how Nottingham University Hospitals NHS Trust compares nationally	• Covered in emergency deep dive (see Appendix 8)

Table 16: Clinical Senate reflections/recommendations from December 2020 review

We returned to the Clinical Senate in April 2021 for a 'deep dive' thematic review on three clinical areas in the context of the options being considered for consultation at that time: maternity and neonatal services consolidated on to one site; emergency care consolidated on to a single site; and provision for non-surgical cancer inpatient care on the QMC site. The panel generated nine recommendations for further consideration which were fed back into the programme for further development. These nine recommendations and our response are detailed in table 17.

Senate reflection/recommendation	TNUH response/action
The panel recommended that more detailed modelling is undertaken to understand the differences between routine, seasonal, and emergency variation. Furthermore, the system's assumptions and predictions should be revisited to be assured that sufficient capacity has been built into the proposals.	• Further activity and demand analysis has been undertaken and local assurance obtained through: ○ Clinical Commissioning Group (CCG, superseded by Integrated Care Board (ICB)) Finance and risk Committee 26/05/2021 ○ ICS Capacity Cell 08/06/2021 ○ TNUH emergency workstream 29/06/21 • The detailed modelling had been undertaken in respect of the variation in demand, however this work was not explicit within the within the last senate submission. This modelling is attached in Appendix 17)
The panel recommended that the ambulance impact assessment is shared with the clinical review team to be reviewed as part of the evidence base for the system's proposals.	• Meeting held with East Midlands Ambulance Service (EMAS) on 24/06/2021 which confirmed that operationally they had no concerns regarding the proposed shift of services between QMC and City Hospital sites. • East Midlands Ambulance Service (EMAS) will review and input into detailed proposals for the QMC site as the estates strategy is being developed to ensure that flow for ambulance

	vehicles and crews can be optimised reducing unnecessary waits.
The panel recommended that the possibility of providing all radiotherapy on the QMC campus is revisited by the Trust and CCG in its proposals.	• Continued engagement has taken place over the summer in relation to the proposed cancer configuration including radiotherapy. The clinical model agreed has support from the relevant cancer leads. In the proposed configuration for cancer care services, radiotherapy will be provided across both sites in a single service multiple site model. QMC would support inpatients as well as some outpatient radiotherapy. The City Hospital site would provide outpatient therapy.
The panel recommended that an overarching cancer strategy which clearly articulates what excellent looks like and with a clear identity for the cancer centre is developed. Moreover, the terminology in the Multiple Site Single Service Models of Care Systematic Review may make it easier to engage staff and patients.	• The strategy for cancer care is articulated within the proposed cancer care configuration pack and deep dive (see section 6.4.4 and Appendix 13 and 14)
The panel recommended that ongoing engagement and support from local authority public health teams will help to improve population health in the broadest sense and should be integral to the programme.	• The local system did not have the capacity to provide any additional support to the programme as a consequence of the pandemic and so the senate lead facilitated a link to Public Health England. There is now dedicated local public health support for the programme. This support will help to develop relevant mitigations and will continue on an ad hoc basis as the programme continues to develop.
The panel recommended that definitive commitments regarding demand management from system partners is clearly established and particularly in relation to driving down non-elective admissions arising from the Trust's Emergency Department attendances.	• The system-wide commitment regarding demand management is articulated in the ICS Urgent Care Clinical and Community Services Strategy (CCSS) and the transformation plan update (see Appendix 4)

The panel recommended that definitive commitments from Sherwood Forest Hospitals (SFH) Trust within the overall ICS strategy will be necessary with regards to managing additional maternity capacity after the implementation of a single site maternity model as proposed by the HIP2 (now New Hospital Programme) programme.	• The potential impact upon Sherwood Forest Hospitals (SFH) maternity is an anticipated 630 births per annum based on the ICS modelling for the ICS CCSS. • A meeting was held with SFH on 24/06/2021. SFH are clear that the current service could accommodate 10% additional activity and there has already been an increase in bookings. • Dialogue is ongoing and will be taken through the system maternity structures (e.g. LMNS Board). There is an acknowledgement that the ICS modelling may not reflect the choices that women make in real life and this was tested the second phase of pre-engagement. This showed that there was some concerns around the proposal to remove birthing services from City Hospital, the programme is continuing to engage with Maternity Voice Partnership and community groups on this issue. • A strategic oversight took place in February in which system stakeholders reviewed the proposed model prior to the next phase of pre-engagement.
The panel recommended that the models of care (e.g. Virtual Single Point of Specialty Decision Making, same day emergency care (SDEC), assessment areas) designed to improve flow through the emergency and urgent care pathways of the Trust are fully discussed with the teams who will be responsible for delivering them (e.g. the emergency department) to understand the practical resources (space, staff) required as well as any potential constraints to effective function (e.g. radiological diagnostic capacity to SDEC areas).	• The model of care for the emergency pathway and all other areas have had input in its design from relevant teams. Further staff engagement on the clinical model is took place in December 2021. The practical resources and constraints will be discussed further at outline business case stage later in 2022. All clinical teams and relevant stakeholders will be involved in the detail needed at this stage.
The panel recommended that the Trust provide details of a	• There is a lot of work currently ongoing within the Trust regarding maternity and neonatal

comprehensive interim plan to mitigate clinical risk for the maternity and neonatal services aspect of the transformation programme, prior to implementation of a full single site working model.	services. This is regularly updated to both Health Scrutiny Committees. The CCG maternity improvement briefing - county Health Scrutiny Committee and NUH maternity improvement plan update to HSC documentation in Appendix 5 provide a comprehensive overview of all the work being undertaken and progress against the transformation plans.

Table 17: Clinical Senate reflections/recommendations from April 2021 Review

The third full Clinical Senate review took place in July 2022 and brought back the entirety of the clinical model for assurance by the panel. In order to get the most from the planned review session, there was regular and ongoing dialogue between the senate co-ordinator and TNUH programme team, with queries being fed back from panel members to inform the evidence submission. The recommendations and response are detailed in Table 18.

Senate reflection/recommendation	TNUH response/action
The panel recommend that a broader and more rigorous staff engagement and organisational development process is put in place at the earliest opportunity. This should ensure that all staff at all levels and disciplines are fully involved in the process and empowered and understand that they have a genuine opportunity to contribute to the shape of the plans. It should also ensure that staff feel supported and plans are in place to sympathetically address the cultural and factional challenges arising from a large-scale change process	• Staff engagement to date has been in line with the overall agreed communications and engagement strategy for the programme. The main vehicle for providing information has been the Tomorrow's NUH 'Chapter' documents, widely cascaded and digitally available on dedicated website and intranet pages along with a regularly updated bank of FAQs. There are also regular updates in the NUH quarterly magazine. Monthly updates have been given via the CEO briefing for senior leaders (core messages from which are subsequently shared Trust-wide). A number of 'bitesized learning' and Q&A online workshops have been provided. • There have been TNUH roadshow 'pop ups' in areas of high footfall at different times of day, to accommodate different shift patterns • The Tomorrow's NUH team has attended team days, divisional and local meetings across the organisation, as well as carrying out site visits to different services and holding in-depth discussions with leadership teams of the specialties most affected by the proposals. • The #TeamNUH social channels have been used to signpost staff to the chapter documents and to encourage participation in wider pre-consultation engagement.

	• It is recognised that staff engagement has been challenging both during the pandemic and post-pandemic recovery period. The challenge has been acknowledged and a more intensive programme of engagement across the NUH workforce is now being delivered. (link to Appendix 2) • The comms and engagement team are currently working with senior leaders to develop further and more effective two-way communication channels across the organisation, which will support more effective engagement. A comprehensive NUH staff communication and engagement plan has been developed up to Spring 2023 in line with senate report and learnings from engagement to date. It has been shared with the Clinical Advisory Group and the TNUH Programme and Partnership Board in October 2022. • Engagement will be measured both quantitatively and qualitatively.
The panel recommend that significant focus is placed on developing a detailed workforce strategy in conjunction with key partners such as Health Education England. This should be undertaken with urgency to mitigate the unavoidable lead time for training and development of the future workforce. This should be aligned to bed capacity modelling to ensure sufficient and suitable staffing models are in place at a service level. The strategy should address key issues such as interim staffing shortages, long term training and development needs and the implications of the TNUH programme, future ways of working (with the necessary changes to staff terms and conditions) and mitigation for	• We recognise that workforce and sustainability are key to the delivery of our proposals. The people workstream of the Tomorrow's NUH programme has a key role in supporting the people planning aspects of the proposed changes and articulating the workforce impact of the proposed changes set out by the clinical model. • Several key groups and committees have input through the planning processes, giving an overview of the challenges that the clinical workstreams must address from a people perspective. These groups include NUH human resources, professional leads, finance leads within NUH and across Nottingham and Nottinghamshire, strategy leads, transformation and divisional leads and the ICS people workstream. • There are several challenges which have been recognised for workforce at NUH which mirror the pressures nationally. Some of the main challenges for NUH are high levels of vacancies across the workforce, and sickness and absence levels which are in part due to stress related illnesses. • The TNUH programme provides opportunities across a range of areas to address these challenges,

predicted shortages in available staff at a speciality level	and to ensure we have a workforce which allows us to deliver the programme ambitions. The anticipated workforce benefits of the TNUH programme have been quantified and aligned to the options. • A workforce plan has been developed to address local workforce planning drivers and to develop a workforce that is fit for the future. Health Education England is to be asked to review the workforce plan • The granular detail (e.g. specialty level workforce plans) will be developed at the OBC stage of planning. • More work is being done on this recommendation with the people workstream leads with review from the Deputy Chief People Officer.
The panel suggest that focus is given to prioritising and clearly articulating the plans for the women and children's hospital looking at gynaecology, maternity, neonate and paediatric dependencies both within the proposed new hospital and with the rest of the QMC site. This will work through the practical concerns highlighted and clarify workforce needs and issues. This will help determine if the current plans are the most appropriate, particularly in terms of the physical location of the proposed hospital	• The physical location of each service on the QMC within the buildings will be completed as part of the OBC. We will be establishing a group to oversee the detailed operational models which will inform the capital case development at the next stage. This issue does not materially impact on the appraisal of the options. • The programme is also seeking to engage with other sites with similar operational models via the National Hospitals Programme.
The panel recommend that the programme revisits its modelling at a service level based on the provider's position as a tertiary centre to ensure that the true catchment population is considered in plans and not just those of a district and general hospital. Benchmarking with similar sized organisations and a view of	• The modelling to date has taken into account the differential between what might be considered as "District General Hospital" activity and tertiary activity. • The differential growth rates for specialised commissioned activity and services were tested with clinical leads during the development phase to apply some clinical judgement to the forecast growth. • Benchmarking is to be sought through a) specialised commissioning and b) through the new hospital

their changes in demand over a similar time period would add more rigour to planning processes	programme as part of further testing of this modelling. • A paper was presented to the East Midlands Provider Network (EMAP) in October 2022 detailing the approach taken. EMAP were assured of the approach and work will commence across the region to review what work each provider does. • Our modelling has been shared with the New Hospital Programme Team and we are awaiting the first drop of the central demand and capacity work expected in Q4 22/23 which will enable benchmarking with similar sized organisations in the New Hospital Programme.
The panel suggest that the stated aims of 15 additional beds per annum and a 20% reduction in length of stay (on Adult Non Elective occupied bed days over 5 years and this is applied to ICS commissioned activity) are revisited based on learning from other large teaching hospitals who have undergone major transformation where demand has rapidly outstripped capacity. The panel felt strongly that this is a significant underestimate and does not in any way future proof the provider	• A health system wide task and finish has been established to review the evidence and plans aligned to the 20% reduction in NEL Occupied Bed Days ambition. • The task and finish group was chaired by Amanda Sullivan, ICB CEO, and included clinical and strategy leads from all partner organisations across the ICB. • The group focused on building up the demand management ambition from agreed areas of opportunity instead of relying on the 20% reduction of OBDs ambition. The agreed areas of opportunity were: o LOS/pathway improvements at NUH o Reduction in MSFT numbers o Impact of virtual ward implementation o Admission avoidance • The work undertaken in the light of the Clinical Senate recommendation has resulted in an increase of the NUH acute bed base by 213 beds.
The panel suggest that the programme carefully considers how it maximises patient outcomes and is able to respond to potential future developments in emergency care e.g. Cardiac Arrest Centres and trauma care by the location of time critical interventional	• CAG agreed that the outcome data for cardiac arrests should be included in the case which should further support our decision to prioritise respiratory move over cardiology as per our case for change. • The national audit demonstrated that the risk adjusted outcomes for the four headline metrics are all green which shows the observed value is within or above the 95% predicted range — there is no evidence that the observed value is worse than expected

