Nottinghamshire County Council

# Nottinghamshire COVID Impact Assessment: Phase 4- Behavioural Risk Factors

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Nottinghamshire County Council

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Nottinghamshire County Council

# Executive Summary

## Introduction

The overall aim of the Nottinghamshire COVID Impact assessment (CIA) is to assess the impact of the COVID-19 pandemic on the health and wellbeing of the population of Nottinghamshire, regarding health inequalities to inform public health and partner strategies, plans and commissioning.

This CIA focusses on behavioural risk factors, including alcohol, smoking, physical activity, sexual behaviours, and gambling. Behavioural risk factors are crucial in the development of non-communicable diseases which contribute to 88% of the overall disease burden in the UK.[1]

Non-communicable diseases include heart disease, stroke, chronic obstructive lung disease and cancer. These conditions disproportionately affect those from more disadvantaged communities who in turn are more vulnerable to becoming severely ill from COVID-19.[1]

Nottinghamshire County Council outlines 'Reducing alcohol', 'Tobacco' and 'Healthy weight' as distinct priorities in its Joint Health and Wellbeing strategy for 2022-2026.[2]

## Methodology

The methodology for the CIA involved analysis of local, regional, and national data and a literature review of current academic research and grey literature from early 2020 to October 2022.

## Findings

### 1. Alcohol

#### Key points

Local alcohol services for Nottinghamshire have seen significantly increased demand for services post the COVID-19 pandemic, compared to pre-pandemic levels. This could indicate that there has been a backlog of referrals. Further years of data will be important in assessing if referral numbers plateau over time.

Long-term, sustained action to prevent and reduce liver disease remains a priority for public health, given the step change increase in consumption during the pandemic and persisting trends of increasing and risky alcohol consumption emerging from the pandemic.

A polarisation in drinking habits has been demonstrated from national survey data in that the heaviest drinkers have increased their drinking the most whilst the lightest drinkers have reduced their drinking the most. Groups who have disproportionately increased alcohol consumption include those in the lowest socioeconomic groups. This will propagate existing health inequalities.

Other at-risk groups include:

- Younger adults - evidence of increased risky drinking in this cohort is reinforced by increased demand in recent service data for Nottinghamshire.
- Females – evidence of increased alcohol consumption through the pandemic, relative to men, yet demand for services is still dominated by males by similar proportions through service data from 2019-2022.

- High income groups and those with diagnosed mental health disorders – highlighted as factors associated with increased alcohol consumption during the pandemic. Local service data could not explore associations locally due to relevant demographic data not being collected. Anecdotally services have reported high income groups are underrepresented in services due to fears of 'labelling'.

### Recommendations

The Nottinghamshire Alcohol Harm Reduction group will be responsible for implementing the following recommendations:

Drug and alcohol treatment and recovery services should consider evidence-based approaches by socioeconomic group, including acknowledging the stigma and barriers faced by higher socioeconomic groups presenting to drug and alcohol treatment services.

Drug and alcohol treatment and recovery services should explore where services are best placed and promoted to ensure high socioeconomic groups are willing to access appropriate treatment.

All front-line services including primary care should systematically undertake an audit C and refer appropriately into drug and alcohol treatment and recovery services. This will identify and support more people who have converted to increasing and higher risk drinking patterns during the pandemic.

At risk groups who have faced disproportionate impact from the pandemic and should receive targeted alcohol harm reduction approaches are:

- Younger adults
- Women, where there appears to be unmet need
- Those with diagnosed mental health conditions such as anxiety disorders

## 2. Smoking

### Key points

The COVID-19 pandemic has had a mixed impact on smoking and tobacco dependency.

National data and UK research has shown that lockdown and associated restrictions have led to increased smoking rates in some population groups, for example younger age groups. There have also been motivations to quit that were as a direct result of the pandemic, such as fear of contracting COVID-19 and facing more severe consequences through being a smoker.

Further exploration is needed to see if national trends in young people smoking are being seen locally. Local service data was not able to give the local picture due to the introduction of new smoking cessation services during the first national lockdown, data quality issues and challenges faced by the service provider.

Research studies on the effect of the pandemic on vaping and e-cigarette use were limited. Studies were of poor quality, utilising study designs that were not robust i.e. prone to selection bias, or using cross-sectional study designs rather than longitudinal analysis. National survey data on likelihood in using an e-cigarette over the course of the pandemic showed no significant change in trends, even when results considered young adults separately.

Smoking related inequalities are likely to have worsened during the pandemic, for example smoking prevalence among people with severe mental health conditions and in lower socioeconomic groups.

There have been some successes in the virtual delivery of smoking cessation services, with research implying smokers now want to access support in novel and more flexible formats than traditional face to face services.

### Recommendations

Public Health team members supporting the Smoking and Tobacco agenda at Nottinghamshire County Council will be considering the following recommendations:

Smoking cessation services should consider targeted approaches in supporting the needs of groups who have seen worsening health inequalities through the pandemic, such as those with severe mental illness and lower socioeconomic groups.

Embedding smoking cessation support within mental health services may better identify and support those with severe mental illness who smoke. They are a particularly vulnerable group who have seen worsening inequalities through the pandemic.

Smoking cessation services should incorporate more flexible remote elements to smoking cessation support, ensuring that services remain equitable through use of hybrid approaches for digitally excluded and hard to reach population groups.

Public health strategies should deliver key smoking cessation messages focussing on the added risks to smokers from respiratory infections such as COVID-19. This has been shown to give smokers' increased motivation to quit during the pandemic.

## 3. Physical Activity

### Key points

There has been a deepening of existing health inequalities for certain groups achieving recommended physical activity levels during lockdown. These groups include those living in deprived communities or living with poorer health status or a disability. Furthermore, research has highlighted that changes to physical activity levels have persisted beyond the first lockdown, without recovery to pre-pandemic levels.

Certain demographic factors have also been linked to decreasing physical activity trends through the pandemic which correlates to local Active Lives survey data for Nottinghamshire. These factors include being female, being a young adult or in the older 75 age group.

Older groups were highlighted as a group with increasing inactivity when linked to other risk factors such as low income, being from an ethnic minority group or socially isolated. Data from the Active Lives survey for Nottinghamshire reinforced this with over 75s seeing increasing inactivity levels compared to other ages.

Groups at risk of decreasing physical activity levels were those whose circumstances changed significantly during the pandemic, for example becoming unemployed or studying from home. This correlated with Active Lives survey data for Nottinghamshire residents which showed students, young

adults and those who were unemployed due to being long term sick as having the largest increases in inactivity levels compared to employed and retired groups.

Research has shown that determinants of change include having the motivation and physical opportunity to change physical activity levels behaviours, such as access to open and green space.

### Recommendations

Public Health team members supporting the physical inactivity agenda at Nottinghamshire County council will be considering the following recommendations:

Public health teams, commissioned providers and wider partners in health and social care need to consider how best to support vulnerable groups that have emerged from the pandemic with worsened health inequalities. These groups include those with a disability or limiting health condition and deprived communities.

Public health teams, commissioned providers and wider partners in health and social care need clear and consistent information about being active, especially following the shift in many educational and work settings to home working. Messages should be inclusive to all abilities and aiming to foster a renewed emphasis on the importance on keeping active.

Public health teams, commissioned providers and wider partners in health and social care should focus priorities on minimising the socioeconomic divide in physical activity attainment by targeting the most deprived communities. This includes ensuring local environments are safe and attractive to people wanting to get physically active.

Targeted interventions to increase physical activity should be considered in the following at risk groups:

- Young adults and students
- Females
- Unemployed groups, particularly if long term sickness or a disability is implicated
- Over 75s, particularly from deprived communities, ethnic minority groups or who are socially isolated.

## 4. Sexual behaviours

### Key points

Overall research has shown the COVID pandemic has not exacerbated inequalities in access to primary and secondary prevention in sexual health. However large inequalities have persisted, typically among those at greatest STI and HIV risk. There is significant unmet need for services by young adults, black or black British ethnicities, and for those reporting same-sex partners or new relationships in the past year. PrEP and PEP prescriptions and adherence has decreased among all subgroups with surveillance data outlining no differences in those accessing services from before the pandemic.

In terms of STI testing, proportional declines were seen in 18–24-year-olds and those aged over 45, heterosexual groups, in Black and Asian ethnicities and in men who have sex with men (MSM) with multiple marginalised identities. These include MSM who are older than 65 years, from ethnic minorities or from deprived communities. Local service data showed younger people and heterosexual groups had greater declines in diagnoses of STIs between 2019 and 2020 with slow growth patterns

in 2021 data. A lack of ethnicity data precluded examining the extent to which COVID-19 widened pre-existing health inequalities.

For reproductive services inequalities were linked to deprivation, with lower socio-economic grades reporting the most difficulty accessing contraception. Digitalisation of services further acted as a barrier to hard-to-reach population groups as acquiring services during COVID was described to need tenacity because of changing information and procedures.

Reduced outreach care further exacerbated inequalities in hard-to-reach groups within sexual health, for example marginalised communities such as lesbian, gay, bisexual, transgender (LGBT) groups, ethnic minority groups and migrant communities.

Sexuality and ethnicity were not captured for a significant proportion of people presenting to sexual health services locally, limiting the extent to which health inequalities highlighted from national sources could be assessed in local services.

### Recommendations

The Sexual Health Commissioning team at Nottinghamshire County council will be considering the following recommendations in the recommissioning process for Integrated Sexual Health services for 2024:

Sexual health services should continue to offer flexible remote elements to their services, ensuring equity by use of hybrid approaches for online and face to face delivery mechanisms for the digitally excluded and hard to reach population groups.

Planners of sexual health services should build back outreach care to increase access for hard-to-reach groups such as ethnic minorities and the LGBT+ communities. These groups are more receptive to discrete and informal outreach settings.

Targeted interventions to increase testing should be considered in the following groups who have experienced declines in testing:

- MSM with multiple marginalised identities such as those older than 65 years, from ethnic minorities or from deprived communities
- Heterosexual groups
- Younger adults

## 5. Gambling

### Key points

Research during COVID has shown that generally gambling frequency reduced during lockdown, with a shift to online gambling methods due to lockdown and social distancing measures.

Emerging evidence through COVID looking at predictors of gambling behaviour found those who frequently drank alcohol and were diagnosed with anxiety and depression were more likely to increase their frequency of gambling compared to before the lockdown. Further research is needed to add to the evidence base on risk factors for harmful gambling.

It is also likely that gender inequalities have been accelerated. Longitudinal survey analysis during COVID lockdown concluded regular gamblers were more likely to be male than female. Research was not available to show if gambling trends have persisted into COVID recovery.

## Recommendations

Public Health team members supporting the gambling agenda at Nottinghamshire County Council will be considering the following recommendations:

Public health teams, commissioned providers and wider partners in health and social care should raise awareness of the problems around harmful gambling, particularly that it is predominantly males and the lowest socioeconomic groups, who are most susceptible to harm from gambling.

Public health teams, commissioned providers and wider partners in health and social care should consider delivering clear information about the harms of gambling, particularly online gambling which became more popular over the COVID-19 lockdown restrictions.

Targeted support may be required in groups for whom emerging evidence links the pandemic restrictions to increased gambling rates, such as:

- Men
- Substance misuse service users
- Those known to mental health services.

# 1. Introduction

## 1.1 Aim

The overall aim of the Nottinghamshire COVID Impact assessment (CIA) is to assess the impact of the COVID-19 pandemic on the health and wellbeing of the population of Nottinghamshire, regarding health inequalities to inform public health and partner strategies, plans and commissioning.

This CIA focussed on behavioural risk factors, including alcohol, smoking, physical activity, sexual behaviours, and gambling.

In order to ascertain the impact of the pandemic on new or existing health inequalities, the CIA explored behavioural risk factor patterns among all ages, local geographies, ethnicity, vulnerable groups, and across all socioeconomic groups.

## 1.2 Methodology

The methodology for the CIA involved analysis of local, regional, and national data and a literature review of current academic research and grey literature from early 2020 to October 2022.

Where appropriate parallels were drawn between findings from the literature review, national data and local service data. This will help investigate whether health inequalities noted at national levels are demonstrated in locally in Nottinghamshire.

# 2. Literature Review

## 2.1 OHID COVID Knowledge and Library Service

A literature search was carried out by knowledge and evidence specialists at the UK Health Security Agency in October 2022.

The literature questions asked were:

1. What has been the impact of the COVID 19 pandemic on the prevalence of behavioural risk factors such as alcohol intake, smoking, physical activity, gambling, and sexual behaviours in the UK?
2. What has been the impact of COVID 19 on the services supporting the UK population to reduce harmful behavioural risk factors or to promote and support healthy behaviours.
3. Have services been impacted disproportionately across different age ranges, geographical areas, ethnicity groups, vulnerable groups and socioeconomic groups?

## 2.2 Search results

Three separate searches of databases Emcare, Embase, Medline, PsycInfo and Social Policy and Practice were performed, returning 804 results. Abstracts were screened for relevance, deduplicated and papers selected for further reading which were deemed to be of strong study design i.e. systematic review, cohort or longitudinal survey analyses.