services on the same site as the ED	• Further discussions are taking place to determine if a coronary intervention suite could be developed at QMC to enable us to provide cardiac interventions at QMC if needed as well as at City Hospital. This would not replace the current service at City which would remain.
The panel suggest that the programme looks to commission its own patient transport service to manage any remaining internal transfers in house and relieve the burden on EMAS	• Review of current arrangements taken place to identify the full breadth of these. • EMAS is not used for our routine transfers between the two sites. A contract is in place with Ambicorp for internal transfers between sites and this volume is expected to reduce as a result of the service change proposals. • Additionally, for very unwell patients the CoMET and Adult Critical Care Co-Ordination Transfer Service (ACCOTs) teams will be used to provide acute critical care transfers – this is hosted by University Hospitals Leicester but delivered jointly by them and NUH. • As contracts are renewed and re-let it will be important to ensure that they take account of changes planned for through the TNUH Programme to ensure that optimal services are commissioned which are able to respond to these changes and meet future requirements.
The panel suggest that the long reaching impact of the Ockenden review and resultant work post review is incorporated into the TNUH timeline to ensure all parties are cognisant of any potential impact to allow for any necessary mitigation	• The proposals for the new facility for women, children and families will reflect all the latest clinical best practice and advice and learning from maternity reviews locally and from across the country. • We will ensure that a robust maternity workforce plant to support future requirement, is an integral part of the TNUH model, in line with recommendations of the Ockenden review. • Critically, we would work with families and expert clinicians to co-design this purpose-built facility, which, if proposals were to be approved next year (2023), we would aim to complete by 2028-29.
The panel suggest that patient engagement work is expanded to ensure that service users for the relevant service are truly	• A consultation plan has been drafted (see section 11) which outlines the approach to communications and engagement for the 12-week formal public consultation. A considerable amount of time has

engaged. This is suggested with particular reference, to children, families, carers, patients with complex needs and pregnant women from deprived populations	been undertaken to understand the socio-demographics of our population. We have segmented our communities (e.g. children and young people, pregnant women, people with learning disabilities, LGBTQ+ communities) and identified appropriate methods of engagement with them. Views will be sought on how and where fertility and gynaecology services are delivered. • The consultation plan was reviewed by the stakeholder reference group in August 2022, who suggested further community groups to engage with, which have been included within the plan. • In addition there have been ongoing engagement activities with specific patient cohorts. This includes meetings with groups including Maternity Voices Partnership, Nottingham Women's Centre, Nottingham Arab Women's Group and Nottinghamshire LGBTQ+ Network. Translated information has been shared with Nottingham Arab Women's Group and Nottingham Women's Muslim Network. • The comms and engagement team attended a Children and Young People Shadow event, an ICS Stakeholder Engagement Event and a series of Patient Participation Group meetings • A discrete engagement plan around service reconfiguration plans for the Children's Development Centre is being developed.
The panel suggest that modelling work is revisited and tailored to the appropriate population with a key focus on population health and demographics. This is particularly important for children and young people's services and services where a high proportion of users are from deprived areas	• A comprehensive Integrated Impact Assessment has been drafted and refreshed in November 2022, including additional analysis from the Nottingham and Nottinghamshire Strategic Analytics Intelligence Unit (SAIU) to support this recommendation. • The IIA and proposed mitigations were discussed with system stakeholders at the Programme and Partnership Board in December 2022, and areas for further exploration were identified. The IIA will continue to iterate as the programme develops. • The IIA has identified the geographical areas where patients are potentially most impacted by the proposed changes, and the consultation will tailor methods of engagement to reach the diverse

	communities within those areas (see also response above).
The panel recommend that more work is undertaken to understand patient needs and experience to appropriately mitigate the predicted increases in travel times and travel costs, access needs, practicalities of supporting patients frequently visiting with complex needs and ensures that important issues such as parking and access are addressed simultaneously with service movement. This, in conjunction with recommendations 9 and 10, will strengthen the programme's understanding of the health inequalities experienced by their population and inform the resultant actions to address them	• A comprehensive Integrated Impact Assessment has been drafted and refreshed in November 2022 • A draft TNUH Travel Plan is has been developed which identifies the potential future implications of the Tomorrow's NUH proposals on the travel habits of NUH service users and staff. The plan also highlights transport and travel related infrastructure and initiatives across Nottingham City Hospital and the Queen's Medical Centre and considers a number of possible mitigations in relation to the TNUH proposals and the impact on travel. • Proposed future mitigations include increased car parking capacity through two Multi-Storey Car Parks and off-site parking, increased bicycle and scooter parking at NUH, improved transport around and across sites. • The TNUH programme will work closely with local councils to review public transport requirements in light of the service reconfiguration
The panel suggest the programme urgently engages key partners (including the ED team) with a view to understanding and defining the impact of co-locating a UTC on either the QMC or City Hospital sites	• The current UTC in Nottingham is not co-located with the ED at QMC and is also not provided by NUH. Given it is a service not on our site, nor provided by NUH, it wasn't included in the scope for the options appraisal. • Collaborative working on a clinical model for a primary care led on site Urgent Treatment Centre (UTC) at QMC has commenced and is being led by the Nottingham and Nottinghamshire ICB with system partners. This work includes the NUH Medicine Division and ED leadership. • A decision on the future model for this will be made and implemented outside of the TNUH programme.
The panel suggest that it is important to increase the visibility of system partners and system working in the programme. Particular emphasis is placed on the critical enabling work in the community and	• System stakeholders and neighbouring commissioners have been engaged with the TNUH Programme initially as part of the Strategic Oversight Group. This has subsequently been replaced by a TNUH Programme and Partnership board, following a Governance review.

primary care to ensure treatment occurs in the right location and that services are visible and have capacity to support flow through the acute setting. This will support the overall patient experience, continuity of care and effective management of conditions	• The Programme and Partnership Board has been established to bring system partners closer to the programme and to facilitate system oversight of the TNUH programme. The first meeting took place in September 2022 and monthly meetings are scheduled. There is representation on the Programme and Partnership board from the following organisations Sherwood Forest Hospitals, Nottinghamshire Healthcare Foundation Trust, East Midlands Ambulance Service, Citycare, Nottingham City and Nottinghamshire County Councils (Public Health). • In addition to these regular meetings there have been some focused discussions with stakeholders around specific clinical areas to understand the impact of changes to the models of care through TNUH and to acknowledge the potential need for system mitigations. Examples include meetings with clinicians from Sherwood Forest Hospitals to discuss potential changes in service provision and patient flows for urology and maternity. • The TNUH programme has also been working with system partners to understand and map the potential of admission avoidance initiatives including urgent community response services, anticipatory care, virtual wards and end of life models of care. The admission avoidance initiatives have directly informed the bed modelling as discussed in chapter 5.

Table 18: Clinical Senate reflections/recommendations from July 2022 Review

10.3 Health overview and scrutiny committee (HOSC) engagement

We have continuously engaged with Nottinghamshire County Council Health Scrutiny Committee (HSC) and the Nottingham City Council Health Scrutiny Committee with regards to the Tomorrow's NUH programme. This includes updates on progress as we have moved through phases of engagement and the overall work programme. Further detail on HSC engagement can be found in the approach to engagement section 3.

10.4 Assurance by NHS England

NHS England oversees Integrated Care Boards against their statutory duties and other responsibilities under the *NHS Oversight Framework*. It has a role to both support and assure the development of proposals by commissioners for service change. Assurance is applied proportionately to the scale of the change being proposed, with the level of assurance tailored to the service change. NHS England supports commissioners and local

partners to produce evidence-based proposals for service change, and to undertake assurance to ensure they can progress, with due consideration for the governments four tests of service change and its test for any proposed bed closures.

Prior to public consultation, NHS England considers the proposal in terms of both capital and revenue and its financial sustainability. This ensures any option submitted for public consultation is:

- sustainable in service and revenue and capital affordability terms
- proportionate in terms of scheme size
- capable of meeting applicable value for money and return on investment criteria.

NHS England operates a two-stage assurance process prior to public consultation:

1. a strategic sense check
2. an assurance checkpoint

As part of the *New Hospitals Programme (NHP),* the Government announced funding for up to 40 new hospital build projects, which included investment in Nottingham University Hospitals NHS Trust. As this programme is part of the NHP final assurance and decision making will be required from the New Hospitals Programme Investment Committee.

10.4.1 NHS reconfiguration five tests

There are five "reconfiguration tests" for the NHS that must be applied to all significant service change proposals, as specified in national policy and guidance. NHS England guidance on service change is intended to support commissioners and partner organisations in navigating a clear path from inception to implementation. It aims to assist organisations in taking forward their proposals, enabling them to reach robust decisions on change in the best interests of patients. National guidance is set out in 'Planning, assuring, and delivering service change for patients' and the addendum added in May 2022.[151,152]

These tests are designed to demonstrate that there has been a consistent approach to managing change, and therefore build confidence within the service, and with patients and the public. This section demonstrates how we meet the government's four tests for service reconfiguration and change, and how the final test set out by NHS England isn't applicable. These tests are:

- **TEST #1**: The proposed change can demonstrate strong public and patient engagement.
- **TEST #2**: The proposed change is consistent with current and prospective need for patient choice.
- **TEST #3**: The proposed change is underpinned by a clear, clinical evidence base.
- **TEST #4**: The proposed change to service is owned and led by the commissioners.

[151] NHS England, 2018. 'Planning, assuring and delivering services change for patients'. https://www.england.nhs.uk/wp-content/uploads/2018/03/planning-assuring-delivering-service-change-v6-1.pdf

[152] NHS England, 2022. 'Addendum to Planning, assuring and delivering service change for patients (March 2018)'. https://www.england.nhs.uk/wp-content/uploads/2018/03/B0595_addendum-to-planning-assuring-and-delivering-service-change-for-patients_may-2022.pdf

- **TEST #5**: Proposals including significantly reducing hospital bed numbers will have to meet one of the following three conditions:
    - Demonstrate that sufficient alternative provision, such as increased GP or community services, is being put in place alongside or ahead of bed closures, and that the new workforce will be there to deliver it; and/or
    - How that specific new treatments or therapies, such as new anti-coagulation drugs used to treat strokes, will reduce specific categories of admissions; or
    - Where a hospital has been using beds less efficiently than the national average, that it has a credible plan to improve performance without affecting patient care (for example in line with the getting it right first time programme).

NHS England will assure the proposed changes in service prior the launch of a public consultation. The five tests have been applied throughout the pre-consultation phases of the Tomorrow's NUH programme. The following section demonstrates how we will meet each of the tests of service change and assurance in turn.

10.4.1.1 Test 1 – The proposed change can demonstrate strong public and patient engagement

This test evaluates how service users, and the public are involved in the development of the proposals for change, and how their views and insights are considered throughout each stage of the programme.

It has been critical that patients and the public have been involved throughout the development, planning and decision making of the proposed service change. We have been able to demonstrate early involvement with diverse communities through Nottingham and Nottinghamshire healthwatch, the local voluntary sector and local authorities.

We have had early involvement with patients and the public through multiple communications streams to ensure an ongoing dialogue could take place in the stages of proposal development.

The communications and engagement workstream have set out a communications and engagement plan to set out objectives and methods to monitor engagement and to provide assurance. We had made sure that our methods and materials have been tailored to meet specific audiences, provided opportunities for vulnerable and seldom heard groups to participate, and offered accessible forms of documentation. The principles we have used to define our approach to demonstrate strong public and patient engagement can be found in the engagement chapter 3 and plan for consultation chapter 11.

10.4.1.2 Test 2 – The proposed change is consistent with current and prospective need for patient choice

This test looks at whether any proposed redevelopment and/or changes to services would maintain the availability of service user choice.

Patient choice in this context refers to the statutory requirements set out in the *NHS Choice Framework*[153] which sets out patients' rights around choice of provider for planned care and maternity services (as well as choice of GP and some other services out of scope for this programme of work).

Patient choice in this context does not cover emergency care, where the priority is to convey patients to, and treat them in, the most appropriate setting for their clinical need. In an emergency, patients are not offered a choice of provider. The programme has been working closely with East Midlands Ambulance Service, to ensure the plans are deliverable from an ambulance service perspective.

It is also important to note that the patient choice test does not extend to the specific location of the provider. Moving the location of a particular service from one part of a geography to another still maintains patient choice of provider in this context.

The *NHS Choice Framework*[153] sets out statutory requirements for choice, of which the most relevant are outlined below in Table 19.

Statutory requirement for choice	Your choices as a patient
Choosing where to go for your first appointment as an outpatient	If you need to be referred as an outpatient to see a consultant or specialist, you may choose the organisation that provides your NHS care and treatment (an outpatient appointment means you will not be admitted to a ward). You may choose whenever you are referred for the first time for an appointment for a physical or mental health condition. You may choose any organisation that provides clinically appropriate care for your condition that has been appointed by the NHS to provide that service. You may also choose which clinical team will oversee your treatment within your chosen organisation.
Asking to change hospital if you must wait longer than the maximum waiting times	Maximum waiting time is usually 18 weeks, or 2 weeks to see a specialist for cancer. You can ask to be referred to a different hospital if: • you must wait more than 18 weeks before starting treatment for a physical or mental health condition, if your treatment is not urgent

[153] NHS Choice Framework (Department of Health and Social Care, 2020)

	• you must wait more than 2 weeks before seeing a specialist for suspected cancer Waiting times can vary between hospitals and you have the right to be referred to another hospital that may be able to start your treatment sooner. Waiting times start from the day the hospital receives the referral letter, or when you book your first appointment through the NHS e-Referral Service.
Choosing maternity services	You can expect a range of choices in maternity services, informed by what is best for you and your baby. When you find out that you are pregnant you should expect to be able to choose which midwifery service you attend from a range of options. To access this service, you can: • go directly to your chosen midwifery service: you can use NHS Choices to find out more about the different services that are available and then self-refer • go to your GP and ask to be referred to your chosen midwifery service: your GP should provide you with information about the different services that are available. While you are pregnant you should be able to choose to receive antenatal care from: • a midwife • a team of maternity health care professionals, including midwives and obstetricians. This will be the safer option for some people and their babies. When you give birth, you should be able to choose to do so: • at home, with the support of a midwife • in a midwife-led facility (for example, a local midwife-led unit in a hospital or birth centre), with the support of a midwife • in hospital with the support of a maternity team. This type of care will be the safest option for some people and their babies.

	After going home, you should be able to receive postnatal care: • at home • in a community setting, such as a Sure Start Children's Centre.

Table 19: NHS choices framework - patient choice

The proposals within our preferred way forward, option 13a, when mapped against the statutory requirement for choice show that the choice of services for people in Nottingham and Nottinghamshire will remain the same, regardless of the location, or configuration, of services.

10.4.1.3 Test 3 – The proposed change is underpinned by a clear, clinical evidence base

The proposed change in service is underpinned by a clinical model that has been clinically-led in line with local guidance, national policy and best practice. The clinical model was developed using clinical evidence and clinical best practice, showing how the proposed changes would affect typical patients belonging to different services. There was clinical leadership and engagement in development of the clinical model and implementation plans.

The six clinical design principles on which the clinical model has been developed were created through clinical workstreams to reflect best practice clinical models, ensuring adequate clinical input into the creation of the model. In addition, there have been a number of deep dive reviews on specific service areas which look at the nuance of how care is provided within each of these areas with a case for change, options appraisals and benefits and risks. The clinical advisory group (CAG) was also utilised to review the wider clinical system clinical views which were obtained from clinical workstreams in six different areas (see section 3). This CAG was comprised of six clinical leads, the Nottingham University Hospitals NHS Trust (NUH) medical director, the Clinical Commissioning Group (CCG, superseded by the Integrated Care board in April 2022) joint clinical chair and the programme GP clinical lead.

The proposed changes have been taken to the East Midlands Clinical Senate as a source of independent, strategic advice and guidance to assist us in making the best decisions for the population of Nottingham and Nottinghamshire. A review of this process is seen in section 10.2. Section 5 addresses the case for change with a clinical model that in underpinned by a clear, clinical evidence base in more detail.

10.4.1.4 Test 4 – The proposed change to the service is owned and led by the commissioners

We have led the development of the pre consultation business case and have been part of Tomorrow's Nottingham University Hospitals NHS Trust (TNUH) governance structures. Workstream outputs from the Tomorrow's NUH programme have been taken to the Clinical Commissioning Group (CCG) governing body (succeeded by the board of the Integrated Care Board (ICB)) to ensure process rigor and quality of content.

The TNUH programme has robust governance that covers how the programme is going to manage the inevitable complexity and interdependencies, and bring the different aspects

together. The Nottingham and Nottinghamshire ICB is an integral member of the TNUH programme and is leading the proposed change to service. Both the Nottingham and Nottinghamshire oversight groups and the TNUH programme and partnership board have representation from the ICB within them.

The governance for the programme can be found in section 1.

10.4.1.5 Test 5 – Proposals including significantly reducing hospital bed numbers

The proposed service change will not reduce hospital bed numbers and therefore the conditions set out by this test do not apply. Over the course of the programme the total bed stock is planned to increase to 2140 by Year 10, at no point in this plan will the total beds offered by NUH decrease, despite the implementation of efficiencies and activity mitigators. The bed numbers can be found in section 5.8 and a full breakdown of bed outputs can be found in section 5.8.20.

10.5 Other assurance

In addition, the programme has sought assurance from:

- There is regular dialogue with the New Hospitals Programme team at the Department of Health and Social Care, and with regional reconfiguration colleagues at NHS England, recognising the value, support and 'critical friend' perspective that these colleagues can give in addition to the formal assurance processes.
- Healthwatch Nottingham and Nottinghamshire are members of both the programme partner group and the patient, staff, stakeholder advisory group. These meetings create a forum for Healthwatch to provide robust positive challenge, suggestions, and ideas to contribute towards a positive engagement and consultation process, all of which help assure the integrity of patient and public engagement. This is in line with their statutory role as a consumer voice for health and social care and supports meeting the first test, relating to strong patient and public engagement in the proposals.
- The programme presented to the Local Health Resilience Partnership in April 2021 and then again on 11th May 2022. At the May 2022 session the TNUH programme team presented an overview of the programme and resilience considerations to enable the LHRP to *'discuss any issues regards our current strategic direction for Tomorrow's NUH and highlight any issues/concerns the LHRP may have identified in our proposals'*. The presentation focussed on how the longer term opportunity provided by TNUH would contribute to addressing some of the current issues impacting upon resilience in the system, rightsized capacity, future flexibility and critical infrastructure improvements. The discussion focussed on considerations for a helipad, potential for improving infection prevention control and opportunities to build resilience through this scheme. The LHRP had no concerns at this stage in the process and it was agreed that the programme will return at multiple points in the future to ensure alignment with the LHRP.
- System assurance has also been sought in relation to a number of components – the activity modelling was assured by the ICS Capacity Cell in June 2021 and the financial modelling was assured via the Systems Director of Finance meeting on the 27th January 2022 and on 5th July 2022. A review of the bed modelling was undertaken in

2022 in the light of the recommendation from the Clinical Senate review. The modelling was overseen by a system task and finish group and assured in summit meetings on 2nd and 25th November 2022, and then by the Programme and Partnership Board on 14 December 2022.

10.6 Assurance against the Statutory Duties of an ICB

The ICB has a number of statutory duties relating to the discharge of its functions, which must all be adhered to when planning and delivering service change for patients.

These duties are defined in the NHS Act 2006, updated in the Health and Care Act 2022 and the Equality Act 2010. The TNUH response to these statutory duties is set out in Table 20 below:

Act	Duties	TNUH Position
Commissioning (Health and Care Act 2022)	• Commissioning primary medical and dental services • Commissioning a proportion of specialised services	• Scope of services set out in PCBC • Impact considered on catchment population
Duty to have regard to the need to reduce inequalities (NHS Act 2006, Health and Care Act 2022)	• Driving equality, diversity and inclusion including for workforce and population ICB's must have regard to the need to: • Reduce inequalities between patients with respect to their ability to access health services • Reduce inequalities between patients with respect to the outcomes achieved for them by the provision of health services • Not limited to those with protected characteristics	• Extensive engagement with people who experience inequalities • Estates design will improve physical access to services • Co-location will enable more 'one-stop shop services' • Integrated care will improve access for those with long term conditions
Public Sector Equality Duty (s149 Equality Act 2010)	• Eliminate unlawful discrimination, harassment and victimisation • Advance equality of opportunity between people who share a relevant protected characteristic and people who do not share it • Foster good relations between people who share a relevant protected characteristic and those who do not share it	• Consideration of access, travel time, quality, digital for groups with protected characteristics • Mitigations in place, or being developed, where issues have been identified
Duty to promote NHS Constitution (NHS Act 2006)	Each ICB must, in the exercise of it's functions: • Act with a view to securing that health services are provided in a way which promotes the NHS Constitution	The NHS Constitution is one of the principles which has guided the development of the proposals and will underpin the public consultation

	• Promote awareness of the NHS Constitution amongst patients. Staff and member of the public	
Duty to have due regard to the NHS Constitution (2009)	ICBs must, in performing their health service functions, have regard to the NHS Constitution. This includes functions which are concerned with the provision and commissioning of health services.	The NHS Constitution is one of the principles which has guided the development of the proposals and will underpin the public consultation
Duty as to effectiveness, efficiency	Each ICB must exercise its functions affectively, efficiently and economically	Consideration given to ensuring service change proposals are effective, provide efficiencies where appropriate and offer value for money
Duty as to promote innovation	Each ICB must, in the exercise of its functions, promote innovation in the provision of health services (including innovation in the arrangements made for their provision	Consideration given to research and innovation within the PCBC as a key investment objective of the programme.
Duty as to improvement in quality of services	Each ICB must exercise its functions with a view to securing continuous improvement in the quality of services provided to individuals for or in connection with the prevention, diagnosis or treatment of illness. In discharging this, an ICB must, in particular, act with a view to securing continuous improvement in the outcomes that are achieved from the provision of services. Those outcomes in particular which show: • The effectiveness of the services • The safety of the services, and • The quality of the experience undergone by patients	• Consideration given to the benefits of each proposed change to clinical services in terms of quality, safety and patient experience. • Quality impact assessments undertaken on each proposed clinical service change
Duty as to patient choice	Each ICB must, in the exercise of its functions, act with a view to enabling patients to make choices with respect to aspects of health services provided to them.	• Impact upon patient choice considered within the PCBC as one of the 5 tests.
Climate Change	Each ICB must, in the exercise of its functions, have regard to the need to contribute towards compliance with the UK net zero emissions target, and other	Consideration of the environmental impact of proposals contained within estates strategies and Integrated Impact Assessment

	air quality and species abundance targets under that Act.	
Duty in respect of research	Each ICB must, in the exercise of its functions, promote research on matters relevant to the health service, and the use in the health service of evidence obtained from research	Consideration given to research and innovation within the PCBC as a key investment objective of the programme.
Duty to promote integration	Each ICB must exercise its functions with a view to securing that health services are provided in an integrated way where it considers that this would: • Improve the quality of those services (including the outcomes that are achieved from their provision), • Reduce inequalities between persons with respect to their ability to access those services • Reduce inequalities between persons with respect to the outcomes achieved for them by the provision of those services. Each ICB must exercise its functions with a view to securing that the provision of health services is integrated with the provision of health-related services or social care services where it considers that this would: • Improve the quality of those services (including the outcomes that are achieved from their provision), • Reduce inequalities between persons with respect to their ability to access those services • Reduce inequalities between persons with respect to the outcomes achieved for them by the provision of those services.	• Extensive engagement with people who experience inequalities • Estates design will improve physical access to services • Co-location will enable more 'one-stop shop services' • Integrated care will improve access for those with long term conditions • Service reconfiguration will ensure the necessary clinical adjacencies are in place and the workforce is consolidated.
Duty to have regard to the wider effects of the triple aim	In making a decision about the exercise of its functions , an ICB must have regard to all likely effects of the decision in relation to: • The health and well-being of the people of England ; • The quality of services provided to individuals by the NHS or in	• Proposed clinical models address the case for change and will improve health outcomes for the population • Consideration given to the benefits of each proposed change to clinical services in

	pursuance of arrangements made by the NHS in connection with the prevention , diagnosis or treatment of illness, as part of the health service in England; • Efficiency and sustainability in relation to the use of resources relevant bodies for the purposes of the health service in England.	terms of quality, safety and patient experience. • Quality impact assessments undertaken on each proposed clinical service change
Gunning principles (R v London Borough of Brent ex parte Gunning, 1985)	• Consultation must be at a time when proposals are still at the formative stage. This means that a final decision has not yet been made, or pre-determined, by the decision-makers. • The proposer must give sufficient information for any proposal to permit intelligent consideration and response. This means that the information provided must relate to the consultation and must be available, accessible, and easily interpretable to provide an informed response. • Adequate time is given for consideration and response. This means that there must be sufficient opportunity for patients, the public and staff to participate in the consultation. • The product of consultation is conscientiously taken into account before a decision is made. This means that decision-makers should be able to provide evidence that consultation responses were taken into account before a final decision is made	• Open mind demonstrated through structure and language of the PCBC • Detailed information on the care model, options appraisal and proposals within PCBC • Extensive pre-consultation undertaken and documented in PCBC, and planned for formal consultation • Independent analysis of consultation responses and time for consideration included in programme plan
Requirement to consult with the Local Authority about service change in certain	This regulation confers a duty and sets a procedure around consulting with the local authority, where the ICB has under consideration any proposal for **substantial development** of the health service in the area of the local authority, or for **substantial variation** in the provision of such service.	• Extensive pre-consultation engagement undertaken with elected members and officers within local authorities. • Health Scrutiny Committees engaged in regular dialogue

circumstances (Regulation 23)	There are some exceptions to this, such as where the ICB is satisfied that a decision has to be taken without allowing time for consultation because of a risk to safety or welfare of patients or staff. Under Regulation 23 the local authority may make a referral to the Secretary of State where it: • is not satisfied that consultation with it on any proposal has been adequate in relation to content or time allowed; • considers that the proposal would not be in the interests of the health service in its area; or • it is not satisfied with any reasons given for an emergency change which meant they could not be consulted. If a referral is made to the Secretary of State then, by virtue of Regulation 25, he or she can make a decision on the issue which may either require further consultation or a determination of the issue in a particular way. In practice, what happens is that the Secretary of State will commission advice from the Independent Reconfiguration Panel (IRP before deciding whether to take any action on the referral.	with the Programme as it has developed.

Table 20: ICB Statutory Duties and TNUH Response

11 Plans for consultation

This chapter sets out our approach to public consultation and how this will be used to inform our proposals. We have created a comprehensive and robust consultation plan, highlighting the approach that we will use for consultation, and the stakeholder mapping, activity, and channels that we will use to ensure we inform and actively engage with a diverse range of audiences and stakeholders.