# 3. Alcohol

Alcohol misuse is the biggest risk factor for death, ill-health and disability among 15–49 year-olds in the UK, and the fifth biggest risk factor across all ages.[3] Nottinghamshire County Council lists 'Reducing alcohol' as one of its nine priorities in its Joint Health and Wellbeing strategy for 2022-2026.[2]

The COVID-19 pandemic affected the way that alcohol could be purchased in England.[4] The first national lockdown on the 23rd March 2020 forced on-trade premises to close. This is where alcohol is purchased and consumed on site, such as in pubs and restaurants. On-trade sites remained closed until July 2020, after which regional approaches permitted local authorities to determine restrictions. Off-trade premises such as supermarkets are where alcohol is purchased for consumption off-site and remained open throughout the pandemic.[4]

## 3.1 Themes from literature

### 3.1.1 Polarisation of drinking habits

Evidence suggests that compared to pre-pandemic periods, the heaviest drinkers have increased their drinking the most whilst the lightest drinkers have reduced their drinking the most. This has resulted in a polarisation of drinking habits.[4]

Figure 1: Percentage of respondents aged 18+ years who consumed each of the unit groupings during a typical week in England

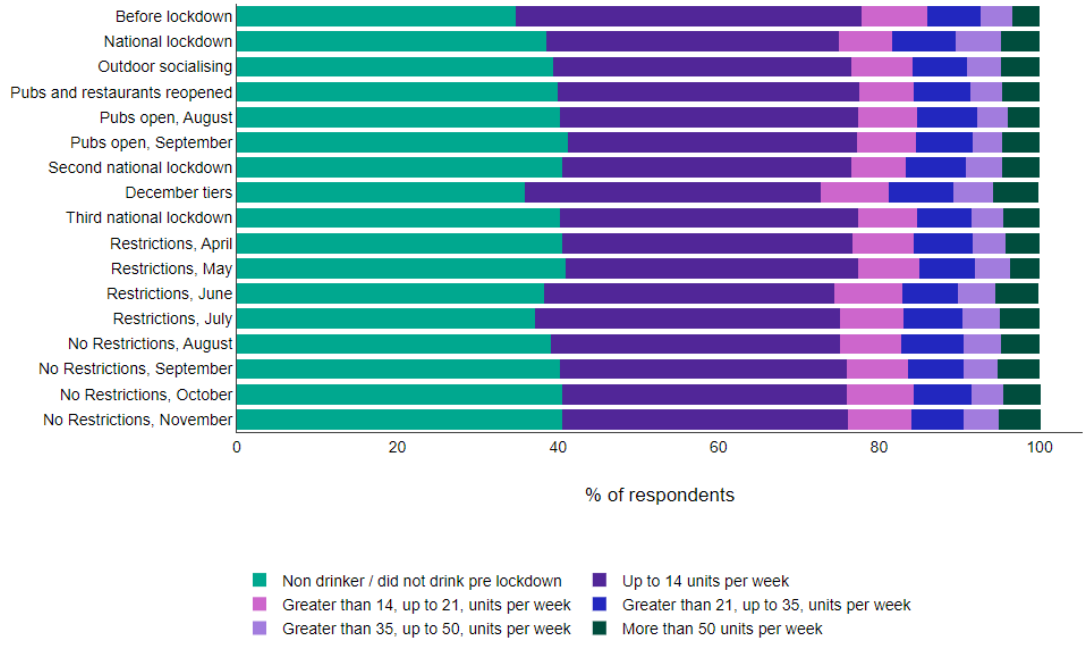
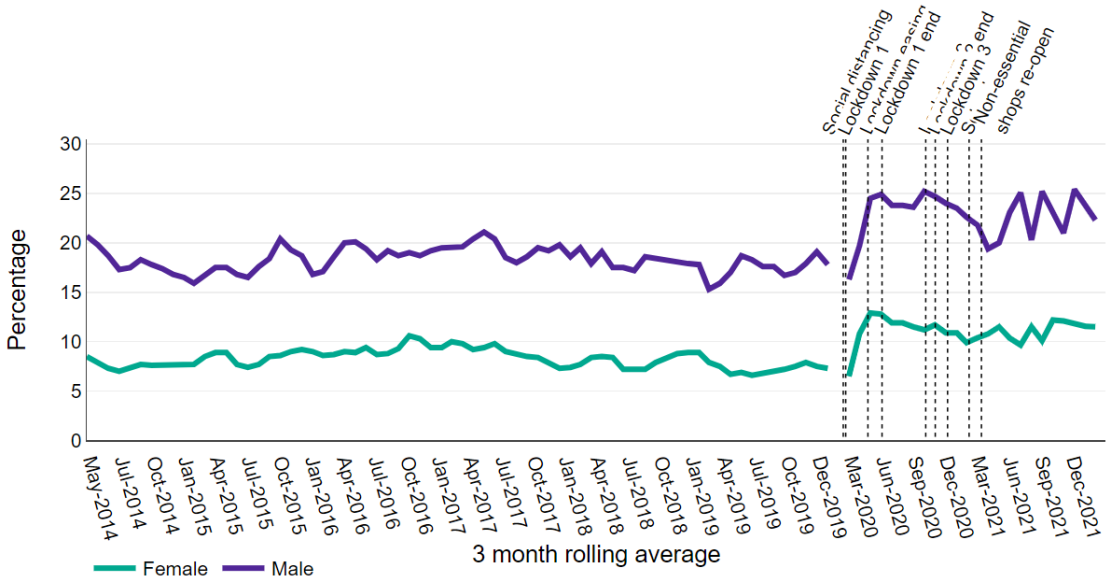



Figure 1 shows national survey data of self-reported alcohol consumption.[5] The proportion of adults drinking no alcohol increased from 34.7% before lockdown to 41.3% by September 2020, shortly before the second national lockdown. The proportion of those drinking more than 50 units per week increased from 3.4% before lockdown to 4.7% by September 2020, highlighting a polarity in drinking habits.

Figure 2: Prevalence of increasing and higher risk drinking (AUDIT) in England by sex[5]




**Note:** *Due to the pandemic the March 2020 survey did not complete face-to-face collection at short notice and is missing*

Figure 2 shows the proportion of respondents drinking at increasing and higher-risk levels as measured by the Alcohol Use Disorders Identification Test (AUDIT), by sex. A step-change in the proportion of both males and females drinking at increasing and higher-risk levels can be seen around the time social distancing measures were put in place (April-July 2020).

For males, the proportion of respondents recorded as increasing or higher-risk was 24.5% in June 2020, compared to 18.7% at the same time the previous year. For females the proportion of respondents recorded as increasing or higher-risk was 12.9% in June 2020, compared to 6.9% at the same time the previous year.

Importantly, this data shows a step-change around the time the pandemic began, where the prevalence of increasing risk and higher risk drinking increasing and then continued to be higher than previous years throughout the pandemic year.[5]

### 3.1.2 Links to deprivation

Strong evidence has shown that the COVID-19 pandemic has had disproportionate impact on alcohol drinking habits from lower socioeconomic groups.

A large controlled interrupted time series analysis involving 79,417 British households looked at alcohol purchase data.[6] It found excess purchases were greater in the most deprived households, compared with the least deprived households. Excess purchases increased substantially as the amount of alcohol normally purchased by a household increased, with the top one fifth of households that normally bought the most alcohol increasing their purchases more than 17 times than the bottom one fifth of households that bought the least alcohol.[6]

Socioeconomic differences in drinking behaviour were also demonstrated in longitudinal survey analyses of 36,980 adults. The study found high-risk drinking increased by more among women and those from less advantaged socioeconomic groups whereas attempts at reducing alcohol drinking increased only among the more advantaged socioeconomic groups.[7]

### 3.1.3 Increases in risky drinking

Many research studies highlighted trends in increasing patterns of risky drinking in UK adult populations.

The 1970 British cohort study was used to assess changes to drinking from before the pandemic to after the first national lockdown.[8] Researchers found significant changes with high-risk drinking increasing by 5% from 19% to 24%. The increase in high-risk drinking was not moderated by sex, marital status, educational attainment, the presence of a chronic illness, or the year the baseline survey was completed. Furthermore the prevalence of drinking more than or equal to 4 times a week significantly doubled from 12.5% to 26%.[8] Similar patterns of risky drinking were also seen in longitudinal analysis of the large UK Household Study.[9]

Further longitudinal analyses added that high-risk drinking prevalence increased post-lockdown whereas use of evidence-based support for alcohol reduction by high-risk drinkers decreased with no compensatory increase in use of remote support.[10]

### 3.1.4 Factors associated with increased alcohol

The review highlighted certain at-risk groups who had increased their drinking over the pandemic.

Survey analyses of 30,375 UK adults looking at sociodemographic, drinking and COVID-19 factors associated with alcohol consumption found drinking more was significantly associated with being younger, female, high income, stress about catching or becoming ill from COVID-19, stress about finances, or having a diagnosed anxiety disorder.[11]

Being female appeared as a moderating factor in increased drinking trends in other longitudinal survey analyses of 36,980 adults. The research looked at trends in drinking over the first lockdown and found high-risk drinking increased by more among women.[7]

Further longitudinal research in the UK found that young people aged 18–24 years had substantially higher odds of drinking more alcohol during lockdown in comparison with the oldest group,[12] reinforcing findings from other studies on links between increased alcohol consumption and younger adults.[11] The research available explored changes over national lockdowns and not further into COVID recovery phases.

## 3.2 Local data

In Nottinghamshire County council, Change Grow Live (CGL) are the provider of substance misuse treatment services.

To examine whether any new or existing inequalities emerged, data was interpreted by the following demographic breakdowns:

- By district
- By age
- By gender
- By ethnicity

### 3.2.1 Trends over time

Figure 3: Referrals to service by substance - trends over time

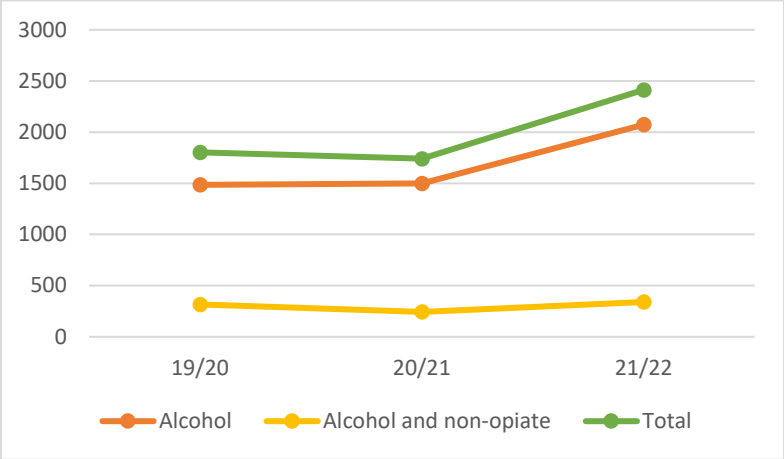



Figure 3 shows referrals into substance abuse services decrease slightly between years 2019/2020 (pre-pandemic years) and 2020/21 (during the pandemic). Post the pandemic, in years 2021/22, referrals increased to 2413 which is a significant increase on pre-pandemic levels.

### 3.2.2 By local authority

Figure 4: Referrals into service (alcohol) by Local Authority

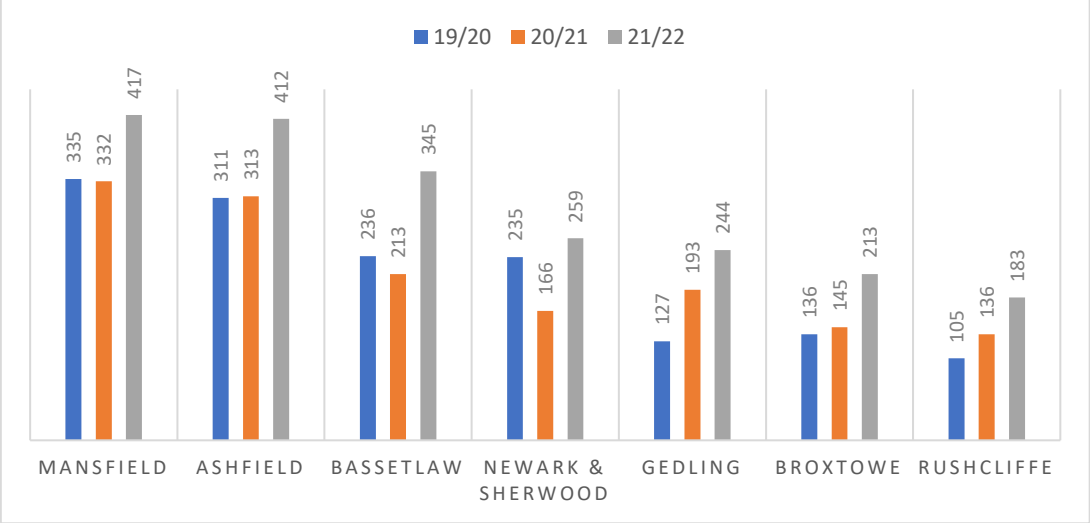



Figure 4 shows that in every local authority, referrals into alcohol services were highest in years 2021/22 compared to the previous two years of data. In 2021/2022 the local authorities with the highest number of referrals were Mansfield, Ashfield and Bassetlaw, which correlates to the districts with the highest levels of deprivation in Nottinghamshire. This could indicate a backlog of referrals. Further years of data will be important in assessing if referral numbers plateau over time.