The overall management and delivery of the consultation will be undertaken by the integrated care board (ICB) internal communications and engagement team. It will be undertaken in line with the legal duty on NHS organisations to involve patients, staff and the public. The aim of this consultation exercise is to deliver best practice activity over a 12 week, with a target of 10,000 responses. The current potential timing for the consultation is based on running the consultation from June until August 2023. The high-level objectives for the consultation are:

- To describe and explain the proposals for Tomorrow's NUH
- Ensure that consultation activity is transparent and meets statutory requirements and best practice guidelines
- Undertake significant and meaningful engagement with local stakeholders, building on the findings of previous pre-consultation engagement activity
- Clearly articulate the implications, impact and benefits of the proposals
- Create a thorough audit trail and evidence base of feedback
- Collate, analyse and consider the feedback we receive to make an informed decision

Our plan builds on extensive engagement with staff, stakeholders, patients, carers, and local communities over the pre-consultation engagement. Key elements of the plan include:

- Develop a core consultation document and supporting materials to explain why change is needed, what the proposals are and what benefits they will bring for patients, as well as how the proposals, if agreed, might be implemented
- Develop a bespoke web presence for the consultation, acting as a one-stop- shop for all consultation materials and information
- Develop a communications and engagement activity plan which will encompass on and off-line activity to maximise the opportunities for participation
- Produce online questionnaires and hard copies, stakeholder briefings and other press releases to allow people to feedback
- Agree a system-wide panel of speakers and presenters for to be part of a seamless team that could step into any public event

This plan has been set out to ensure maximum participation and reduce risk of exclusion. This is articulated in our risk register, alongside other key risks.

Crucially, we set out how we have made a plan to capture feedback and analyse response. Throughout the consultation period we will monitor responses to identify any demographic or other trends which may indicate a need to adapt our approach regarding consultation activity or refocus efforts to engage a specific group/locality. In line with best practice for a consultation of this nature we will commission an independent research/engagement organisation to analyse the responses and produce a non-biased objective report summarising all feedback.

11.1 Introduction

Following extensive pre-consultation engagement with patients, the public, NHS staff and other key stakeholders as we have developed proposals for change, we are committed to undertaking an extensive and meaningful formal public consultation as the next step in the process. This will enable us to hear people's views about the options we have proposed for the future to inform our decision-making. It also provides an opportunity for alternative viable options to be put forward, and/or additional evidence that we may not have considered to be presented. We will also use the formal public consultation to better understand concerns and issues with our proposals, and discuss ways to address, mitigate and reduce them.

The current potential timing for the consultation is based on running the consultation from autumn 2023. No final decisions will be taken on the future shape of services at Nottingham University Hospitals NHS Trust (NUH) until after the consultation has closed and an independent analysis of the consultation responses is completed and presented to Nottingham and Nottinghamshire Integrated Care Board (ICB) for consideration, as a component part of a decision-making business case. We will publish the independent analysis and present this to stakeholders, including Health Scrutiny Committees for their information.

11.2 Approach to consultation

11.2.1 Principles guiding consultation

The consultation plan provides the approach to communications and engagement for the formal public consultation and is jointly owned by the ICB and NUH It sets out how TNUH programme will undertake consultation in line with our obligations and legal duties under:

- Equality Act 2010[154]
- Public Sector Equality Duty Section 149 of the Equality Act 2010[155]
- Brown and Gunning Principles[156]
- Human Rights Act 1998[157]
- NHS Act 2006[158]
- NHS Constitution[159]
- Health and Social Care Act 2022[160]

[154] Legislation.gov.uk, 2010. https://www.legislation.gov.uk/ukpga/2010/15/contents

[155] Legislation.gov.uk, 2010. https://www.legislation.gov.uk/ukpga/2010/15/section/149

[156] Local government, 2019. https://www.local.gov.uk/sites/default/files/documents/The%20Gunning%20Principles.pdf

[157] Gov.uk, 1998. https://www.legislation.gov.uk/ukpga/1998/42/contents

[158] Legislation.gov.uk., 2006. https://www.legislation.gov.uk/ukpga/2006/41/contents

[159] Legislation.gov.uk, 2012. https://www.gov.uk/government/publications/the-nhs-constitution-for-england

[160] Legislation.gov.uk, 2022. https://www.legislation.gov.uk/ukpga/2022/31/contents/enacted

- Communities Board Principles for Consultation.

In addition, we will adopt the following principles to ensure best practice:

- Make sure methods and approaches are tailored to specific audiences as required.
- Identify and use the best ways of reaching the largest amount of people and provide opportunities for vulnerable and seldom heard groups to participate.
- Provide accessible documentation suitable for the needs of audiences, including easy read.
- Accessible formats, including translated versions, will be available relevant to the audiences we are seeking to reach.
- Undertake equality monitoring of participants to review the representativeness of participants and adapt activity as required.
- Use different virtual/digital methods or direct and 1-1 telephone activity to reach certain communities where we become aware of any underrepresentation.
- Arrange engagement activities so that they cover the local geographical areas that make up Nottingham and Nottinghamshire and also reach the surrounding areas which are outside of we direct area of responsibility, but will be impacted by the proposals i.e., Leicestershire, Derbyshire, Lincolnshire and South Yorkshire.
- Arrange meetings in accessible venues and offer interpreters, translators and hearing loops where required.
- Inform our partners of consultation activities and share plans.

The overall management and delivery of the consultation will be undertaken by the ICB internal communications and engagement team. Resources have been allocated to access external support ((NESCU) for production of some of the materials to be used during the consultation process, and the analysis and reporting of findings (the University of Nottingham). Aim and objectives of consultation

The aim of this consultation exercise is to deliver best practice activity over a 12 week period that ensures robust engagement, reflecting the diverse communities living in Nottingham and Nottinghamshire, especially under-represented communities. The target number of responses for the consultation, in total, is 10,000. The high-level objectives are:

- To describe and explain the proposals for Tomorrow's NUH.
- Ensure that consultation activity is transparent and meets statutory requirements and best practice guidelines.
- Undertake significant and meaningful engagement with local stakeholders, building on the findings of previous pre-consultation engagement activity.
- Clearly articulate the implications, impact and benefits of the proposals.
- Create a thorough audit trail and evidence base of feedback.
- Collate, analyse and consider the feedback we receive to make an informed decision.

It is also important to align these objectives with those of Notting University Hospitals NHS Trust (NUH), to show support of the programme from NUH. This ensures a strong, cohesive narrative for service users, staff and other stakeholders. NUH's support of the programme includes:

- Increasing awareness amongst staff, stakeholders, and the public of the plans to reconfigure the hospitals (including what's in scope and what isn't), their

understanding of why we need/ have these plans, and what benefits these improvements will deliver to NUH, the Nottingham and Nottinghamshire system and of course local people.
- Increasing understanding of the changes being proposed and engaging people in that process.
- Continuing to build upon NUH's strong reputation for being innovative and delivering outstanding health outcomes and patient and staff experience.
- Increasing a regular flow of information about the plans and progress with the plans, as well as opportunities to get involved or influence them.
- Promoting successes of the programme and maintain the brand (NHS and NUH).
- Ensuring that stakeholders, including staff, are clear on how they can, and cannot, influence these plans through consultation.
- Changing perception (of loss) and increasing support for the reconfiguration plans and the opportunities they present.
- Connecting with other Trusts that are part of the New Hospital Programme to share learning and benefit from successful communications and engagement approaches that maximise reach and stakeholder involvement.

11.3 Consultation plans

We will continue the conversation with patients, carers, staff and stakeholders through events, meetings, and other targeted engagement activity, as we move towards the public consultation.

This has and will continue to entail:

- Careful consideration being given to how and where fertility and gynaecology services are delivered.
- Consideration given to the options patients could be offered, (e.g., remote and / or face-to-face) based on their individual needs.
- Continuing to work closely with key stakeholders – e.g., Maternity Voices Partnership, the Voluntary, Community and Social Enterprise (VCSE) sector.
- Continuing the conversation with those most affected by these proposals.
- Continuing to work in partnership with the Tomorrow's NUH Stakeholder Reference Group.
- Continuing to work with patients/citizens on key messages.
- Considering the travel impact when further developing the proposals.

11.3.1 Pre-launch

The TNUH programme will continue with a thorough programme of key stakeholder engagement – continuing the conversation – leading up to the start of the consultation. This includes meetings scheduled with Health Scrutiny Committees, the Integrated Care Board (ICB) and staff briefings.

A core consultation document and supporting materials will be developed for the consultation. The document will explain why change is needed, what the proposals are and what benefits they will bring for patients, as well as how the proposals, if agreed, might be

implemented. It will also clearly explain how people can participate, feedback comments and ask for further information by post, email, social media and the website.

The TNUH consultation document and supporting materials will all be available online, in printed format on request and in other languages and formats (see section 11.3.2.2). All information produced as part of the consultation will be written in a language that can be easily understood. Technical phrases and acronyms will be avoided, and information will be produced in other formats as required to reflect population needs.

We will also produce a summary document to provide people with a quick overview of the proposals which will be circulated to key outlets e.g., libraries, sports centres, GP practices and community venues, etc.

We will develop a bespoke web presence for the consultation, acting as a one-stop- shop for all consultation materials and information. This will provide a simple signposting solution for all consultation activity. The sites will be promoted via social media channels such as Facebook, Twitter and YouTube.

We will develop a communications and engagement activity plan which will encompass on-line and off-line activity to maximise the opportunities for public, patient and staff participation in the consultation. This will include public engagement events, focus groups, ad and social media campaigns and roadshows (supermarkets and community sites).

Support materials such as posters and flyers for distribution and displays and stands for use at public events and in public places and at roadshows, will also be produced.

We will produce an online questionnaire and hard copy questionnaires (including an equality monitoring form and easy read version) for use at events. There will be options within the survey for people to respond to those areas they are most interested in or, if they choose, to respond to the whole document. The ICB engagement team will also offer support to those who may need it, to ensure that they are able to understand the information contained within the documents and to ensure that all participants in the consultation have enough information to give informed feedback.

We will issue a stakeholder briefing, proactive press releases and social media promotion to share details of the consultation and how people can feed back.

We will secure external support for the consultation, primarily focused on producing digital ‘assets’ for the consultation as well as the delivery of the consultation report findings.

We will agree a system-wide panel of speakers and presenters for public events – drawing from clinical, operational, strategy and commissioning colleagues from all relevant organisations across the ICS. This means that colleagues from the any organisation in the system will be part of a seamless team that could step into any public event or briefing activity and the audience would not know which organisation they are employed by. We will also agree a way for this organisationally-agnostic team to remain connected and up to date on development throughout the formal consultation period – sharing intelligence, feedback, experiences and advice about the consultation activities undertaken each week.

11.3.2 Delivery of consultation

11.3.2.1 Methods of engagement

Our consultation activities have been designed to reach, and collect feedback from, a broad range of audiences through a mixture of channels. This has been illustrated in Table 21 below. Our plans recognise that people have varying levels of interest and prior involvement in the proposals.

Stakeholders	Methods of engagement
System partners and leaders • Integrated Care Board • NUH Trust Board • New Hospitals Programme • Integrated Care Partnership • TNUH Programme and Partnership Board • Neighbouring trusts • Local authority executive teams • Primary care networks • Voluntary community and social enterprise (VCSE) sector partners • Regional clinical senate • Health and wellbeing boards • Healthwatch Nottingham and Nottinghamshire • Nottingham universities, including medical school • Other regional partnerships e.g. midlands engine	Meetings/briefings/Q&As (governance) Website newsletters Site visits
Clinicians and front-line staff • Acute hospital trust • ICB/ICS staff • Neighbouring trusts • Provider alliances • ICP • Primary care – primary care networks, GPs and primary care teams • Local authority public health and social care teams • VCSE sector providers • Staff side and trades unions	CEO/stakeholder briefings meetings and Q&A sessions (virtual and face- to-face) Site visits by programme team Staff networks Staff summits Pulse surveys roadshows intranet

• Consultants' committees • Junior doctors • Nursing and allied health professional teams • Place based partnerships	Website (including video messages) Newsletters Social media
Elected Representatives • MPs • Health overview and scrutiny committees • County/city councillors • District and borough councillors • Parish/town councillor • Police and crime commissioner's office	Briefings/Meetings Newsletter Media Noticeboards Social media Website
Patients, public and community groups • ICS citizen panel • Engagement practitioners forum, • Regional teams and connections i.e. maternity/neonatal clinical forums, cancer, etc • Current patients /service users and carers • Patient and carer support groups • Residents • VCSE and community groups • Underserved communities • Protected characteristics groups • Additional groups identified as being disproportionately impacted in the integrated impact assessment • Campaigners (groups and individuals)	Ad campaign (local print and online; local radio; social media, digital platforms) Community briefings (including through existing forums and groups) Public engagement events focus Groups/themed events Door drop (deprived/underrepresented postcodes? Free post address) Market place stands at events

• Trust membership networks • ICS engagement and patient networks • GP patient participation groups • Local authority citizen and resident groups • Patients and carers or their representative groups who use any specialised services across a wider catchment area • Local employers and business groups/forums • Faith groups (inc churches and mosques) • Universities/colleges/schools • Gyms/ leisure centres/indoor play centres and nurseries • Social housing providers consideration will also be given to relevant groups and organisations, etc within other ICBs/Trusts who may access the services i.e. Leicester, Derbyshire, Lincolnshire	Market research (telephone/in-person/ online Media National campaigns (e.g. vaccination, awareness days/weeks) Newsletters Roadshows (supermarkets and community sites) Social media surveys Website – including video summaries Attendance at specific clinics relevant to workstreams?
The Media • Local and regional newspapers (print and online) • Radio (local/community) • TV (regional) • Trade media • National media • Social media (own and other platforms	Advertising Campaign Briefings Press Releases Social media (including paid promotion to target specific demographics) Facilitated Facebook lives Website

Table 21: Methods of engagement for stakeholder groups

11.3.2.1.1 Reaching different communities

A considerable amount of time has been undertaken to understand the socio-demographics of the county's population to enable us to understand what a true representative of the population would be. In addition to the stakeholder mapping we have further segmented our target communities and outlined in Table 22 the methods of engagement for these groups which recognise the range of consultation materials and methods needed to reach diverse communities.

Stakeholder group	Targeted engagement methods
People who live in rural communities	• Noticeboards (e.g. parish, church) • Parish councils • Attendance at existing community group meetings • Neighbourhood watch
People who live in urban communities	• Advertising on bus stops • Roadshows • Attendance at existing community group meetings • Citizen's panel • Neighbourhood Watch
Housebound	• Work with district professionals who care for this group • Work with carer organisations across the county and boarders • Voluntary community and social enterprise (VCSE) sector partners
Children and young people (up to age 19)	• Webinars • Social media networks • Targeted questionnaire • School project • Student Councils/Student Unions Young people forums •
Older people (age 65+)	• Voluntary sector groups e.g. Age UK Older people forums e.g. U3A or WI Libraries and existing community groups • Council newsletters • Roadshows at supermarkets Advertisements in targeted places such as GPs, pharmacies, and opticians Carers' forums e.g. Dementia

Long distance commuters and people living over the NUH boundary	• Ensure good online methods are in place via email, website, e-newsletters, social networks • Engage with media over the borders • Ensure timing of some events are in the evening and close to our borders • Work with Healthwatch in boundary areas
People with a specific agenda/campaign groups	• Develop the relationships already established through engagement, and visit their community meetings • Briefings and Q&As • Newsletter
People without their own transport	• Ensure good online methods are in place via email, website, e-newsletters, online, social networks • Ensure location of events is on good public transport links • Roadshows Advertisement in prominent public transport places
People who work	• Ensure good online methods are in place via email, website, e-newsletters, online, social networks Ensure timing of some events is in evening/at the weekend
People who don't work	• Continue to use social groups and networks online and offline e.g. WI, Sure Start, Mumsnet, DWP
Homeless communities	• Work with local organisations and charities e.g. Framework, Emmanuel House and CVS
People with learning disabilities	• Through schools and voluntary sector Ensure easyread capability on main website and use of video and illustrations Work with care homes who look after people with specific needs Work with carer organisations and charities
People with long term mental health problems	• Through voluntary sector and NHS providers Work with charities and CVS organisations Attendance at community groups Link in with Institute of Mental Health at Nottingham University • Work with Healthwatch Armed Forces/Veterans

People who are pregnant or have babies and young children	• Maternity voices partnership • Women and toddler groups • Sure start • Charities e.g. Forever Stars, Zephyrs and National Childbirth Trust Nurseries, childminders and schools Small Steps, Big Changes (lottery funded organisation) • Healthwatch Health visitors and healthy family teams (via City Care) Breastfeeding support workers Working with local authority representatives
LGBTQ+ communities	• Through Nottinghamshire LGBTQ+ Notts Trans Hub Staff networks and NHS Trust providers CVS organisations • Nottinghamshire's queer bulletin (bi-monthly) • Working with organisational quality and diversity leads
Migrant workers	• Through employers – displays and collateral Nottingham refugee forum CVS organisations Relevant local authority colleagues Charities
Ethnic communities	• Through voluntary and community sector. Particular consideration should be given to women only sessions to meet the cultural needs of specific groups • Charities Group leaders community champions
Adult carers	• Through carer groups and organisations
Child carers	• Through carer groups and organisations
Travelling communities	• Through local authorities and GP practices with registered patients charities • CVS organisations
Staff	• Utilising existing online and offline platforms, such as intranet, newsletters, staff forums, team and staff briefings, events and outreach

Table 22: Engagement methods for targeted communities

11.3.2.2 Accessibility

Ensuring the consultation documents (public engagement document and survey) are accessible for people from a variety of backgrounds will be important, enabling the collection of a broad range of information and opinion. We will therefore ensure that the documents are made available in different formats e.g., different languages, braille, video and easy read.

- We will ensure a budget has been identified and approved for the alternative formats of information required for local communities. As a minimum, we need to have translation in the following languages – Arabic, Czech, Farsi, Kurdish, Polish, Punjabi, Romanian, Tigrinya and Urdu. These are listed as being some of the most spoken languages in Nottingham and Nottinghamshire when English is not their first language. We also need to allocate funding for interpretation services at 'live' events.
- The survey within the consultation document will be available online and in hard copy on request, and for telephone completion. We will regularly monitor responses and take action to target any underserved groups.
- A series of engagement events will be held with affected patients, charities, families, and carers. We will continue an on-going dialogue, drawing insights from previous engagement to inform discussions throughout the consultation.
- We will supplement engagement events with targeted activity for affected groups. This activity will be shaped to respond to the equality impact assessment (EIA) carried out on our proposals.

There are a number of mechanisms that the integrated care system (ICS) already has in place which help provide information and support communicate with a range of stakeholders. These mechanisms will be utilised during the consultation process:

- Local councillors and MPs are updated through bespoke briefing, Health Scrutiny Committee and health and wellbeing boards.
- Websites (Integrated Care Board (ICB) and partners).
- Presentations to key stakeholders and attendance at community groups.
- Local media including TV, radio and newspapers.
- Stakeholder Reference Group and other key stakeholder networks.
- Engagement newsletter.
- Social media, including Twitter, Facebook and Youtube.

Other mechanisms we will utilise through consultation include:

- **Focus groups** – Under the Equality Act 2010, we have a duty to consider potential impacts of service change on people with protected characteristics (age, disability, gender reassignment, marriage and civil partnerships, pregnancy and maternity, race, religion or belief, sexual orientation and sex), and ensure that those experiencing health inequalities are also involved – we have extended this to include carers. To help us understand these potential impacts in detail, the programme will run focus groups with these populations using existing meetings and events held by support groups, particularly the voluntary and community sector. We will also use focus groups to engage with individual practice patient participation groups and

other patient groups. The programme will utilise the support of local organisations, voluntary and community groups and local support networks to reach out and involve these communities.

- **Deliberative events** – We will hold a series of face-to-face deliberative events to enable members of the public, voluntary and community sector stakeholders, parish councils and other interested groups to share their views and give us an understanding of the impact of proposals on them and the people they may represent, with information given by local providers including clinicians and ICS leaders. We are suggesting up to 12 public events to ensure that the diverse population of Nottingham and Nottinghamshire – and people living across our borders – can be involved.
    - To ensure we cater for people who work and those that don't, the programme will hold the events at differing times, both daytime and evening. All feedback from the events will be captured and the key themes and points of any discussions recorded along with the attendance in terms of equality and diversity requirements. These records will form part of the evidence to inform the final decision-making process.
    - We will also capture any questions and draw up a question-and-answer section on our website, so that answers can be viewed by everyone. The programme will ensure that sufficient numbers of activities are undertaken to capture the views of ethnic minority groups, particularly in Nottingham City, as well as in the main areas of deprivations, to ensure we assess the impact for people living in poverty or with low incomes.
- **Roadshows** – To provide opportunities for the public to find out about the consultation and share their views, we will run road shows at supermarket and community sites. During these sessions the programme will raise awareness of the consultation and signpost people to our consultation website and response form. TNUH will also provide copies of the summary consultation document and response form so they can either take it away to consider or complete it immediately.
- **Outreach** – we will arrange for displays and/or manned or unmanned exhibition stands to be situated in prominent areas where there is a high footfall to engage with the public, signposting them to further information
  Briefings – we will hold briefings with key stakeholders, including Healthwatch, local authorities, the Maternity Voices Partnership, and any other key interest groups. We aim to hold these briefings early in the consultation period, to enable these stakeholders to cascade information to their membership and contacts.
- **E-newsletter** – To keep the consultation at the forefront of discussions we will produce a regular e-newsletter, updating people on the opportunities for getting involved. TNUH will use it to publicise our events and road shows and signpost people to the website and response forms.
- **Networks and contacts** – We will work with voluntary sector colleagues and those local organisations that have newsletters and magazines both off and online, to publicise the consultation and signpost people to the website and response form. This will include providing updates on a regular basis throughout the consultation to these organisations, asking them to support our communications. We will also undertake dedicated work with key voluntary sector bodies and commission them to

undertake specific outreach with population cohorts to ensure that their voice is heard.

- **Communication activities** – We will raise awareness of the consultation, associated engagement activities and call to action through a range of communication channels including media, social media, websites, consultation newsletter, stakeholder communications channels and by distributing a range of communications materials, including digital assets. We will work with the Nottingham Post to coordinate regular features and updates. We will also engage with weekly newspapers, TV and radio stations, including commercial stations.
- **Advertising** – We will use online and offline advertising to reach key areas of the community including seldom heard groups.

11.3.2.3 Working with the Department of Health and Social Care

The Department of Health and Social Care (DHSC) has also outlined key messages to include in communications and inform messaging during the consultation process. These will be used as and when appropriate.

The DHSC NHS campaigns team is acting as the central hub for all public communications activity about the New Hospital Programme. They are asking for a number of considerations when progressing communications and engagement activity. These include:

- Keeping them updated on plans for upcoming communications and engagement milestones and activities.
- Linking online content to the NHP website
- Giving them advance notice of clearance requests (five working days).

11.3.3 Capturing feedback, analysis and reporting

We are providing a range of channels, to facilitate feedback on our proposals. This will include feedback received through:

- Online / digital and hardcopy / paper survey responses
- Qualitative responses through direct emails, feedback forms and telephone calls
- Transcripts of virtual/on-line focus group discussions
- Minutes of meetings
- Letters
- Petitions
  Direct social media messages.

Once the formal consultation data input has taken place and the data analysed, the ICB Engagement Team will ensure that all the intelligence is captured into one report. This report will provide a view from staff, public, patients, carers and key stakeholders on the proposals.

11.3.4 Collection and analysis of consultation responses

The results of consultation are an important factor in health service decision-making, and one of several factors, data and evidence that need to be considered. Information, views, and feedback are vital in helping to shape the future of services and are considered

alongside recognised clinical quality guidelines and best practice, as well as workforce, financial and other evidence.

We will provide a wide range of mechanisms for people to respond to the consultation. All feedback, whether verbal or written, will be collected, logged, and considered. Respondents will be encouraged, but not required, to use the main questionnaire.

Throughout the consultation period we will monitor responses to identify any demographic or other trends which may indicate a need to adapt our approach regarding consultation activity or refocus efforts to engage a specific group/locality.

In line with best practice for a consultation of this nature the University of Nottingham has been commissioned as an independent research/engagement organisation to analyse the responses and produce a non-biased objective report summarising all feedback.

A public consultation is not a referendum, and we will not be asking people to vote for one option or another. What we will be seeking from the consultation responses is to fully understand the impacts (positive and negative) that people believe the proposals will have, to understand issues and concerns and how they might be mitigated. The consultation also provides an opportunity for any additional evidence, data or alternative proposals or variants on the proposed options, and solutions to be put forward that would meet the opportunities and challenges described in our case for change. Feedback will be used to shape the final proposals and allow us to consider mitigating actions for concerns that are raised.

This decision-making process will comply with the NHS England guidance '*Planning and Delivering Service Changes for Patients*'[161].

11.4 Meeting the SMART objectives for consultation

The success of our consultation will be measured against the aims and SMART objectives set out in the consultation plan, including:

- the depth and breadth of responses/feedback on the proposals
- the targets for reach set out in the full consultation plan
- feedback from respondents on the process of the consultation, including their views on how the consultation has been conducted
- feedback from the Health Scrutiny Committees, Healthwatch Nottingham and Nottinghamshire, and NHS England post consultation
  whether we meet our statutory and legal duties associated with the consultation.

11.5 Resourcing plan

To deliver an effective best practice consultation we will commit sufficient resources, including internal staff, specific expertise from external agencies, and a non-pay budget for a range of essential expenditure.

Running a public consultation exercise is challenging and requires a core team that has sufficient capacity, is resilient, professional, and ideally consistent to take the programme

[161] Planning and delivering service changes for patients, NHS England, 2018

through from start to finish. This team will consist of health and care leaders, clinical leaders, in-house communications and engagement staff and additional capacity and expertise commissioned from external suppliers.

11.6 Meeting Tomorrow's NUH legal duties on equality and health inequalities

Integrated Care Boards (ICBs) have separate legal duties on equality and on health inequalities. These duties come from:

- The Equality Act 2010
- The NHS Act 2006 as amended by the Health and Care Act 2022

In developing the consultation plan we have:

- Given due regard to the need to eliminate discrimination, harassment and victimisation, to advance equality of opportunity, and to foster good relations between people who share a relevant protected characteristic (as cited under the Equality Act 2010) and those who do not share it; and
- Given regard to the need to reduce inequalities between patients in access to, and outcomes from healthcare services and to ensure services are provided in an integrated way where this might reduce health inequalities.

To inform proposals and to help shape pre-consultation engagement and this consultation plan, independent equality impact assessments (EIAs). This analysis has informed the approach to ensuring we meet our duties under the Equality Act 2010. It has also informed how we consider our duties to reduce health inequalities.