### 3.2.3 By gender

Figure 5: Referrals into service – by gender

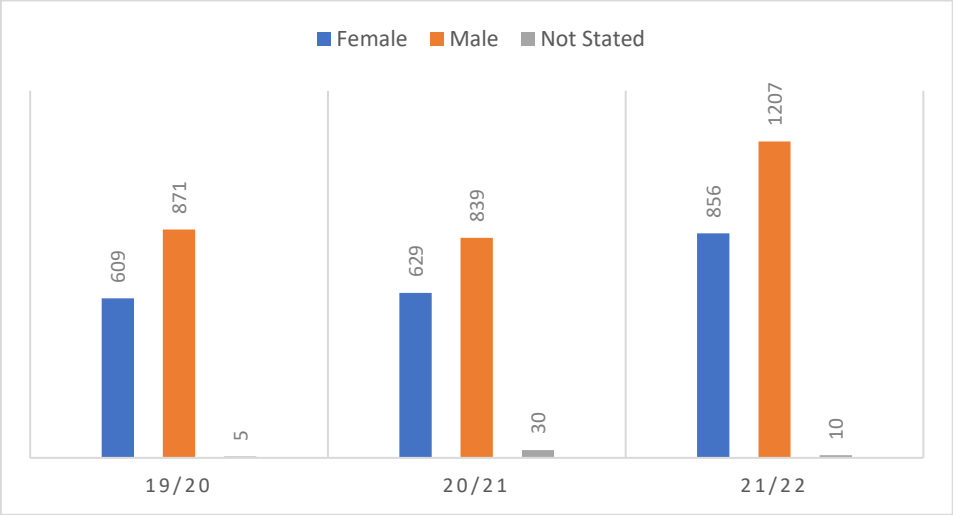



Figure 5 demonstrates that a greater number of males compared to women were referred into alcohol treatment services. The ratio between referrals for males, as compared to females has remained constant.

### 3.2.4 By ethnicity

Figure 6: Referrals into service – by ethnicity

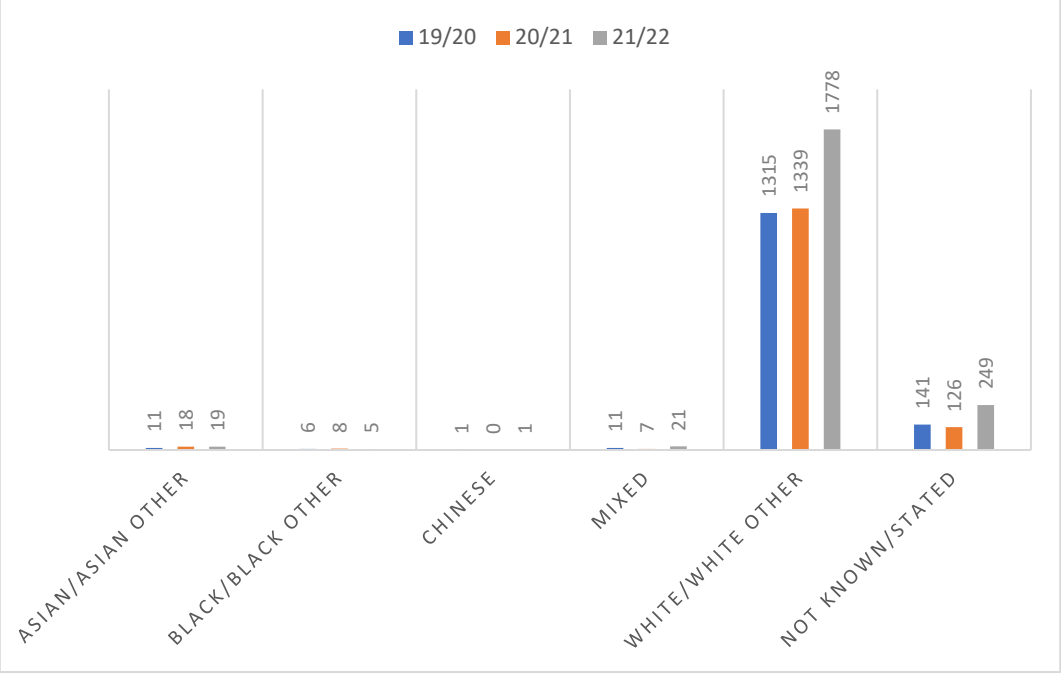



Figure 6 demonstrates that the greatest demand for services were those coming from a White background, correlating with the fact that Nottinghamshire has a predominantly White population.

### 3.2.5 By age

Figure 7: Referrals into service – by age

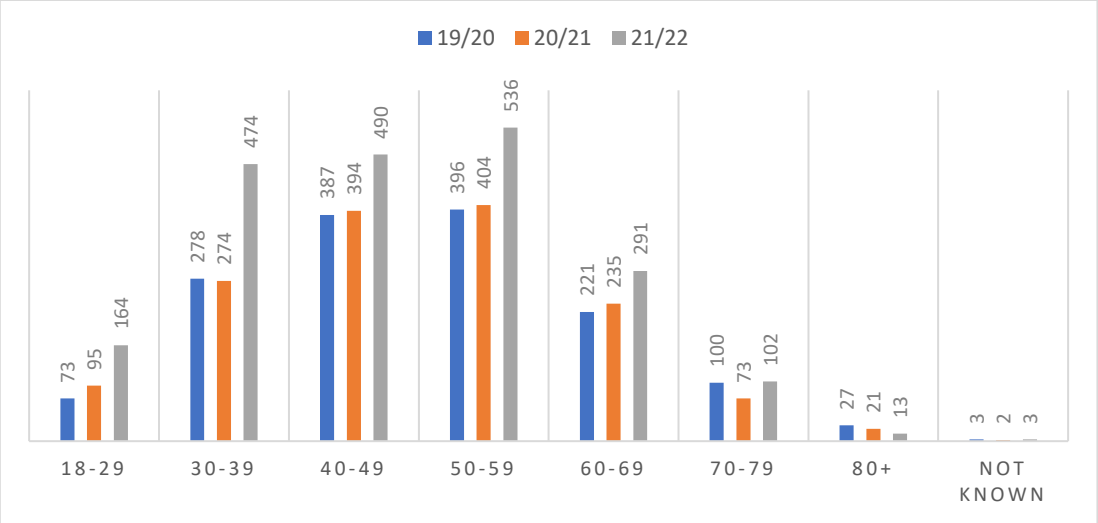



Figure 7 shows referrals into the service for age bands up to 60-69 have risen compared to pre-pandemic levels. This is consistent with themes from the evidence review; where young adults were associated with increased alcohol consumption. The literature review indicated young adults (18-24) were associated with increased alcohol intake during the pandemic. In Nottinghamshire referrals into alcohol services saw increased demand for services in older age groups also, particularly 30–39 year-olds; perhaps reflecting the older population structure within Nottinghamshire.

## 3.3 Key points

Local alcohol services for Nottinghamshire have seen significantly increased demand for services post the COVID-19 pandemic, compared to pre-pandemic levels. This could indicate that there has been a backlog of referrals. Further years of data will be important in assessing if referral numbers plateau over time.

Long-term, sustained action to prevent and reduce liver disease remains a priority for public health, given the step change increase in consumption during the pandemic and persisting trends of increasing and risky alcohol consumption emerging from the pandemic.

A polarisation in drinking habits has been demonstrated from national survey data in that the heaviest drinkers have increased their drinking the most whilst the lightest drinkers have reduced their drinking the most. Groups who have disproportionately increased alcohol consumption include those in the lowest socioeconomic groups. This will propagate existing health inequalities.

Other at-risk groups include:

- Younger adults - evidence of increased risky drinking in this cohort is reinforced by increased demand in recent service data for Nottinghamshire.
- Females – evidence of increased alcohol consumption through the pandemic, relative to men, yet demand for services is still dominated by males by similar proportions through service data from 2019-2022.

- High income groups and those with diagnosed mental health disorders – highlighted as factors associated with increased alcohol consumption during the pandemic. Local service data could not explore associations locally due to relevant demographic data not being collected. Anecdotally services have reported high income groups are underrepresented in services due to fears of 'labelling'.

## 3.4 Recommendations

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Drug and alcohol treatment and recovery services should explore where services are best placed and promoted to ensure high socioeconomic groups are willing to access appropriate treatment.

All front-line services including primary care should systematically undertake an audit C and refer appropriately into drug and alcohol treatment and recovery services. This will identify and support more people who have converted to increasing and higher risk drinking patterns during the pandemic.

At risk groups who have faced disproportionate impact from the pandemic and should receive targeted alcohol harm reduction approaches are:

- Younger adults
- Women, where there appears to be unmet need
- Those with diagnosed mental health conditions such as anxiety disorders

# 4. Smoking

For those who smoke, prompts by health professionals are one of the most important triggers for a quit attempt. The success of quit attempts can be significantly increased by helping patients identify and access appropriate quit aids and further support.[13]

The COVID pandemic has resulted in rapidly transformed smoking cessation services. Face to face provision has shifted to that of telephone and video call formats with remote provision of stop smoking aids.

## 4.1 Themes from literature

Research has shown that the pandemic and associated lockdown measures have had a mixed impact on smoking and tobacco dependency.

Certain population groups have been highlighted as particularly vulnerable to the impacts of COVID as existing inequalities in smoking rates were already prevalent, for example those living with mental health conditions.[14] People with poor mental health die on average 10–20 years earlier than the general population, and smoking is the biggest cause of this reduction in life.

### 4.1.1 Links to mental health

Research during the pandemic has highlighted smoking inequalities have worsened in a large clinical cohort of people with severe mental illness. Comparisons from before the pandemic to post showed high levels of nicotine dependence and heavier patterns of smoking in those with severe mental illness.[15] Although the study found that the pandemic may have prompted some users to change their smoking behaviour, for those who continued to smoke, aspects of the pandemic restrictions may have led to them smoking more.

Further survey-based research of a representative UK population sample found that deterioration of mental health and psychosocial well-being were linked to increased smoking.[16]

### 4.1.2 Links to deprivation

Smoking accounts for around half of the difference in healthy life expectancy between the most and least deprived communities in the country.[1] In a large population sample, current smoking was independently associated with confirmed COVID-19 infection. Researchers also noted socioeconomic disparities, with the association between smoking and COVID infection only apparent among those without post-16 qualifications.[17]

### 4.1.3 Links to age groups

Longitudinal survey analysis of 36,980 adults in England, from before the pandemic to the end of the first lockdown highlighted significant increases in smoking prevalence in the 18–34 age group.[6] These findings were reinforced by the Khan review, which reported that proportions of young adults smoking rose during the pandemic.[18]

Smoking cessation activity also increased during the pandemic. Longitudinal survey analysis showed that more younger smokers made quit attempts during lockdown with quit attempts overall being more successful compared to before the pandemic.[6] The research paper discussed that reductions in socialising meant that 'social' smokers were not in circumstances that they would normally associate with smoking. This may have led to quit rates being more likely to succeed.

### 4.1.4 Reconfigured services

The COVID-19 pandemic has also changed the way people interact with support services. More smokers want to access virtual support rather than visiting services in person.[18]

Research involving longitudinal survey analysis of 7300 adults in England showed a significant increase in the prevalence of use of traditional remote support by smokers in a quit attempt, specifically telephone support and websites. There was also a significant increase in the use of prescription medication, specifically varenicline. Those who reported using prescription medication and e-cigarettes had greater odds of reporting abstinence than people who did not.[19]

An online and multinational survey gathering views on how to provide smoking cessation advice and support during the COVID-19 pandemic strongly endorsed free, home-delivered nicotine replacement therapy. In terms of information sources, participants felt government departments and their own general practitioner were the most appropriate means of seeking more information about smokers' COVID-related risks.[20]

### 4.1.5 Motivations to quit

A review into the links between smoking and contracting severe COVID highlighted a significant association between COVID-19 and current or ever smoking.[21] Following on from this, research highlighted a significant predictor of the motivation to quit smoking during the pandemic was perceived probability of contracting COVID-19. This relationship remained when controlling for the severity of other smoking-related health risks, suggesting a COVID-19-specific effect.[22] Further research reinforced this fact and correlated findings to significant reductions in smoking patterns in a sample of daily cigarette smokers.[23]

### 4.1.6 Vaping and e-cigarette use

Research studies on the effect of the pandemic on vaping and e-cigarette use were limited. Studies were of poor quality, utilising study designs that were not robust i.e. prone to selection bias, or using cross-sectional study designs rather than longitudinal analysis.

National survey data by YouGov may offer some insight into vaping and e-cigarette use over the pandemic. The 'Wider Impacts of COVID-19 monitoring tool' analysed 'likelihood to use an e-cigarette' in multiple survey waves.[5] Figure 8 shows the percentage of respondents who were less likely, more likely or found no difference in their likelihood in using an e-cigarette over the pandemic (May 2020 to September 2020).

Figure 8: Likelihood to use an e-cigarette in England – survey results up to 26/09/20

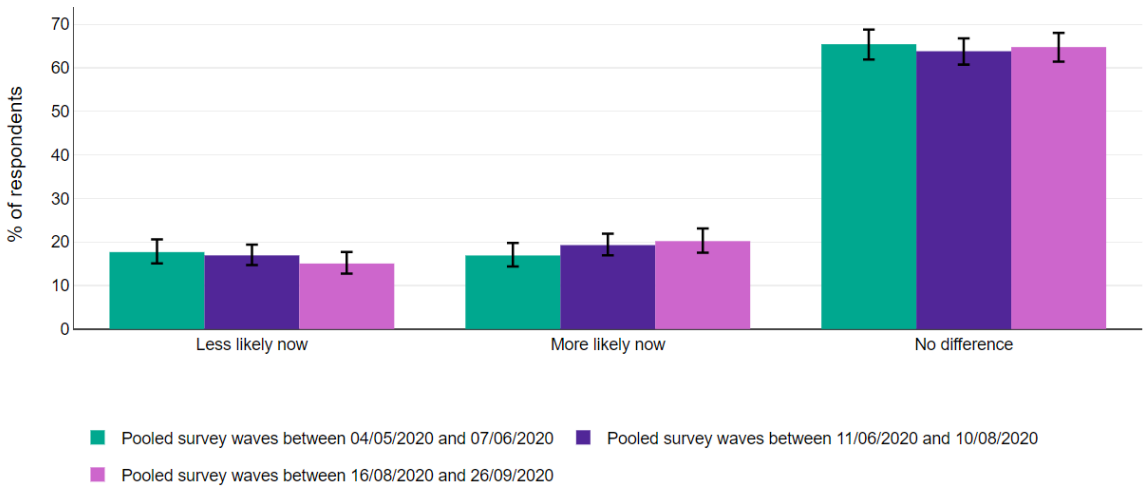


Figure 8 shows there were no significant differences in the likelihood of survey respondents taking up e-cigarette use over the pandemic. Even when results were broken down by age, there were no significant differences over time in likelihood of taking up e-cigarette use in young adults.

## 4.2 Local Data

In Nottinghamshire County Council, commissioned smoking cessation services are delivered as part of the Integrated Wellbeing Service provided by 'A Better Life' (ABL Health). The service started on 1st April 2020, at the height of the start of COVID-19 pandemic and related restrictions.

Outcome data from the previous smoking cessation services did not correspond to new service outcomes and so it was not possible to assess service data from the pandemic compared to baseline pre-pandemic trends. The Integrated Wellbeing Service further experienced significant staffing and capacity issues during the COVID-19 recovery phase which impacted on the volume of referrals and outcomes.

The outcome key performance indicator measured by the Integrated Wellbeing service is number and percentage of clients quit at 4 weeks following quit date which is validated by CO monitor or self-reported. Due to challenges posed by the pandemic in validating quit attempts, the total number of clients quitting at 4 weeks following quit rate is reported in total, with or without validation.

In order to examine whether any new or existing inequalities emerged, data was interpreted by the following demographic breakdowns:

- By age
- By socioeconomic classification
- By district

### 4.2.1 Trends over time

Figure 9: Number of clients quit at 4 weeks following quit date

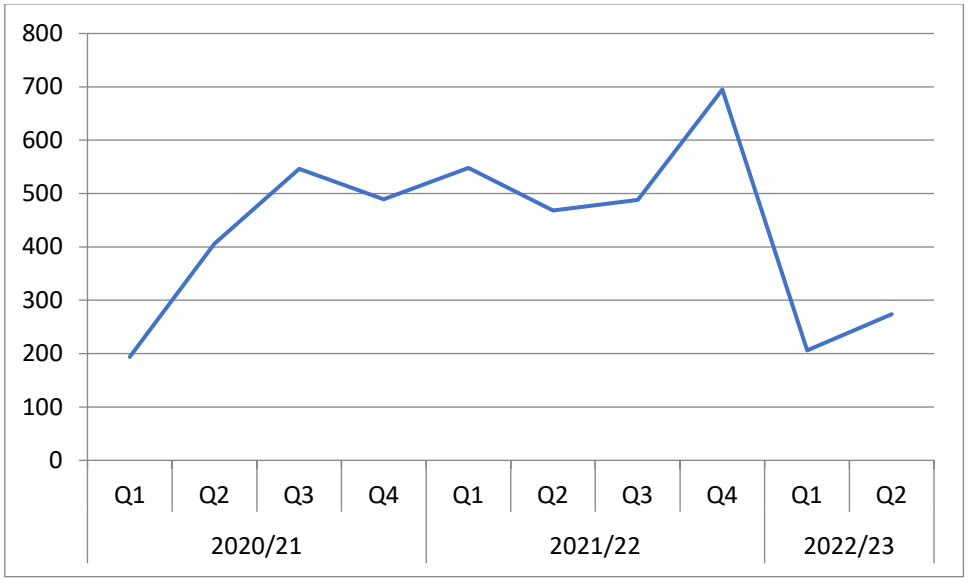



Figure 9 shows trends of increasing numbers of clients quitting at 4 weeks following quit date from the beginning of the pandemic (and from when the service was introduced) which stabilised before

reaching a peak of numbers quitting of 695 in quarter 4 of year 2021/22. At quarter 1 in year 2022/23 numbers of clients quitting sharply decline to 206.

Reasons for this include the Integrated Wellbeing service undertaking extensive work to reconciliate consolidate data and recontact clients who had disengaged with the service during quarter 4 2021/22. This resulted in better capturing and reporting of smoking cessation quits at 4-weeks. During quarter 1 and quarter 2 2022/23, the service experienced significant staffing and capacity issues which impacted on the volume of referrals and outcomes.

### 4.2.2 By district

Figure 10: Number of clients quit at 4 weeks following quit date, by districts


Figure 10 shows that similar trends are seen across all local authorities: from start-up of the service to generally stable quit numbers through the pandemic, before peaking in quarter 4 of year 2021/22 and sharply declining in quarter 1 in year 2022/23.

### 4.2.3 By socio-economic classification

Figure 11: Number of clients quit at 4 weeks following quit date, by socio-economic groups

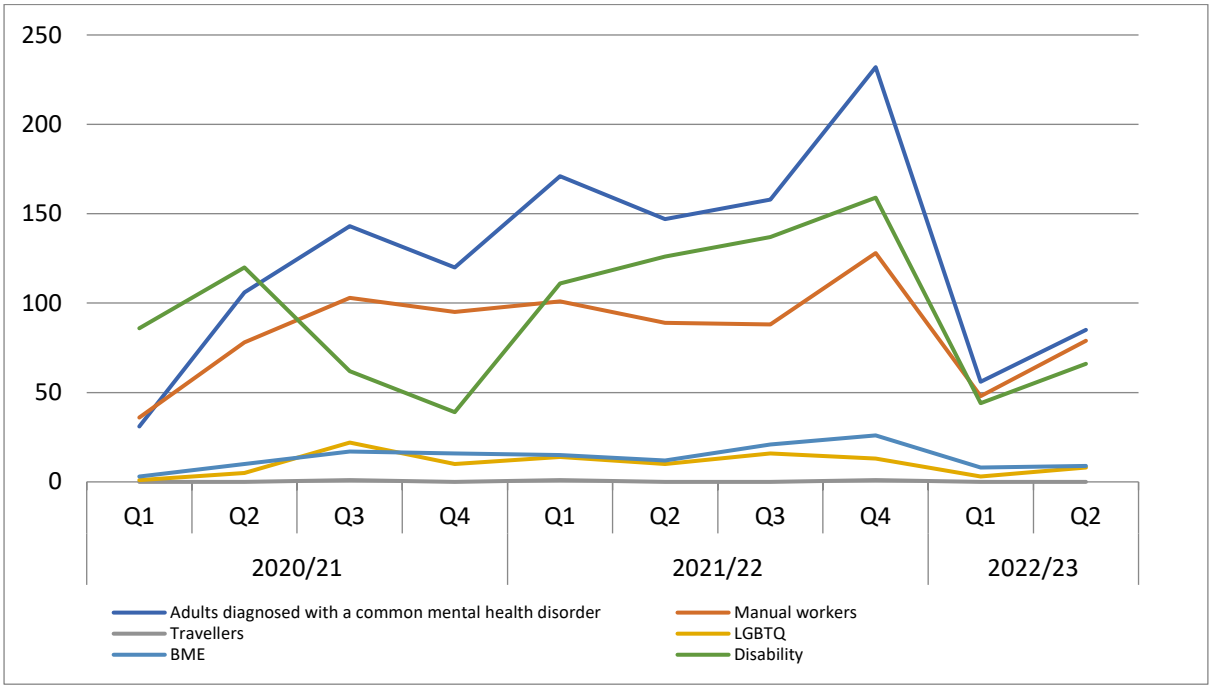



Figure 11 shows the differences in trends of quit numbers between socioeconomic groups. The greatest numbers of clients quitting are seen in adults diagnosed with a common mental health disorder, manual workers and those with disabilities. Trends show increases in numbers of clients quitting through the pandemic. For the 'Travellers' group, numbers were very low, with only 3 quits over the period analysed. Service data did not include overall numbers of travellers engaging with smoking cessation services to establish whether the low number was due to low success rates at quitting or low representation of travellers in services.

### 4.2.4 By age

Figure 12: Number of clients quit at 4 weeks following quit date, by age

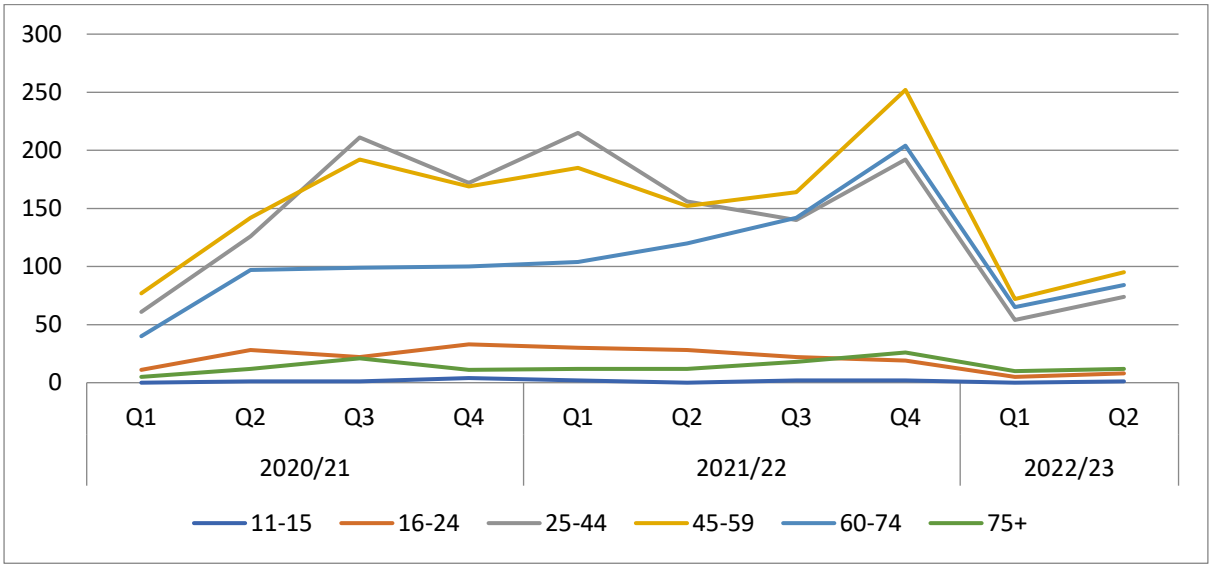


Figure 12 shows age groups 25-44 and 45-59 as having the greatest numbers of clients quitting through the pandemic. Generally, trends have remained stable by age group until the data reconciliation by the IWS in quarter 4 of 2021/22.

## 4.3 Key points

The COVID-19 pandemic has had a mixed impact on smoking and tobacco dependency.

National data and UK research has shown that lockdown and associated restrictions have led to increased smoking rates in some population groups, for example younger age groups. There have also been motivations to quit that were as a direct result of the pandemic, such as fear of contracting COVID-19 and facing more severe consequences through being a smoker.

Further exploration is needed to see if national trends in young people smoking are being seen locally. Local service data was not able to give the local picture due to the introduction of new smoking cessation services during the first national lockdown, data quality issues and challenges faced by the service provider.

Research studies on the effect of the pandemic on vaping and e-cigarette use were limited. Studies were of poor quality, utilising study designs that were not robust i.e. prone to selection bias, or using cross-sectional study designs rather than longitudinal analysis. National survey data on likelihood in using an e-cigarette over the course of the pandemic showed no significant change in trends, even when results considered young adults separately.

Smoking related inequalities are likely to have worsened during the pandemic, for example smoking prevalence among people with severe mental health conditions and in lower socioeconomic groups.

There have been some successes in the virtual delivery of smoking cessation services, with research implying smokers now want to access support in novel and more flexible formats than traditional face to face services.

## 4.4 Recommendations

Public Health team members supporting the Smoking and Tobacco agenda at Nottinghamshire County Council will be implementing the following recommendations:

Smoking cessation services should consider targeted approaches in supporting the needs of groups who have seen worsening health inequalities through the pandemic, such as those with severe mental illness and lower socioeconomic groups.

Embedding smoking cessation support within mental health services may better identify and support those with severe mental illness who smoke. They are a particularly vulnerable group who have seen worsening inequalities through the pandemic.

Smoking cessation services should incorporate more flexible remote elements to smoking cessation support, ensuring that services remain equitable through use of hybrid approaches for digitally excluded and hard to reach population groups.

Public health strategies should deliver key smoking cessation messages focussing on the added risks to smokers from respiratory infections such as COVID-19. This has been shown to give smokers' increased motivation to quit during the pandemic.

# 5. Physical Activity

The COVID-19 pandemic led to the implementation of national lockdown measures to reduce social contact and viral spread. These measures affected the ways in which people carried out physical activity as sports and exercise venues were closed and restrictions were place on outdoor activities.

## 5.1 Themes from literature

A report by Sport England in 2021 said most physically active adults in England managed to maintain their habits despite the challenges of COVID-19 pandemic.[24] However, initially in the pandemic and related restrictions, increases were seen in the number of people who were classed as inactive; this is defined as doing less than 30 minutes of activity a week or nothing at all.[24]

The population groups most negatively impacted beyond the initial lockdown period were women, young people aged 16-24, over 75s, disabled people and people with long-term health conditions, as well as those from Black, Asian, and other minority ethnic backgrounds.[24]

### 5.1.1 Persisting trends in physical inactivity post lockdown

Research on longitudinal trends in physical activity in the UK has shown that changes to physical activity levels have persisted beyond the first lockdown, without recovery to pre-pandemic levels.[25] Furthermore, downward trends in physical activity have been more common in certain population groups, for example those from lower socioeconomic backgrounds or those with health factors such a limiting health condition.[25,26]

### 5.1.2 Health and demographic factors

Factors linked with physical activity intensity before and during the UK lockdown were highlighted through research comparing physician-diagnosed health conditions against self-report change in physical activity levels. Most participants (63.9%) maintained their normal physical activity intensity during lockdown. Those who changed toward less intensive activity (25.0%) were more likely to be diagnosed with hypertension, lung disease, depression or as being obese or having a disability.[26]

Further factors were elicited from this large study for less intensive physical activity. These were being female, living alone, or without access to a garden. Younger adults were also more likely to change their physical activity intensity compared to older adults which has been consistent with other longitudinal research,[27] described below.