To ensure the consultation process meets the requirements to evidence that due regard has been paid to our equality duties, all the consultation activity will be equality monitored routinely to assess the representativeness of the views gathered during the formal consultation process. Where it is not possible to gather such data, such as complaints and social media, we will record any information provided. Halfway through the consultation we will review responses so far and adapt our approach to seek more feedback from any groups that might not so far have fed back.

Once gathered the consultation data will be independently analysed. At a mid-point in the consultation, analysis will be reported to highlight any under-representation of patients who we believe could be potentially affected by any change in services, and if this is demonstrated further work will be undertaken to address any gaps.

Once complete the analysis will consider if any groups have responded significantly differently to the consultation or whether any trends have emerged which need to be addressed in the implementation stage. This data will also be used as part of the evidence to support the equality impact assessment process which will be carried out simultaneously

11.7 Risks

Risks and mitigations will be managed through the programme and partnership board governance and coordinated by communications and engagement teams at the ICB and at TNUH.

Risks around communications and engagement will be fed into the overall risks log for the programme. By identifying communications and engagement risks we will be able to mitigate them through planning and timely communications, ensuring that they are dealt with on an ongoing basis. These risks will be aligned with our programme risk register (see Appendix 32).

Risk	Mitigation
Failure to engage with relevant stakeholders and meet statutory duties / stakeholders feel they have not been fully involved.	Communications and engagement plan developed, identifying stakeholders and partners with detailed communications activity implemented during consultation period
The consultation process does not engage with marginalised, disadvantaged and protected groups.	Communications and engagement plan identifies relevant groups and organisations that we will work with to access these groups and communities.
Lack of response / "buy in".	Ensure accessibility of activities and appropriate feedback mechanisms using a range of online and offline media. Implement mid-point review to assessment responses and modify communications and engagement activities accordingly.
Proposal in consultation document perceived by members of the public as a "cost cutting" exercise or a 'done deal'.	Ensure, through all communications, that public are aware of previous engagement activities and have knowledge of the clear rational for the proposal for change.
The consultation may be subject to challenge and the lack of options for public to comment on may be criticised.	Appropriate governance policies/standards will be put in place to ensure correct procedure, logging processes and equality analysis are maintained throughout the consultation, and that public are fully aware of the engagement that led to the narrowing down of options to the proposals.
Campaign group challenges proposals.	Ensure that consultation documents outline how the proposals have been developed and how they will benefit patients by improving services available to them. Ensure we are following due process and logging all engagement. Ensure that we are prepared through the processes in place to receive any petition.
Individual public concerns overriding the 'vision' of the Tomorrow's NUH programme –	Communications and engagement plan maximises the opportunities to engage with communities around the county – focus groups providing

e.g. GP appointments, routine op waiting times and, more locally, the Care Quality Commission report – disrupting engagement with programme.	targeted information of the Tomorrow's NUH vision.
Covid-19 may have repercussions on how stakeholder's access and engage with the programme.	Ensure contingency plans are in place should stricter Covid-19 restrictions be re-introduced (would include 'virtual' activity and opportunities for digitally marginalised to take part).
Continual delays or misinformation on programme progress, leading to apathy.	Communications and engagement plan has been instigated to ensure 'continuing the conversation' happens.
There are insufficient resources allocated to the consultation, leading to an impact on the target number of 10,000 responses.	Comms and engagement activity will be rigorously costed, and budgets agreed and allocated accordingly.
A number of separate but interlinked public engagement and consultation exercises are undertaken at a similar time, creating public confusion between the different proposals, and requiring additional resource for the Tomorrow's NUH project.	ICB Communications and Engagement team has oversight of all potential consultations required and will seek to sequence appropriately. Additional ring-fenced resource in place for Tomorrow's NUH and agreement in principle for other potential major consultation (Newark).
The Ockenden review of maternity services at NUH will detail summary of findings, conclusions and essential actions which could impact the TNUH timescales and clinical proposals.	Ensure the programme momentum is maintained whilst being pragmatic and courteous to the review. Ensure appropriate messaging is developed with the review team, as part of the public consultation.
May 2023 District Council and City Council elections leading to change in members and/or political agenda.	Dates are included in consultation plan to ensure appropriate action is undertaken at the relevant time.

Media publish mis-leading or conflicting information about the TNUH programme.	Media 'management' and 'continuing the conversation' progressing, briefings to be held with target media before – and during - consultation.

Table 23: Risks and mitigations

11.8 Conclusion

Our consultation plans are created to ensure we deliver best practice and fulfil our statutory consultation duties. We will ensure comprehensive engagement across patients, the public and staff through a wide range of methodologies and mechanisms to allow effective communication with a wider spectrum of groups and individuals. The full consultation plan (Appendix 35) sets out how Nottingham and Nottinghamshire Integrated Care Board will be assured that public consultation will gather effective feedback to inform the final decision making process.

12 Implementation planning

This chapter describes how, dependent on the outcome of consultation, the chosen option will be implemented. We have developed high level implementation plans for our proposed option for consultation. Subject to the outcome of consultation, the timeline anticipates the hospital reconfiguration commencing in 2025 and being completed during 2031. We have given consideration to the interdependencies between out of hospital care and acute care in our implementation plans.

We have developed high level implementation plans for both QMC and City Hospital and have considered key implementation enablers including project management, governance, finance, workforce, transition planning and stakeholder engagement. High-level risks to implementation have also been considered and a risk management plan is in place.

Pre-consultation activities and the next stages of the business case process (i.e. decision making business case, outline business case and full business case) would be completed by 2027. For the proposed option, the plan would be for the implementation to commence from the end of 2027 at the earliest.

12.1 Introduction

Whilst pre-implementation activities including the development of the pre-consultation business case (PCBC) and the decision-making business case (DMBC) will be led by the Integrated Care Board (ICB), the implementation of the capital consequences of the system reconfigurations and other necessary investments to create sustainable fit for purpose acute hospital estates lies with Nottingham University Hospitals NHS Trust (NUH). Patients, carers, members of the public and all organisations involved in the pre-consultation business case will also be involved in the transition and implementation planning.

12.2 Decision-making process

Any decision-making about implementation will be preceded and informed by:

- the outputs of early engagement
- the options consideration process
- assurance by the Clinical Senate of the clinical model
- assurance by NHS England of this pre-consultation business case (PCBC)
- outputs of the integrated impact assessment
- formal public consultation.

Following assurance and consultation, a decision-making business case (DMBC) will be developed to review the outcomes and set out any decisions. As set out in the NHS guidance, Planning, assuring and delivering service change for patients[17], a DMBC should ensure that:

- the final proposal is clinically, economically and financially sustainable
- the proposal can be delivered within the planned envelope for capital spend
- a full account is given of how views were captured during consultation.

Where there are any major changes, the DMBC may be assured by NHS England before any final decision making.

Implementation of our proposals is therefore dependent on the outcomes of public consultation and any decisions taken as part of the DMBC.

For major spending proposals (cases over £15 million), there are key stages in the development of a business case, which correspond to the key stages in the spending approval process for NHS England. For the process we are following the PCBC and the NHP's programme business case acts as the Strategic Outline Case.

Nottingham University Hospitals NHS Trust will therefore need to:

1 develop an outline business case (OBC), including:
   - assessment and evaluation of the overall impact, financial and non-financial (including full quality impact assessments)
   - a clear statement of affordability and funding sources for capital and revenue

2 develop a full business case (FBC), including:
   - financial figures that are confirmed and final
   - a clear statement of affordability and funding sources for capital and revenue

12.3 Timelines for implementation

Pre-consultation activities and the next stages of the business case process (i.e. decision making business case, outline business case and full business case) would be completed by 2027. For the proposed option, the plan would be for the implementation to commence from the end of 2027 at the earliest this is an indicative timeline as the programme continues to work closely with NHP.

More detailed implementation plans will need to be developed after consultation, as part of future business cases for the preferred option. At a generic level, however, the underlying activities that would need to take place as part of implementation are known, as is the sequencing and timing of any proposed changes. A high-level implementable plan is illustrated in Figure 133.

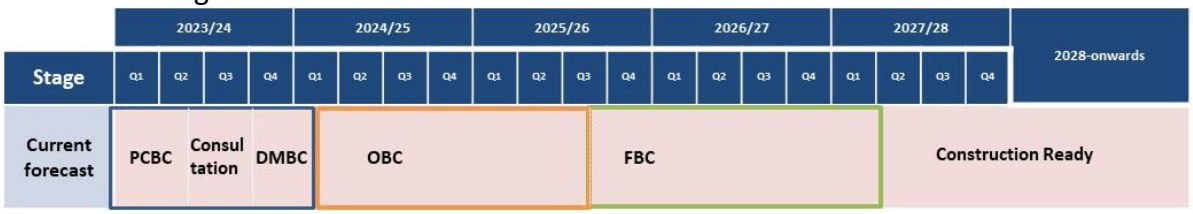


Figure 133: High level implementation plan for TNUH (indicative)

12.4 Implementation plans

Implementation is dependent on the outcome of consultation and any decisions taken following consultation.

12.4.1 Plans for out of hospital care

The clinical model emphasises the importance of out of hospital care, as one of the clinical design principles and a reflection of aims identified in the NHS Long Term Plan. The plans for this are related to integrated care which cuts across all of the clinical services. Work has already begun towards an integrated model of care through the clinical model framework set out in the Integrated Care System clinical and community services strategy (CCSS).

We recognise and have given consideration to the interdependencies which exist in implementation between out of hospital care and acute care. The community care transformation is currently within its first phase – this is focussed on neighbourhood and community development. The aim of this phase is to develop local community assets with the goal of increasing capacity, scope and sustainability. This will then in turn create capacity within community health and social care services. Community health and social care teams will then consider how this extra capacity can be used in the best way for that community. Once these new ways of working are embedded neighbourhood teams, specialist services can be redesigned based on the models and additional functions delivered though the new capacity within neighbourhood teams. During phase 2 there will be a direct interface with the TNUH programme to ensure that acute services are involved in the specialist service redesign and that where possible and practicable services move to be delivered in the neighbourhoods that need them.

12.4.2 Plans for hospital care

Figure 134 provides an implementation plan for changes at both the QMC site and City Hospital site. This shows that the first major phase of construction will commence at the earliest end of 2027 at the QMC site with the Family Health block and Theatres and Intensive Care Units on the City site, with construction then phased to take place on both sites.

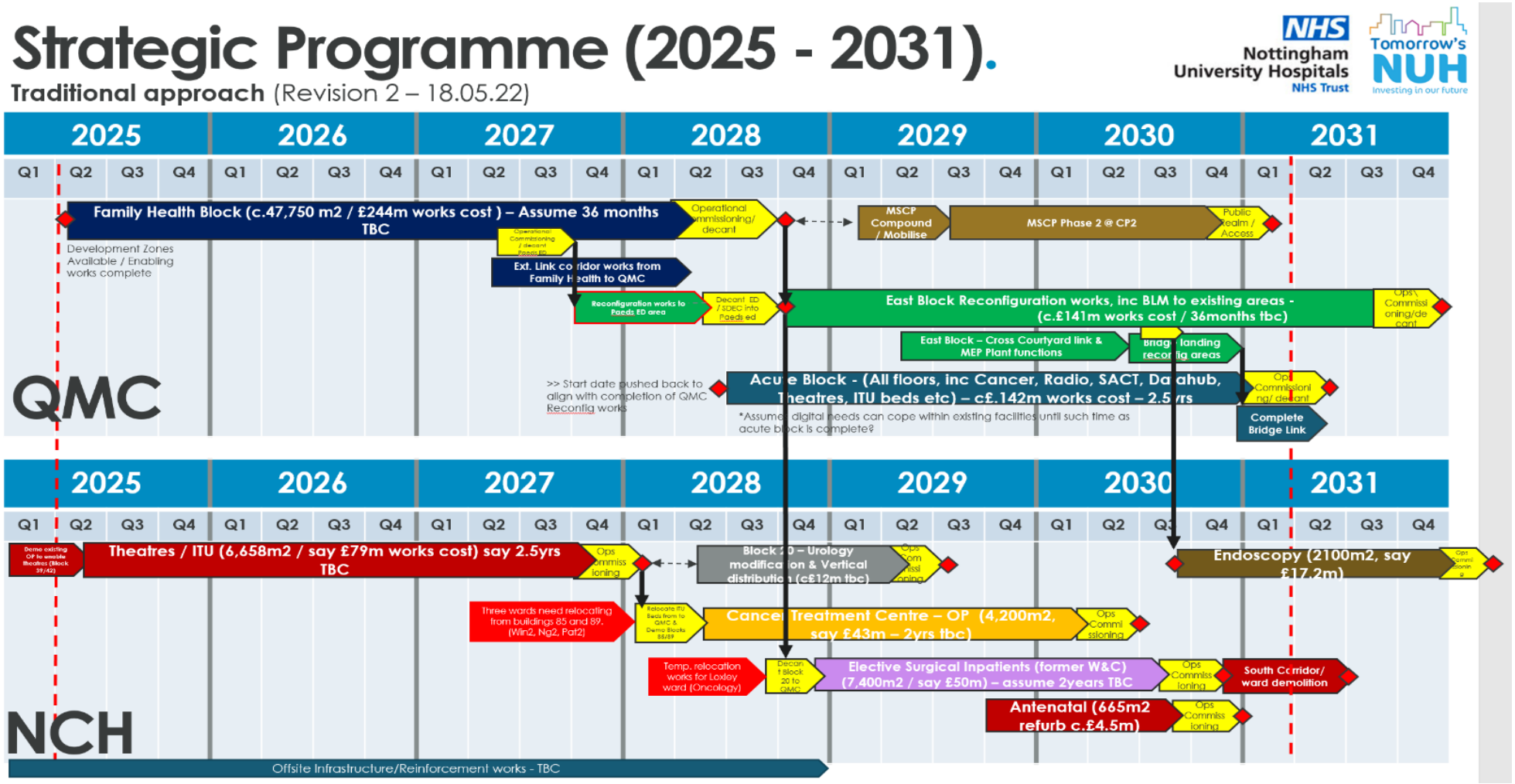


Figure 134: Implementation plan for QMC and NCH sites (timescales indicative)

12.5 Key enablers for implementation

12.5.1 Access to capital

Appropriate capital will need to be secured to invest in new or refurbished buildings and gaining approval for capital bids will be part of the process of implementation. The capital investment will be funded through the New Hospital Programme. This will require an outline business case (OBC), and a full business case (FBC).