Policies on maintaining or improving physical activity intensity during lockdowns should consider vulnerable groups of adults including those with chronic diseases and the importance of access to green or open spaces in which to exercise.

### 5.1.3 Ethnic variations

Longitudinal survey analysis from the born in Bradford birth cohort study found there were large reductions in children being sufficiently active during the first COVID-19 lockdown (28.9%) compared to pre-pandemic (69.4%). This cohort is drawn from an ethnically diverse population with high levels of deprivation. Researchers elicited that White British (WB) children were more sufficiently active compared to Pakistani Heritage children or 'Other' ethnicity children.[28]

Other research measuring physical activity by demonstrable tools, i.e. daily step count in a UK sample, showed all population groups had reduced step counts during lockdown restrictions, with Black, Asian and minority ethnic groups showing significant reductions compared to White British ethnicity.[29]

### 5.1.4 Disability

The annual disability and activity survey by Activity Alliance found twice as many disabled people,

compared with non-disabled people, felt that the pandemic greatly reduced their ability to be active.[30] Reasons included the pandemic presenting new barriers to being active, such as shielding, having fears or concerns about social distancing or contracting coronavirus.

Disabled people were also less likely to take part in lockdown activities such as outdoor exercise or online activities amidst a lack of information for disabled people on how to be active. This highlights the need for clear and consistent information about being active, inclusive practices and a change in attitudes towards disabled people in sport and activity.[30]

### 5.1.5 Age

A report from Age UK used qualitative research with people aged over 60 from hard-to-reach communities, including older people who are digitally and socially excluded and older people from ethnic minority communities.[30,31] The report reinforced known links between ethnicity and deprivation, stating "…like their younger counterparts, older people from ethnic minorities have been hit harder in various ways, as have older people who are living on low incomes." The report highlighted some consistencies in research that groups of older people who have been particularly hard hit include carers, older people who have been bereaved, and those who have been shielding.

Markers of social isolation, loneliness and depression were also associated with lower physical activity levels following lockdown measures in a UK prospective cohort sample of older adults aged 50-92 years.[32]

### 5.1.6 Deprivation

A large cohort study showed that socioeconomic inequalities in moderate to vigorous physical activity (MVPA) has increased during the pandemic, even when restrictions were relaxed.[31] Researchers found low educated and low-income individuals had significantly higher odds of decreasing MVPA, with the reciprocal found in high educated and high-income individuals.[33]

### 5.1.7 Determinants of behaviour change

Research from the University College London COVID-19 Social Study followed 35,915 adults in England during and after the first national lockdown to explore characteristics of groups who changed their physical activity levels over the course of the pandemic.[27]

People who were older, more educated, had a higher income, shared a household with others, and those without long-term physical and mental health problems, were more likely to be highly active.[27] This is consistent with previous evidence that age, education, income, health status, and social support are associated with physical activity during lockdown.

Researchers also highlighted that individuals who became unemployed were more likely to see their physical activity levels change from being in the highly active group to lowest active groups. This suggested that this group was unique in having to adjust how they spent their time during lockdown after becoming unemployed, compared to those who were employed or economically inactive throughout this period.

Other research exploring determinants of behaviour change found that if UK adults believed they had the physical opportunity and were motivated, they were more likely to have maintained or increased their physical activity during the COVID-19 lockdown.[34] This reinforces the links already made from the evidence about lacking physical opportunities to be active such as having a limiting health condition or poor to green or open space. [26]

## 5.2 Local Data

In Nottinghamshire County council, commissioned physical activity services are delivered through 'Your Health Your Way' as part of the Integrated Wellbeing Service and provided by 'A Better Life' (ABL Health). The service started on 1st April 2020, at the height of the start of COVID pandemic and related restrictions. There were significant challenges in establishing an integrated service early in the pandemic, with resulting poor uptake in services.

The new service also did not have similar physical activity provision or key performance indicators as the previous Obesity Prevention and Weight Management Service. Therefore, longitudinal assessment of uptake in services and impacts from COVID could not be clarified due to the lack of comparative data from before the pandemic.

Another strategy to ascertain COVID impact on physical activity was to explore Active People survey data.[33] The national Active People survey tracks the number of people taking part in sport and wider physical activity in England. Press Red consultancy are contracted by Nottinghamshire County council to analyse the Active People survey data to provide local insight. Data was obtained for years 2015 to 2021.

To examine whether any new or existing inequalities emerged, data was interpreted by the following demographic breakdowns:

- By age
- By gender
- By socioeconomic classification
- By ethnicity
- By other vulnerable groups (limiting illness).

### 5.2.1 Trends over time

Figure 13: Changes in activity levels in Nottinghamshire County council

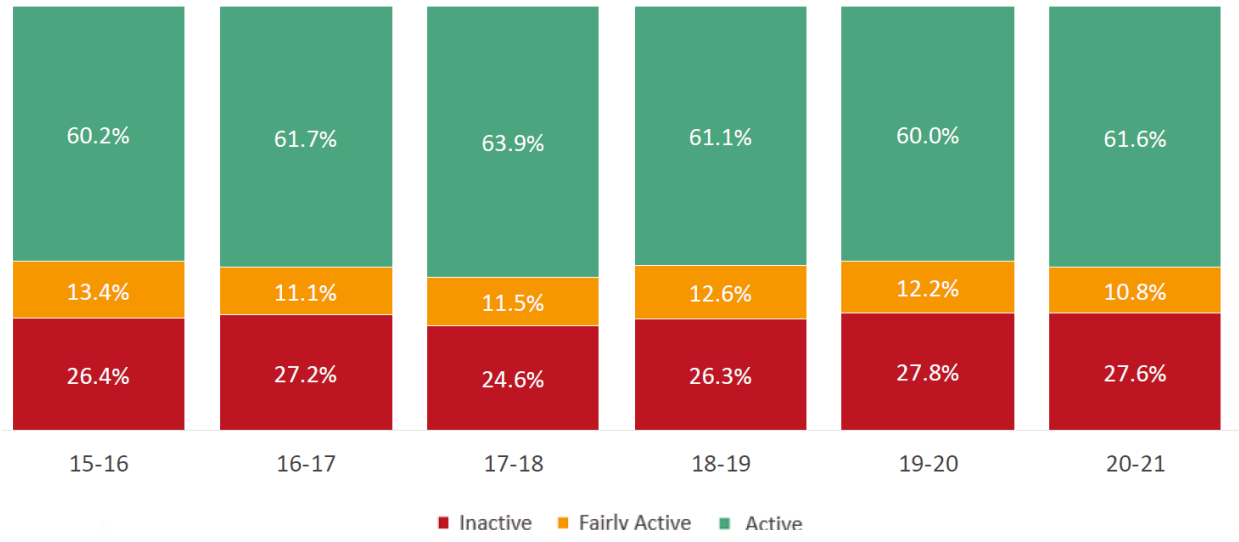


Figure 13 shows trends over time in proportions of inactive, fairly active, and active groups of Nottinghamshire residents, based on Active lives survey data between years 2015/16 to 2020/21. Residents of Nottinghamshire County mirror the picture from the national Active Lives survey data, in that most physically active adults in England managed to maintain their physical activity habits.[24]

The chart also shows that during the pandemic, many people were able to adapt and find ways to be physically active, shown by the consistent proportions of inactive people into data for years 2020-2021.

Figure 14: Inactivity by demographic group - trends

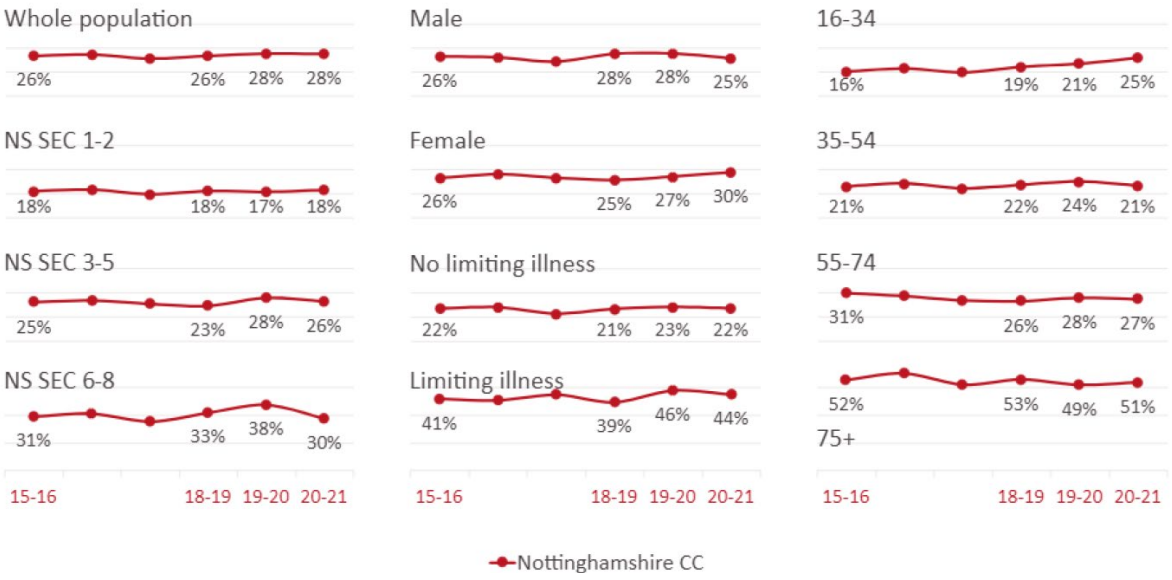



Figure 14 shows trends over time of physical inactivity by demographic group (based on Active lives survey data between years 2015/16 to 2020/21). When looking at physical activity by demographic group, not all groups were affected equally by the pandemic. Females, those with limiting illness and those aged 16-34 and over 75 saw inactivity levels increase in the latest Active Lives survey data for Nottinghamshire residents.

### 5.2.2 By age

Figure 15: Inactivity by age group

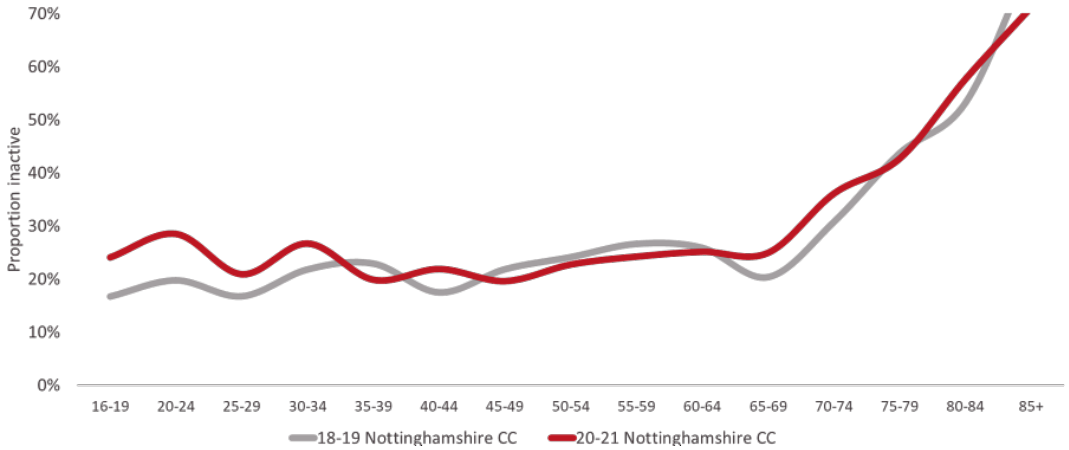


Figure 15 compares the proportion of age groups inactive from the Active Lives survey for Nottinghamshire between years 2018/19 and 2020/21. Nottinghamshire residents have become increasing inactive in younger age groups, for example 16-34 year olds, in 2020-2021 compared to pre-pandemic years. This is consistent with the literature review which highlighted younger age groups as a population with reduced activity levels.

Figure 16: Inactivity by age group – including gardening or not

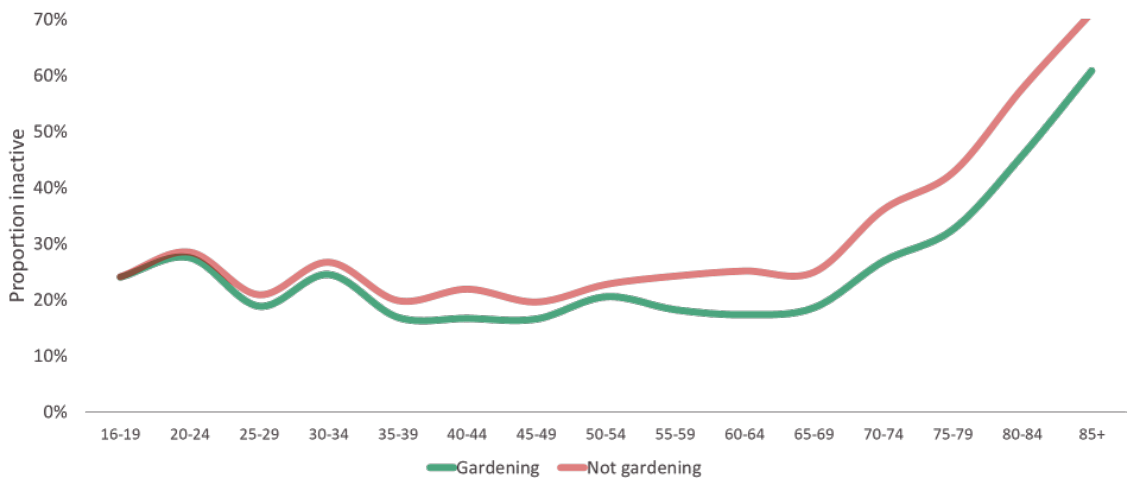



Figure 16 compares the proportion of age groups inactive from the Active Lives survey for Nottinghamshire between years 2018/19 and 2020/21, excluding data on gardening. This shows that older age groups also had increasing inactivity levels in years 2020-2021 for those aged 50 or above in Nottinghamshire County. This is particularly important considering the age profile of Nottinghamshire.

### 5.2.3 By ethnicity

Figure 17: Inactivity by ethnicity

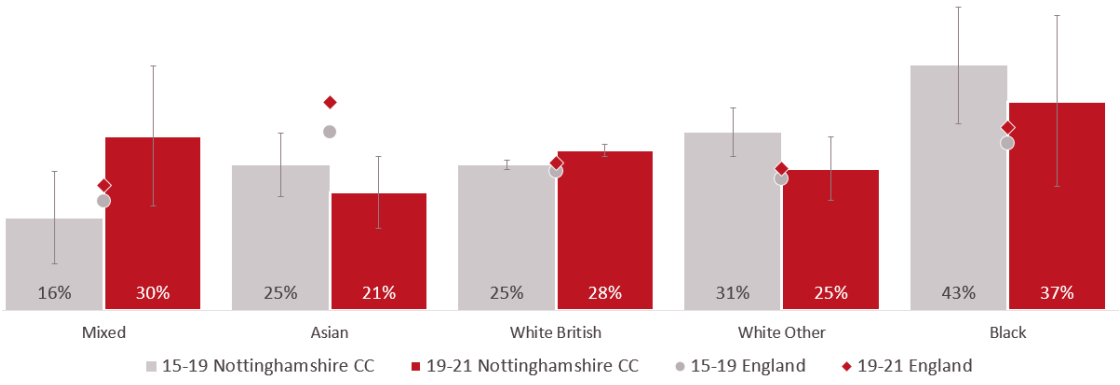


Figure 17 compares inactivity proportions by ethnicity between years 2015/19 and 2019/21. White British and Mixed ethnicities saw increased proportions of inactivity compared to previous years. This reflects the county's ethnicity profile which is predominantly white.

### 5.2.4 By employment

Figure 18: Inactivity by work status

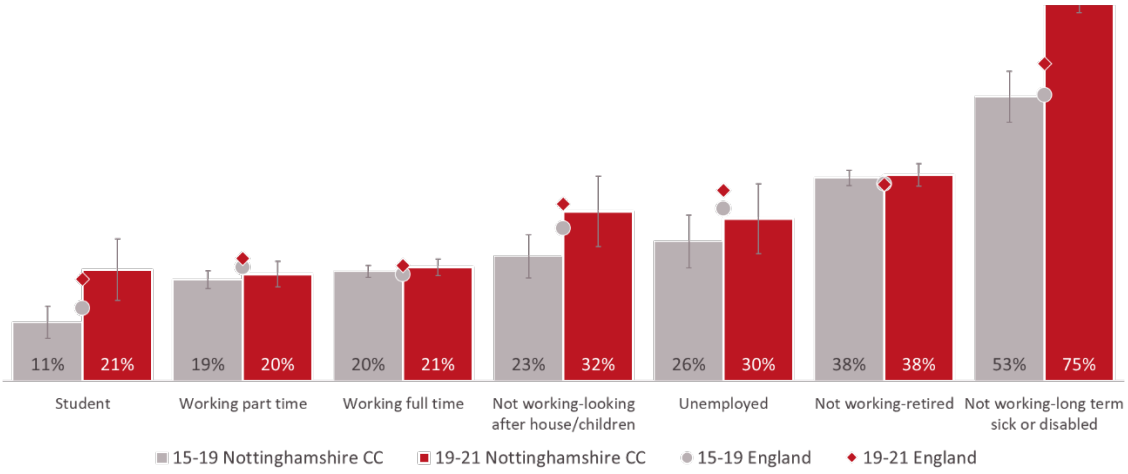



Figure 18 compares inactivity proportions by work status between years 2015/19 and 2019/21. The biggest increases are seen the student population and those not working due to being long-term sick and disabled. This reinforces messages from the literature search that those with health factors, and younger age ranges were population groups who had reduced activity levels through the pandemic.

Figure 19: Inactivity trends by work status

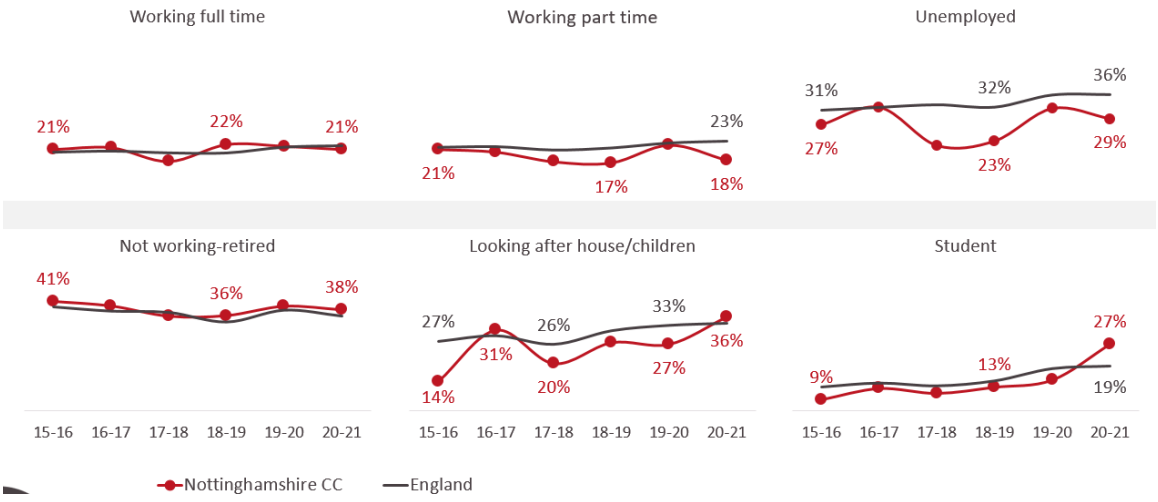



Figure 19 compares trends in work status for Nottinghamshire County residents between years 2015/16 and 2020/21. Groups such as students had increasing inactivity proportions compared against England averages.

### 5.2.5 By deprivation

Figure 20: Inactivity by socioeconomic groupings

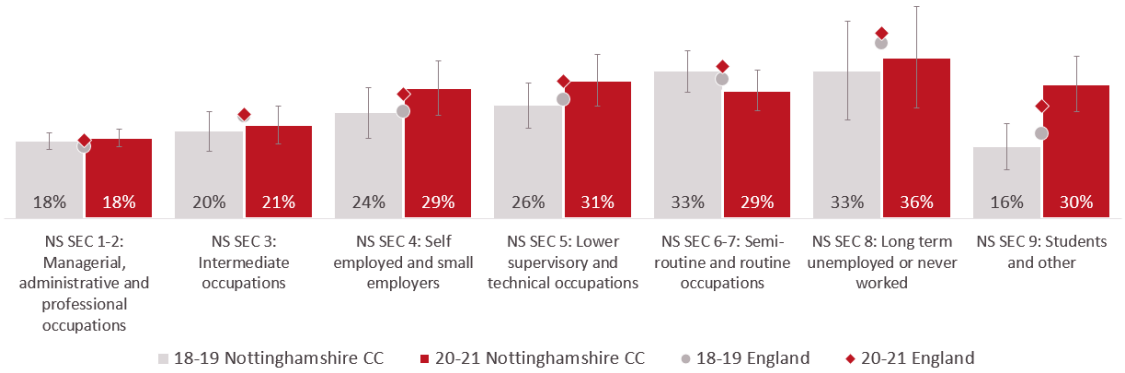



Figure 20 compares inactivity proportions by socioeconomic groupings between years 2018/19 and 2020/21. Significant increases were seen in the student population.

As expected, incremental increases in physical inactivity levels were seen with generally decreasing socioeconomic groupings. This reinforces messages from the national literature search that increasing deprivation was a factor implicated in perpetuating health inequalities for physical activity level attainment during the pandemic.

## 5.3 Key points

There has been a deepening of existing health inequalities for certain groups achieving recommended physical activity levels during lockdown. These groups include those living in deprived communities or living with poorer health status or a disability. Furthermore, research has highlighted that changes to physical activity levels have persisted beyond the first lockdown, without recovery to pre-pandemic levels.

Certain demographic factors have also been linked to decreasing physical activity trends through the pandemic which correlates to local Active Lives survey data for Nottinghamshire. These factors include being female, being a young adult or in the older 75 age group.

Older groups were highlighted as a group with increasing inactivity when linked to other risk factors such as low income, being from an ethnic minority group or socially isolated. Data from the Active Lives survey for Nottinghamshire reinforced this with over 75s seeing increasing inactivity levels compared to other ages.

Groups at risk of decreasing physical activity levels were those whose circumstances changed significantly during the pandemic, for example becoming unemployed or studying from home. This correlated with Active Lives survey data for Nottinghamshire residents which showed students, young

adults and those who were unemployed due to being long term sick as having the largest increases in inactivity levels compared to employed and retired groups.

Research has shown that determinants of change include having the motivation and physical opportunity to change physical activity levels behaviours, such as access to open and green space.

## 5.4 Recommendations

Public Health team members supporting the physical inactivity agenda at Nottinghamshire County council will be considering the following recommendations:

Public health teams, commissioned providers and wider partners in health and social care need to consider how best to support vulnerable groups that have emerged from the pandemic with worsened health inequalities. These groups include those with a disability or limiting health condition and deprived communities.

Public health teams, commissioned providers and wider partners in health and social care need clear and consistent information about being active, especially following the shift in many educational and work settings to home working. Messages should be inclusive to all abilities and aiming to foster a renewed emphasis on the importance on keeping active.

Public health teams, commissioned providers and wider partners in health and social care should focus priorities on minimising the socioeconomic divide in physical activity attainment by targeting the most deprived communities. This includes ensuring local environments are safe and attractive to people wanting to get physically active.

Targeted interventions to increase physical activity should be considered in the following at risk groups:

- Young adults and students
- Females
- Unemployed groups, particularly if long term sickness or a disability is implicated
- Over 75s, particularly from deprived communities, ethnic minority groups or who are socially isolated.

# 6. Sexual Behaviours

In response to the COVID-19 pandemic and related restrictions, sexual health services in England substantially reduced capacity to deliver face-to-face consultations and reconfigured services to operate through telephone or internet consultations.

Many aspects of sexual lifestyles were disrupted, triggering an urgent need for population-level data on sexual behaviour, relationships, and service use.[36]

Many research studies below utilised Britain's National Surveys of Sexual Attitudes and Lifestyles (NATSAL).[36] NATSAL surveys have run every 10 years since 1990 and provide a key data source for sexual and reproductive health policy.

## 6.1 Themes from literature

### 6.1.1 Sex behaviour patterns

Several articles discussed decreased sexual activity during the pandemic.[37 38] Williams et al [37] discussed how "restrictions altered the number of new sexual partners per week with over 80% not having any new sexual partners for the 12 weeks of the first lockdown. However, as the weeks progressed following the first lockdown there was an increase in the number of new sexual partners." Men who have sex with men (MSM) also reported fewer sexual partners during the lockdown months compared with 2017.[39]

Further research looking at sexual behaviour once restrictions began to ease showed a tendency for greater sexual risk behaviour. Pre and post lockdown analysis of large community surveys of MSM in the UK showed greater sexual risk behaviour after restrictions eased in in late 2021 compared to 2017. Unmet testing need was defined as reporting any new and/or multiple condomless anal sex partners without a recent STI/HIV test. Despite self-reporting of recent testing being higher in late 2021, researchers found that there remained considerable unmet STI/HIV testing need among UK MSM groups.[40]

### 6.1.2 Reduced services for HIV prevention

Several articles focused on behavioural change with HIV services, namely a reduction in PrEP use and PrEP adherence.[41] This was reinforced by other research which looked at prescriptions for post exposure prophylaxis (PEP) from six English centres, noting a decrease in prescriptions of 34.5% in 2020 compared with 2019.[42] There was no difference found in characteristics of PEP recipients before and during the first lockdown i.e. age, ethnicity or country of birth.

At a populational level, the NATSAL-COVID study into sexual health services highlighted differential access to key primary and secondary STI/HIV prevention interventions. For example, unmet need for condoms was more likely among participants: aged 18-24 years, being of black or black British ethnicity, and reporting recent same-sex partners or one or more new relationships in the past year.[43]

### 6.1.3 Reduced testing

Surveillance data of HIV and STI testing by the UK Health Security Agency (UKHSA) highlights the extent to which testing levels were impacted by the pandemic.[44] Testing in sexual health services declined by 77%, from 95,455 to 22,332, for HIV and by 71%, from 391,006 to 112,441, for STIs during January to April 2020, compared to 2019 data. The proportion of tests accessed through internet services increased substantially beginning in April 2020. Internet services accounted for around 63% of HIV

and 51% of STI tests during April–September 2020, compared with 25% for HIV and 22% for STIs in 2019.