12.5.2 Transition funding

The impact of the proposals has been modelled to show that the changes are affordable. In the interim, as the changes are made, there will inevitably be some costs associated with the transition. The indicative allowance of circa £2 million was set aside to reflect the potential costs of transition and was discussed with the directors of finance and agreed in principle on 5th July 2022 that these will be met.

The expected capital costs to deliver the enabling schemes, OBC and Full Business Case (FBC) will be captured within the capital costs. There are also double running revenue costs to consider as the costs of implementing services during the implementation phase of the programme. These will be explored further in the OBC.

12.5.3 Finance

There are plans to quantitatively evaluate finances before, during and after implementation. This approach to monitoring and evaluation will support improvements in costs, general and wider economic benefits and timing for use in programme appraisal. Understanding the capital investment, including capital cost forms as well as financial risks are of critical importance in ensuring system affordability and implementing the proposed option. Please see section 7.5.7 for more details on this.

12.5.4 Workforce and organisational development (OD) programme

The change to staffing structures and ways of working is potentially one of the most complex areas of transition. The proposed changes will have a significant impact on our workforce, including:

- a requirement for staff to move to work on different sites
- changes in the overall mix of skills / grades required
- the development of new roles
- a requirement for training to develop new skills
- increased integrated working across organisational boundaries
- developing a continuous change culture which will include reviewing, changing and aligning consistent ways of working.

It will be critically important to communicate plans quickly and comprehensively with any affected staff. Regular briefings, individual 1:1s and engagement events will be held with all staff likely to be affected by the proposed changes.

Other key workforce enablers that will support the implementation of the proposed workforce changes include:

- improved integrated working across organisational boundaries, including closer working between health and social care
- localised workforce planning and redesign undertaken by Primary Care Networks, including promotion of career development and new and enhanced roles
- social care sector recruitment campaign, continued sector engagement and events to develop a care sector workforce strategy
- ensuring our workforce are 'digitally ready' through training, access to education platforms and use of digital champions.

A comprehensive workforce and organisational development programme will be established to plan and manage these changes. This will be led collaboratively across the Integrated Care System.

12.5.5 Transport planning

A draft Tomorrow's NUH Travel Plan has been developed building on the current NUH Travel Plan and the travel impact analysis to identify what the future implications of the Tomorrow's NUH proposals may be on the travel habits of the organisation's population.

The plan highlights the impacts of our proposed changes on for example on-site demand, parking capacity, access and travel times. It describes a number of proposed mitigations as shown in Table 24 below:

Description of mitigation
1. 1500 space Multi-Storey Car Park to accommodate displaced spaces and small net increase
2. Increase car parking capacity through second Multi-Storey Car Park and off-site parking to accommodate increase in demand from service model
3. Increase bike / scooter storage at QMC as a result of increase demand
4. Improved patient way finding including but not limited to digital solutions
5. Improved patient transport around sites e.g. patient buggy service to transport patients to and from their appointments
6. Careful considerations of the location of services in new building designs ensuring services with the most footfall are accessible e.g. ground floor
7. Realign bus drop off points at both sites to ensure alignment with future location of services
8. Consider public transport access to QMC for Basford, Bestwood and Sherwood wards

Table 24 Proposed high level mitigations for travel and access

The draft travel plan can be viewed at Appendix 36, and we will continue to develop the travel plan and mitigating actions working closely with key stakeholders including the local authorities and transport providers to ensure that the hospital sites are accessible to the local community.

12.5.6 Stakeholder engagement

We will continue to actively engage with stakeholders during implementation. This will include the following groups:

- patients and public – we will invite patients and carers to co-design future pathways of care and how the new and refurbished buildings work, to ensure they meet people's needs, and we will ensure people are fully aware of which services will be delivered from which locations in the future
- NUH – will be taking a lead in the planning and implementation of service change, particularly to support service change impacts that need to be implemented smoothly across multiple providers and for activity shifts between acute and local care
- NHS staff – NHS organisations including Nottingham University Hospitals Trust (NUH) will actively engage with their teams to build awareness of the reconfiguration proposals and their central role in making these changes happen, including listening to any concerns and doing their best to mitigate them
- clinicians – will be actively involved in the planning and implementation of service change to ensure patient safety is not compromised as changes are made
- local authorities – we will work together with our partners in social care, public health, and local councils.
- Local Health Resilience Partnership – we will continue to engage with the LHRP through OBC and FBC stages to ensure that the implementation does not impact on the systems ability to respond to a major incident.

12.5.7 Resourcing

This is a complex and ambitious programme and will therefore require large scale planning, management, and close working with business-as-usual and operational teams. We have identified a requirement for a ring-fenced Tomorrow's NUH programme management office (PMO) resource to support the implementation of the programme. The PMO will be responsible for the pre-planning and implementation of the transformation and managing the overall integration process, including prioritising activities, and highlighting and escalating any actions, issues, and risks to the Programme and Partnership Board.

Other key activities that the PMO will co-ordinate and oversee include:

- finalising implementation plans and governance
- establishing a performance and monitoring function
- implementing the benefits framework and ongoing benefits realisation review.

In addition, we will allocate resource to specific project teams established for overseeing the development of implementation and transition plans for complex areas such as workforce. This resource will continue irrespective of the personnel in the team. We will ensure there is a robust process in place for maintaining continuity as the programme progresses.

12.6 Transition planning

Once any new facility has been built, a transition will need to take place between any old site to any new site. This requires careful planning and involves four main phases:

1. preparing the new facility for relocation, e.g., equipment / technology installation
2. department planning and design, e.g., setting out service locations within any new facility
3. staff preparation, e.g., educating staff with new equipment / technology / processes
4. physical patient and staff transition. This requires detailed plans for all services, and sometimes specific patients, to provide a schedule for the move.

These plans will be set out in more detail while within the decision-making business case.

12.7 Key implementation risks and mitigations

Effective risk management is imperative not only to provide a safe environment and improved quality of care for patients and staff, but also for the management and planning of publicly accountable health services. The consolidation of clinical services across organisations brings risks which will need to be carefully managed throughout implementation and beyond.

The risk management process involves the identification, evaluation, and mitigation of risk as part of continuous practice aimed at reducing the incidence and impact of risks, which may include risks related to patients, people, performance, and partnerships. Risk management is therefore a fundamental part of both the operational and strategic thinking of every part of service delivery.

The TNUH programme meets regularly to review overall risks to the programme. The Programme and Partnership Board meets monthly and reviews all red risks. All risks are reviewed by the board on a quarterly basis. A full risk register from the most recent meeting relating to the overall programme is available in Appendix 37.

	Risk	Mitigation
Finance	There is a risk if the programme cannot draw down money to carry out enabling works in this spending period then there would be a delay to the start date of major works.	Clarity to NHSE and the national programme team of what draw down is required and what for and what the consequences of delay are. Further work undertaken by the programme to develop options in relation to enabling works. Enabling works issue also raised at the National Hospital Programme (NHP) visit to Nottingham University Hospitals Trust (NUH) (8 June 22). Update Sept 2022: The NHP have released an enabling works template which was submitted on 31 August 22. The template has being developed to support establishment of a delivery pipeline to plan, prioritise and fund enabling and early works across the NHP. The NHP will now be undertaking a prioritising exercise across the cohorts.
	There is a risk that the increase in costs resulting from inflation, net zero carbon and other NHP standards may result in the cost of delivering our current plans exceeding the target funding allocation.	Our estates stage 3 work was supported by technical teams to ensure current cost plans were understood. Ongoing engagement with NHP to ensure all known standards / requirements are included within our plans as and when updated. Update Sept 2022: Inflation risk remains and the programme continue to liaise with NHP with regards this issue. Inflation risk is also a standing agenda item at the Finance, Estates and Activity Advisory Group.
	There is a risk of reduction in NHP (HIP2) funding envelope, limiting the capital allocation to NUH, causing delays and/or the scaling-back of the Programme's ambitions.	Compelling case for change and evidence of value for money to ensure priority assignment of any capital. Continued engagement with NHS England (NHSE) and NHP from the outset of programme. Letter released 23 Feb highlighted NHP working toward an approval of their PBC in late spring / early summer 2022. Regional NHP Lead formally invited to attend all monthly TNUH Programme Boards.

		Update Sept 2022: TNUH continue to liaise closely with the NHP.
Meeting timelines	There is a risk that if we do not fully mitigate against the recent delays associated with the critical path for the pre consultation business case (PCBC) we will not be able to commence construction in April 2025 as is the current plan.	Clear critical path for completion agreed. Close working between teams to ensure actions are delivered. Weekly reporting on progress to senior responsible officer (SRO) through weekly working group in place. Update Sept 2022: The first draft of the PCBC was received in August 22, however significant modifications are required before the case can enter the formal approvals process. Next steps have been agreed and an action plan developed to ensure and updated draft PCBC is received in October 22. The updated draft PCBC will be presented to the Programme and Partnership Board in November 22.
Meeting demand	There is a risk that predicted changes to demand (demographic growth) for in-hospital services will prove to be inaccurate, causing unsuitable sizing and/or affordability of the programme.	The programme will refine and re-cast numbers at each stage of the process building on detailed plans as they arise. Further work was undertaken to look at any changes in demand over the last 2 years which may cause us in future to reflect on some of the assumptions in the current model. The programme will also benefit from national modelling work which is taking place. Update Sept 2022: Further activity and demand analysis is being undertaken in response to the clinical senate recommendation (July 22).
	There is a risk that the proposed clinical models may not address the needs of the integrated care board (ICB) population, address existing health inequalities and create inequitable access to services for some groups.	Integrated impact assessment (IIA) commissioned. IIA identified the groups within the population who are potentially adversely impacted by the proposals and engagement is ongoing with these groups to determine the potential impacts upon them and work through mitigations. Travel plan under development which will consider issues of access to the hospital sites. Update Sept 22: System Analytical Unit (SAIU) are producing detailed analysis for inclusion in the PCBC document. Analysis will also provide basis for community engagement and inform

	There is a risk that predictions for changes to healthcare growth over the next 50 years will prove inaccurate, causing unsuitable sizing and/or affordability of the programme.	Designs to include ability to provide flexibility of clinical application. Clinical Advisory Group and workstreams will share their clinical expertise and insights into the direction of travel for their own specialties. Corresponding workstreams (people & digital) input to help shape the above to ensure needs are met and future development plans formulated. Update Sept 2022: TNUH will also benefit from our work with the NHP who have a demand and capacity workstream in place.

Table 25: Key risks and mitigations

13 Next steps

This chapter sets out next steps for the programme. The Tomorrow's NUH (TNUH) programme, will comply with HM Treasury's Green Book requirements for significant capital investments and NHS England guidance on the business case process for major service change. Following this pre-consultation business case (PCBC) submission for approval, we will undertake a public consultation, which will inform the development of the decision-making business case (DMBC). The decision-making business case (DMBC) will be used to decide on a preferred option. Once this has been approved an outline business case (OBC) and full business case (FBC) will be developed by Nottingham University Hospitals NHS Trust (NUH) and approved before construction and implementation can occur.

As part of the *Health Infrastructure Plan* published in 2019, the Government announced funding for up to 40 new hospital build projects, which included investment in Nottingham University Hospitals NHS Trust. As this programme is part of the *New Hospital Programme* final assurance and decision making on the capital allocation will be required from the New Hospital Programme Investment Committee.

13.1 Assurance of the pre consultation business case

This document is the business case to support the Nottingham and Nottinghamshire Integrated Care Board in its decision to consult on proposals to reconfigure and improve acute hospital services. Within NHS reconfiguration schemes, the pre-consultation business case is the cornerstone of the assurance and decision-making process, as it provides the information and evidence to support the consulting body in assessing and deciding which options to take to consultation. This pre-consultation business case, therefore, is a technical and analytical document that details proposals for the future of acute hospital services Nottingham and Nottinghamshire.

We believe that this pre-consultation business case:

- clearly describes a compelling case for change, with issues that need to be addressed
- provides background to the proposals and explain the objectives to be achieved
- describes the strategic policy context
- demonstrates how we have involved staff, stakeholders, patients, the public and, local communities in this work, and presents feedback from our engagement with different stakeholder audiences to date
- sets out the rationale for the proposals and make the case for change at a strategic level
- articulates our vision and our proposed future clinical models to achieve this, including significant investment in our hospital estate and new hospital buildings for Nottingham and Nottinghamshire
- maps out the options for future provision of sustainable integrated specialist acute services
- describes how the options have been explored and appraised
- details the impact and benefits associated with the proposed options for public consultation

- sets out our high level implementation plans
- outlines the next steps of the proposed formal public consultation process and beyond.