### 6.1.4 Proportional declines in testing

The data further showed the largest proportional declines in testing occurred among 15-19 year olds and those older than 45. These age groups also showed the slowest relative recovery towards pre-pandemic levels of testing during June and September 2020.[44]

Over the same period, there were larger proportional declines in testing among heterosexual men and heterosexual or bisexual women compared to other sexual orientation groups. Recovery was slowest among heterosexual men.[44]

In terms of ethnicity, the largest declines in testing were among Asian and Black ethnicities; with those of Black ethnicity showing the slowest recovery.[44]

Ethnic groups were again highlighted in research that looked at the NATSAL-COVID survey and surveillance data in combination. Sexual health inequalities persisted during the first year of the pandemic with evidence of more unmet need among minority ethnicities including Black and Asian ethnicities.[45] Further robust surveillance data found STI testing inequalities in MSM with multiple marginalised identities, such as Black or Asian MSM, those above 65 years or living in the more deprived.[46] This is also the case in groups who are at greatest STI/HIV risk; those reporting condomless sex with new sexual partners and men reporting same-sex partners.[45]

Overall research highlighted that the differential access to testing seen through the pandemic has followed similar distributions to testing patterns in pre-pandemic times. This means that whilst the pandemic might not have exacerbated inequalities in access to primary and secondary prevention, large inequalities have persisted, typically among those at greatest STI/HIV risk.

### 6.1.5 Inequalities in reproductive health services

A large prospective cohort showed that access to contraception in the UK has become harder during the COVID-19 pandemic and the proportion of unplanned pregnancies almost doubled.[47]

For certain population groups, restrictions in access to contraception through clinics were counteracted by online provision of oral and emergency contraception.[48] However, inequalities in reproductive health outcomes were highlighted through NATSAL-COVID survey data;[49] this being that young and vulnerable participants were more likely to report difficulties accessing reproductive services resulting in less planned pregnancies during the pandemic. Vulnerable groups included those reporting no educational qualifications or anxiety or depression symptoms.

### 6.1.6 Digitalisation of services

Within sexual health, digitalisation has translated to postal self-sampling for STIs and blood borne viruses. Research generally suggests that these services appeal more to women, people with higher educational qualifications, and those from more affluent areas, whereas people with mild learning disabilities find considerable barriers to this type of care.[50]

Digital sexual health has considerable potential to meet the needs of people who are able to engage with online care. However, STIs, like digital literacy are socially patterned.[50] STIs disproportionately affect those who already experience health inequalities and people experiencing health inequalities are less digitally and health literate.[50]

### 6.1.7 Challenges in accessing sexual health services

The NATSAL-COVID survey reported that though many people accessed sexual health services during the initial lockdown, young people and those reporting sexual risk behaviours reported difficulties in accessing services.[51] The analysis however excluded those aged 45-59 years due to low rates of service use. This in itself highlights that older people as a hard-to-reach group when it comes to reconfigured services during the pandemic.

A further analysis on NATSAL-COVID data, this time including all ages (18-59) offered insight on those who reported being unable to access sexual health services.[52] In addition to appointments not being available, another factor was discomfort with using online or telephone services. 26% of the participants who did not receive STI services reported being uncomfortable with telephone services, compared to 7% for contraception services. Exploring unmet need highlighted how services may need to adapt to improve access by offering face-to- face and remote provision through a hybrid model.

Further challenges included navigating changing information and procedures; perceptions of gatekeepers as obstructing access; and inflexible appointment systems. This seemed to act as a barrier to hard-to-reach population groups.[53]

### 6.1.8 Loss of outreach services

Sexual health services needed significant reconfiguring due to the COVID pandemic, with a prioritisation of central hub sites over 'spoke' models of care.[54]

One of the impacts seen from reduced outreach care was failing to reach hard-to-reach groups within sexual health. A report on addressing inequalities in good sexual health reported the lack of informal settings to seek advice coupled with reluctance from vulnerable groups to seek out formal services was linked to poorer sexual and reproductive health outcomes.[55]

### 6.1.9 Lacking evidence

A systematic review found there was a paucity of evidence into outcomes for sexual and gender minority groups post the COVID-19 pandemic.[56] This was driven by a lack of routinely collected sexual orientation and gender identity data, which researchers suggested possibly resulted from institutional homophobia/transphobia. Lack of research gives significant concern, given pre-existing health inequities.

## 6.2 Service Data

Genitourinary Medicine Clinic Activity Dataset (GUMCAD) is the mandatory surveillance system for STIs and collects data on STI tests, diagnoses and services from all commissioned sexual health services in England. The following data was obtained from the UKSHA's HIV/STI data exchange and outlines for Nottinghamshire residents the number of diagnoses for:

- Chlamydia
- Gonorrhoea
- Herpes (first episode - genital)
- Syphilis
- Warts (first episode - genital)

Data was obtained for years 2018 to 2021 allowing interpretation of data from pre-pandemic levels to the beginning of recovery of services post the pandemic. In order to examine whether any new or existing inequalities emerged, data was interpreted by the following demographic breakdowns:

- By gender

- By age
- By sexual risk
- By ethnicity

### 6.2.1 Trends over time

Figure 21: Number of diagnoses of sexually transmitted infections over time

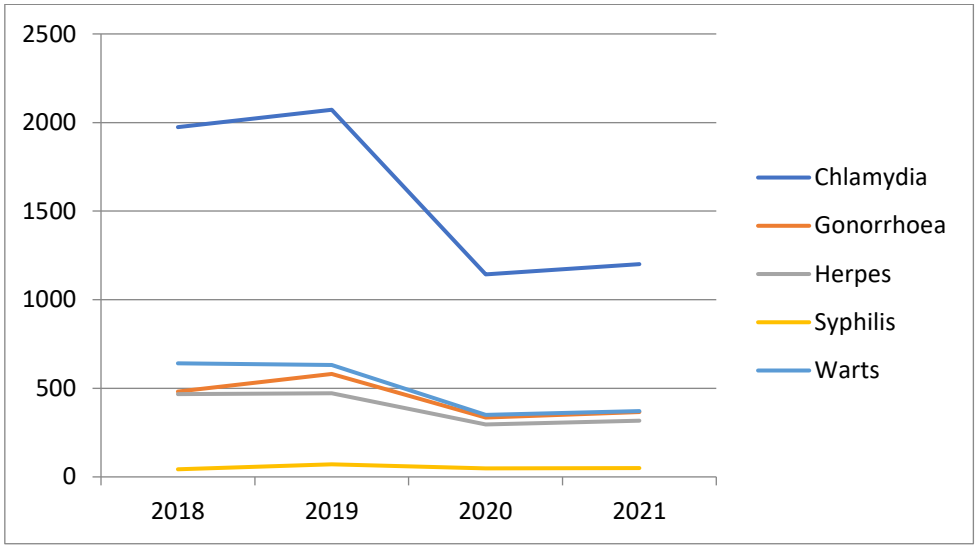



Figure 21 shows the number of sexually transmitted infections decreasing across all infections between 2019 and 2020. Over this period, larger decreases in diagnoses were observed for STIs that are usually diagnosed clinically at a face-to-face consultation, such as genital warts, when compared to those that could be diagnosed using remote self-sampling kits such as gonorrhoea.

Between 2020 and 2021, all sexually transmitted infections begin to change trajectory and show modest increases, in line with restored testing services post the pandemic.

STI testing services within Nottinghamshire County currently operate at a limited capacity with a 'daily cap' on tests. This may be hindering the recovery of STI diagnoses to pre-pandemic levels.

### 6.2.2 By gender

Figure 22: Number of diagnoses of sexually transmitted infections by gender

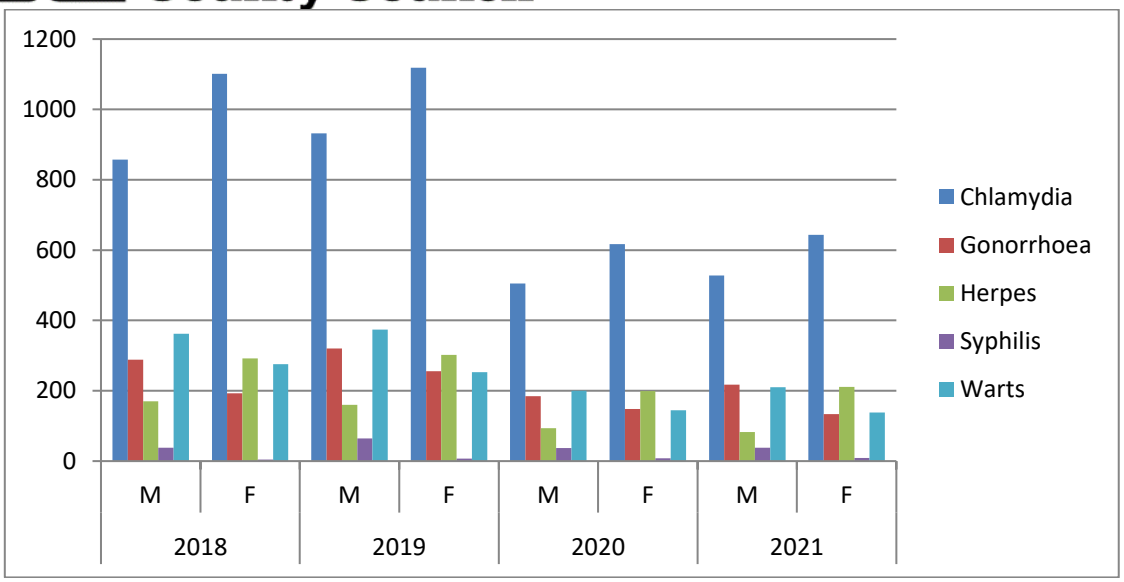



Figure 22 shows the largest reductions in sexually transmitted infections across both male and females were between years 2019 and 2020, coinciding with the start of the pandemic. The number of sexually transmitted infections diagnosed by gender displayed consistent ratios between male and females through all years charted.

Between 2020 and 2021 almost all sexually transmitted infections for males and females have shown recovery in diagnoses towards pre-pandemic levels apart from gonorrhoea and warts diagnosed in females and herpes diagnoses in males; for these STIs there have been further declines in diagnoses between 2020 and 2021.

### 6.2.3 By age

Figure 23: Number of diagnoses of sexually transmitted infections by age

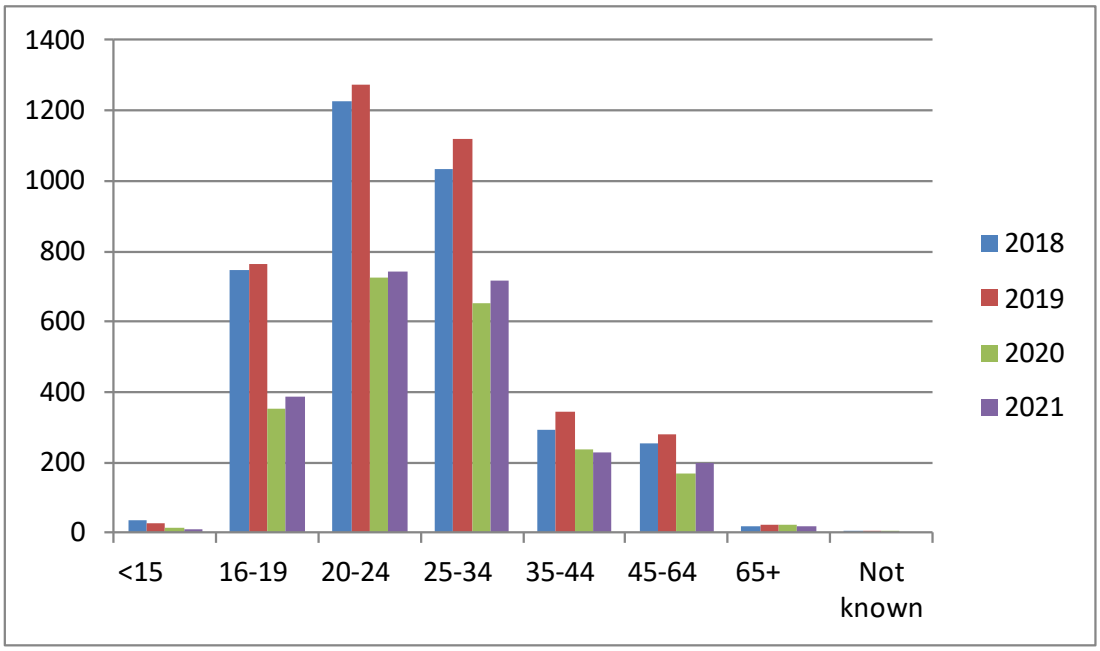


Figure 23 shows the number of sexually transmitted infections by age. Substantial declines in diagnoses were seen between 2019 and 2020 in almost all age bands, except in over 65-year-olds; for whom numbers of diagnosed STIs have remained consistently low through all years charted.

Those aged between 16-19 saw the greatest reductions in diagnoses between 2019 and 2020; numbers of STIs more than halving from 763 to 351. This is consistent with findings from the literature review that young people appeared to have the largest proportional declines in testing for STIs nationally. This has implications for the need and demand for sexual health services as young people are more likely to be diagnosed with an STI and represent most of the chlamydia and gonorrhoea diagnoses.[58]

In terms of recovery, numbers of STIs have shown recovery towards pre-pandemic levels apart from the 35-44 age group. National data also highlighted that over 45s were another group who had largest proportional declines in testing and were slowest to recover.