We have been through an extensive process to consider an exhaustive list of options and refine them into the option we are proposing for consideration as part of a formal public consultation plus a clear long-term strategic ambition for further centralisation of specialist acute services over time, that we will also share.

13.1.1 Quality assurance process

A robust quality assurance process underpins our programme, which gives assurance to this pre-consultation business case. Clinicians have been at the heart of setting out the case for change and designing the proposals we describe in this document, which have also been assured by the East Midlands Clinical Senate and scrutinised by the Health Overview and Scrutiny Committee. The whole process and engagement undertaken by the programme is being assured by NHS England and going to public consultation is dependent on this assurance being received. We have met the four tests for reconfiguration set out by the Secretary of State for Health and Social Care, plus the 'beds' test set out by NHS England showing:

1. evidence of strong patient and public involvement
2. consistency with current and prospective need for patient choice
3. a strong clinical evidence base
4. support for proposals from clinical commissioners
5. no reductions in acute beds.

Section 10 outlines the governance and assurance process underpinning the programme and describes in detail how we have assured the proposals set out in this pre-consultation business case, clinically, financially and within the context of the rigorous national process and requirements for assuring service change within the NHS.

13.1.2 Regulatory assurance

We have been developing our proposals for this pre-consultation business case (PCBC) since May 2020, ensuring that it is as strong as possible.

The Regional NHS England Panel met on 10 May 2023 and a subsequent meeting was held on the 16 August 2023 which was a follow up from the Executive Investment Group on the 20th July 2023. On 23 August 2023 confirmation was received from NHS England that on balance they were assured that the proposals meet the five tests for service change as well as other good practice checks and as such, are content for the programme to proceed to public consultation.

13.1.3 System assurance and the 'decision to consult'

This PCBC was considered in full by Nottingham and Nottinghamshire Integrated Care Board in a 'decision to consult' meeting on xx. It was agreed that xx [DN: to be added when the meeting happens].

13.2 Programme timeline

Figure 135 provides an overview of the programme through ***indicative*** milestones:

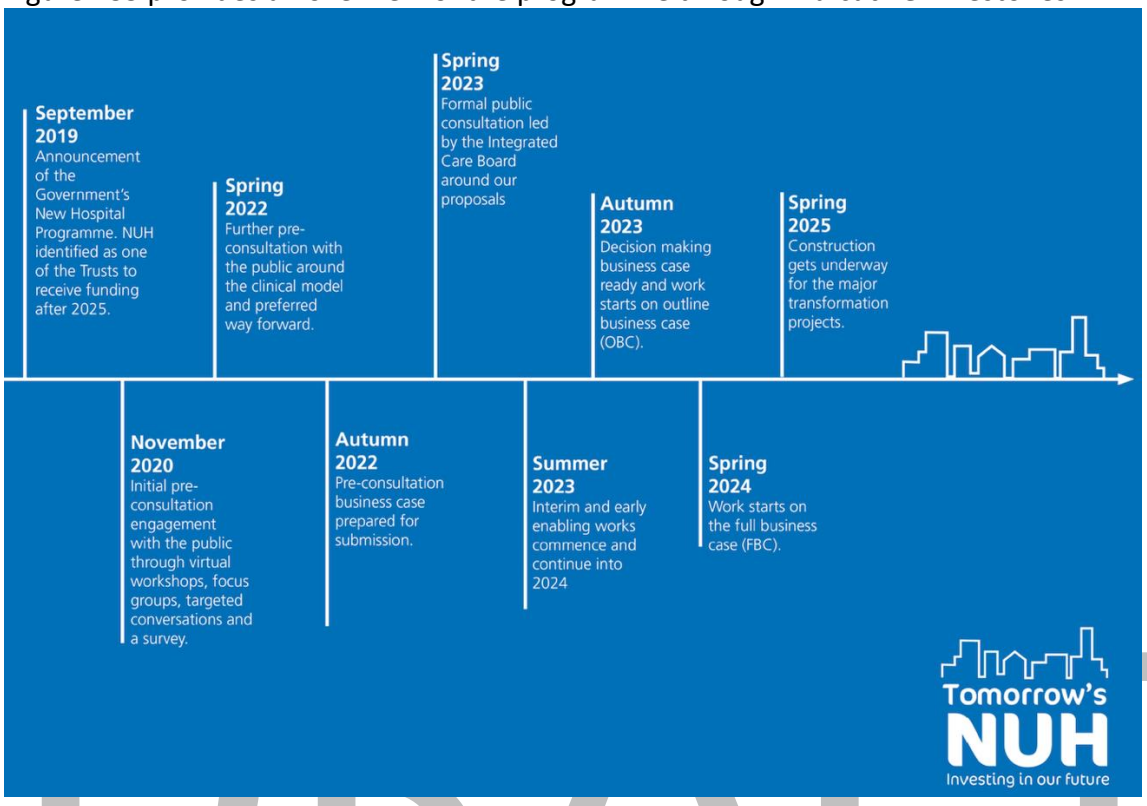


Figure 135: TNUH programme timeline

13.3 Risks

The risk register logs and maintains all risks (threats and opportunities) related to the Tomorrow's NUH programme, providing a record of these risks and their status. The risk register is reviewed and updated every month. This is an ongoing process for the duration of the project in order ensure timelines are met, the programme is meeting targets and any issues are accounted for. The most recent risk register is in Appendix 37.

13.4 Next steps for stakeholder engagement

Our engagement programme with staff, patients, system partners, local communities and other stakeholders has continued as we have developed the PCBC and has included surveys, focus groups and ongoing meetings, briefings, and discussions as we have refined our proposals. We will continue to engage with all stakeholders and audiences as we move towards formal public consultation and will develop communications plans to support key programme milestones and announcements, including the outcome of key meetings such as the 'decision to consult' meeting.

13.4.1 Moving to formal public consultation

Section 3 sets out our approach to consultation. We are planning for this to take place from autumn 2023 and more detail on the consultation plan is available in section 11. We will continue to work with our stakeholders to refine our consultation planning.

13.4.2 Health overview and scrutiny committee (HOSC)

As well as conducting a full public consultation on our proposals for change, we will also be seeking to consult directly with local authorities on our proposals via the health overview and scrutiny committees (HSC). This is as per our Section 244 duty under the *National Health Service Act 2006* (as amended by the *Health and Social Care Act 2012*), which requires NHS bodies to consult relevant local authorities on any proposals for substantial variations or substantial developments of health services.

We will meet with HSC members through the consultation period to hear members' views, answer questions, and update the committee on the progress of the public consultation. We would then seek a further meeting at the end of the consultation period, once we have an independent report of the consultation findings to share with the committee. We will agree regular meetings to keep the committee updated through the next stage of our work and preparation of our decision-making business case (DMBC) before the Nottingham and Nottinghamshire Integrated Care Board makes a final decision on their proposals for change.

13.4.3 Post consultation

After the consultation closes, the responses received from members of the public, patients, staff, stakeholders, and partner organisations will be independently analysed, as per best practice. A report based on this analysis will be submitted to the ICB Board to help inform its decision-making, alongside all the other evidence and data gathered throughout the lifecycle of the programme, which together will be reflected in, and will help inform, a decision-making business case (DMBC).

13.5 Developing a decision-making business case

The process to develop the decision-making business case will be supported formally through the established programme governance. Additional workshop sessions will be undertaken to support Board members to consider consultation responses carefully and conscientiously. These sessions will happen as part of the preparation for their decision-making meeting and consideration of the DMBC in the round.

On approval of the DMBC by the Nottingham and Nottinghamshire Integrated Care Board, the outline business case and full business case will be finalised for approval by the Nottingham University Hospitals NHS Trust Board, NHS England, the Department of Health and Social Care and HM Treasury.

13.6 Next steps for the integrated impact assessment (IIA)

The programme commissioned an independent integrated impact assessment (IIA) in 2020, which was updated in 2022, to assess the impact of the proposals. A copy of the full pre-consultation IIA can be found in Appendix 27. The report sets out an assessment of the potential impacts which may be experienced as a result of the proposed changes to healthcare services across Nottingham and Nottinghamshire and, in line with commissioners' public sector equality duty, helps to ensure that genuine consideration is given to equality as part of the decision-making process.

By paying due regard to the findings of the IIA in our decision-making, we will be compliant as commissioners with the *Public Sector Equality Duty* (PSED) under *section 149* of the *Equality Act 2010*, and the duties to reduce inequalities under *s.14T of the National Health Service Act 2006.*

The IIA will be revisited over the course of the consultation process and beyond, as part of an iterative process. The IIA focuses on assessing and describing the potential impacts of the proposal for service change. We will review and refresh the IIA considering the findings from public consultation.

14 Appendices

14.1 Appendix 1:

- Phase 1 engagement survey/social media response
- Phase 2 engagement summary

14.2 Appendix 2

- TNUH Workforce Engagement Plan

14.3 Appendix 3

- People Strategy – July 2022 - Final
- TNUH People Workstream PCBC Content v1.8

14.4 Appendix 4

- Nottinghamshire ICS CCSS

14.5 Appendix 5

- Nottingham University Hospital Maternity Improvement Plan
- Nottingham University Hospital Maternity Improvement Plan - Data
- CCG briefing county HSC maternity improvement

14.6 Appendix 6

- PHM ageing well deep dive April 2021
- PHM diabetes deep dive refresh February 2022
- PHM COPD report July 2022

14.7 Appendix 7

- Urology ICS CCSS FINAL
- Respiratory ICS CCSS FINAL
- Oncology ICS CCSS DRAFT
- Maternity and Neonatal ICS CCSS FINAL
- Frailty ICS CCSS FINAL
- Eye Health ICS CCSS FINAL
- End of Life Care ICS CCSS FINAL
- Women's Health ICS CCSS DRAFT
- Skin Health ICS CCSS DRAFT
- Diabetes ICS CCSS FINAL
- CYP ICS CCSS FINAL
- CVD to Stroke ICS CCSS FINAL

14.8 Appendix 8

- Emergency Care Deep Dive FINAL (clinical senate 21 submission)

14.9 Appendix 9

- Emergency Care (clinical pack)

14.10 Appendix 10

- Elective care (clinical packs)

14.11 Appendix 11

- Maternity Deep Dive FINAL (clinical senate 21 submission)

14.12 Appendix 12

- Family care (clinical pack)

14.13 Appendix 13

- Cancer Deep Dive FINAL (clinical senate 21 submission)

14.14 Appendix 14

- Cancer services (clinical pack)

14.15 Appendix 15

- Ambulatory deep dive

14.16 Appendix 16

- Appendix Demand & Capacity Modelling of Activity for Tomorrow's NUH Dec 2022
- TNUH Bed Model OBD Review

14.17 Appendix 17

- Ropewalk House Case for Change
- Ropewalk House High Level Travel Analysis
- Ropewalk House Patient Distribution

14.18 Appendix 18

- Presenting slides workshop 1. TNUH options appraisal 25.09.20
- Presenting slides workshop 2 long list to short list

14.19 Appendix 19

- Cost of options 3 and 10 v0.2
- Options appraisal process updated Feb 21

14.20 Appendix 20

- Evidence pack – non-financial assessment of the short list
- Options appraisal preferred way forward
- Assessment against non-financial desirable criteria

14.21 Appendix 21

- Financial analysis of option 7 and 13

14.22 Appendix 22

- Cancer deep dive March 22

14.23 Appendix 23

- NHP Standards for Agile Schemes

14.24 Appendix 24

- Clinical prioritisation process/outputs

14.25 Appendix 25

- Emergency care deep dive March 22
- Respiratory deep dive March 22
- Burns & plastics deep dive March 22

14.26 Appendix 26

Long List Analysis Option 13a

14.27 Appendix 27

- IIA Phase 2a V1.1 Final Report June 2022

14.28 Appendix 28

- Draft QIA Burns and Plastics
- Draft QIA Children's Development Centre
- Draft QIA Gynaecology
- Draft QIA Maternity and neonates
- Draft QIA Oncology and Haematology
- Draft QIA Respiratory

14.29 Appendix 29

- TNUH Capital Cost Forms

14.30 Appendix 30

- TNUH detailed financial modelling including sensitivity analysis

14.31 Appendix 31

- Notts ICS DAIT strategy August 2020

14.32 Appendix 32

- TNUH Digital Strategy

14.33 Appendix 33

- Estate strategy
- Addendum Report – additional inpatient beds
- Visual QMC
- 1:500 Block Plans QMC

14.34 Appendix 34

- NUH Green Plan

14.35 Appendix 35

- Draft consultation plan_05082022

14.36 Appendix 36

- Draft TNUH Travel Plan

14.37 Appendix 37

- Risk register

14.38 Appendix 38

- NHSE Outcome Stage 2 Assurance Letter

14.39 Appendix 39

- NHP letter for release of capital (TBC)

14.40 Appendix 40

- Letter of Support – LLR ICB
- Letter of Support – Derby & Derbyshire ICB
- Letter of Support – Lincolnshire ICB
- Letter of Support – Specialised Commissioning
- Letter of Support – CityCare
- Letter of Support – Sherwood Forest Hospitals NHS Trust
- Letter of Support – East Midlands Ambulance Service
- Letter of Support – Nottinghamshire Healthcare NHS FT

14.41 Appendix 41

- Options Long-list Review