### 6.2.4 By sexual risk

Figure 24: Number of diagnoses of sexually transmitted infections by gender and sexual risk

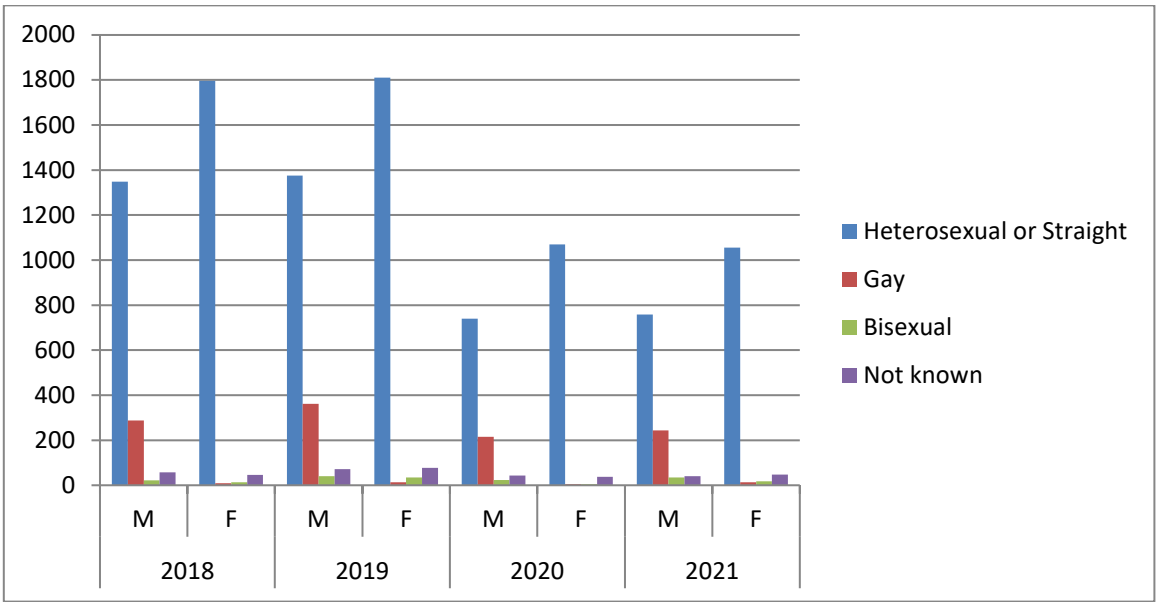



Figure 24 shows the number of sexually transmitted infections by gender and sexual risk. Sexuality is a key factor in sexual and reproductive health. One example of this is that gay, bisexual and other men who have sex with men (MSM) are more likely to be diagnosed with bacterial STIs than other men.[58]

The national data on testing found that heterosexual groups had largest declines in STI and HIV testing, with heterosexual men slowest to recover, this is reinforced by local Nottinghamshire data (figure 23). Heterosexual men saw a 46% reduction in diagnoses between 2019 to 2020 compared to gay men who experienced a 40% reduction in diagnoses.

Local sexual health services have been maintaining access and prioritising population groups in need for example MSM, which partly explains greater reduction in diagnoses in heterosexual groups. The

other reason for the slow recovery even in MSM groups is the fact testing capabilities have been capped in the county.

### 6.2.5 By ethnicity

Figure 25: Number of sexually transmitted infections by ethnicity and sexual risk

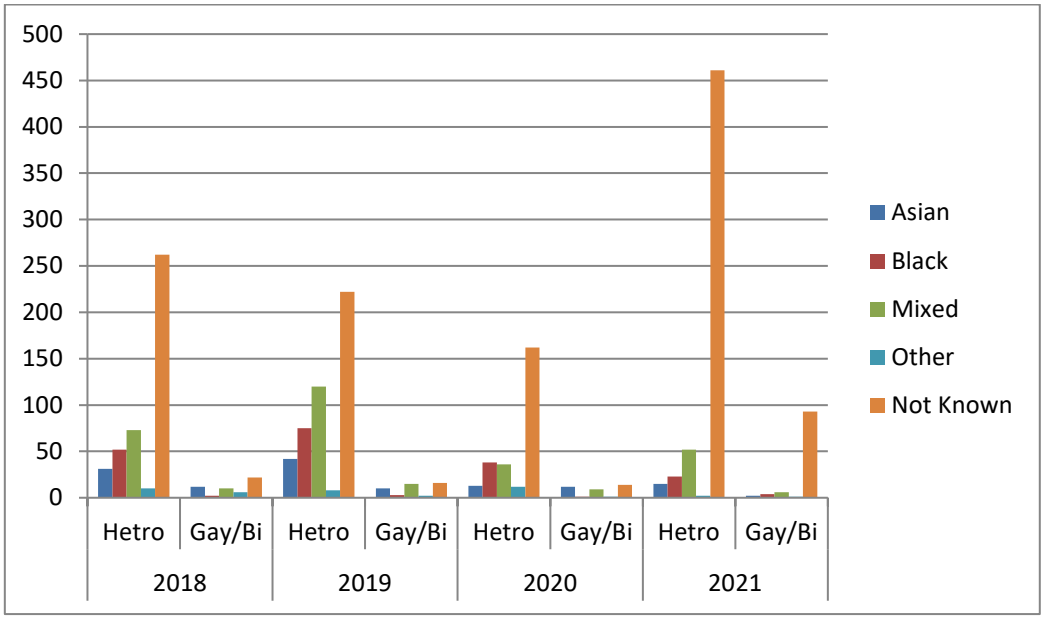



Table 1: Number of sexually transmitted infections by ethnicity and sexual risk

| | | Asian | Black | Mixed | White | Other | Not Known |
|---|---|---|---|---|---|---|---|
| **2018** | Hetro | 31 | 52 | 73 | 2739 | 10 | 262 |
| | Gay/Bi | 12 | 2 | 10 | 286 | 6 | 22 |
| **2019** | Hetro | 42 | 75 | 120 | 2757 | 8 | 222 |
| | Gay/Bi | 10 | 3 | 15 | 410 | 2 | 16 |
| **2020** | Hetro | 13 | 38 | 36 | 1575 | 12 | 162 |
| | Gay/Bi | 12 | 1 | 9 | 217 | 1 | 14 |
| **2021** | Hetro | 15 | 23 | 52 | 1342 | 2 | 461 |
| | Gay/Bi | 2 | 4 | 6 | 216 | 1 | 93 |

Figure 25 shows the number of sexually transmitted infections by ethnicity and sexual risk (excluding white ethnicities). Table 1 shows number of sexually transmitted infections for all ethnicities and sexual risk.

Numbers of 'not known' ethnicities are substantially higher than other ethnic groupings limiting the inferences we can make from the data. This is a considerable limitation of the service data as there is a missed opportunity to see how certain ethnicities who are at increased risk of STIs, fare locally.

## 6.3 Integrated sexual health service provider data

Another source was used to gain service level data for Nottinghamshire residents who attended Genito-Urinary medicine (GUM) services provided by the Integrated Sexual Health Services (ISHS) for Nottinghamshire residents. The data includes three service providers across the area: Nottingham University Hospitals (NUH) for Broxtowe, Gedling and Rushcliffe; Sherwood Forest Hospitals (SFH) for Mansfield, Ashfield, and Newark & Sherwood; and Doncaster and Bassetlaw Hospitals (DBH) for Bassetlaw.

The data provided included the number of consultations provided by GUM services, broken down by lower tier local authority area and index of multiple deprivation quintiles.

Figure 26: Numbers of consultations at by lower tier local authority area

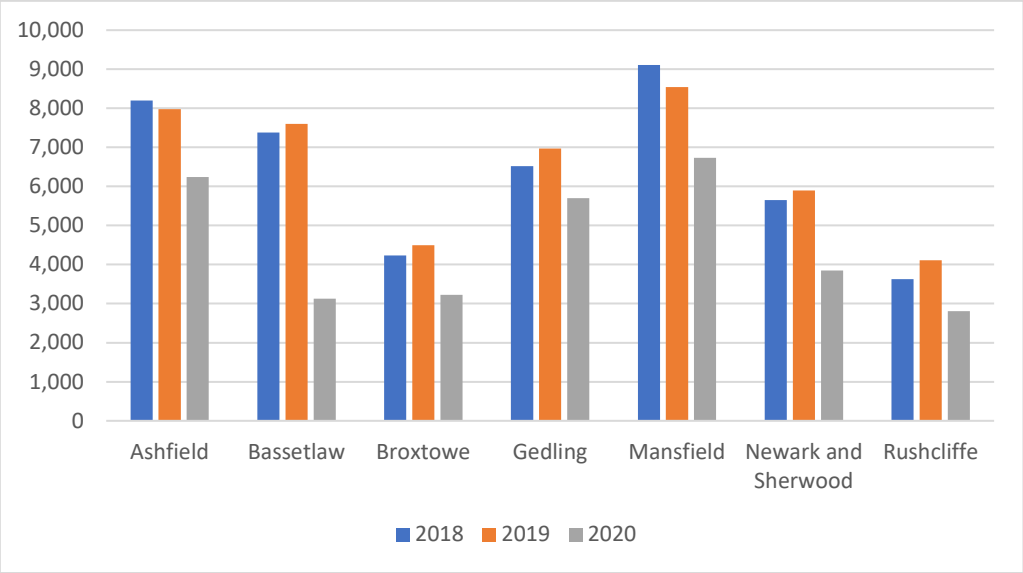



Figure 26 shows in every local authority, number of consultations decreased in the year 2020 compared to the previous two years of data. Local authorities which generally see the highest number of consultations are Mansfield, Ashfield and Bassetlaw, correlating to the districts with the highest levels of deprivation.

For the year 2020 Bassetlaw appeared to have a significant reduction in consultations compared to other local authority tiers. Numbers of consultations decreased by 59% from 7,604 to 3,129 consultations.

Figure 27: Numbers of consultations by index of multiple deprivation 2019

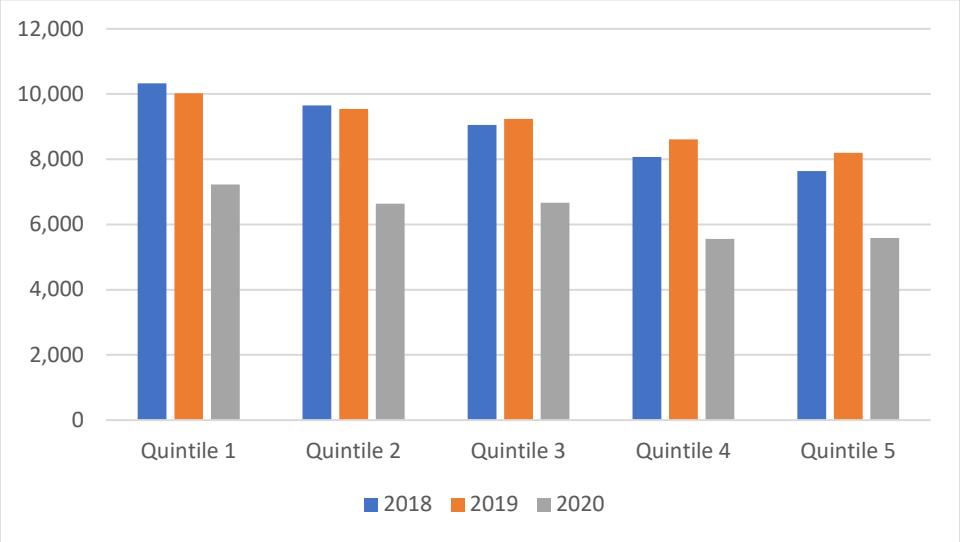



Figure 27 shows that numbers of consultations correlate with index of Multiple Deprivation (IMD). As numbers of consultations increase, levels of deprivation increase (Quintile 1 being the most deprived). This in in keeping with expected patterns that sexual health need is greatest in deprived communities.

## 6.4 Key points

Overall research has shown the COVID pandemic has not exacerbated inequalities in access to primary and secondary prevention in sexual health. However large inequalities have persisted, typically among those at greatest STI and HIV risk. There is significant unmet need for services by young adults, black or black British ethnicities, and for those reporting same-sex partners or new relationships in the past year. PrEP and PEP prescriptions and adherence has decreased among all subgroups with surveillance data outlining no differences in those accessing services from before the pandemic.

In terms of STI testing, proportional declines were seen in 18–24-year-olds and those aged over 45, heterosexual groups, in Black and Asian ethnicities and in men who have sex with men (MSM) with multiple marginalised identities. These include MSM who are older than 65 years, from ethnic minorities or from deprived communities. Local service data showed younger people and heterosexual groups had greater declines in diagnoses of STIs between 2019 and 2020 with slow growth patterns in 2021 data. A lack of ethnicity data precluded examining the extent to which COVID-19 widened pre-existing health inequalities.

For reproductive services inequalities were linked to deprivation, with lower socio-economic grades reporting the most difficulty accessing contraception. Digitalisation of services further acted as a barrier to hard-to-reach population groups as acquiring services during COVID was described to need tenacity because of changing information and procedures.

Reduced outreach care further exacerbated inequalities in hard-to-reach groups within sexual health, for example marginalised communities such as lesbian, gay, bisexual, transgender (LGBT) groups, ethnic minority groups and migrant communities.

Sexuality and ethnicity were not captured for a significant proportion of people presenting to sexual health services locally, limiting the extent to which health inequalities highlighted from national sources could be assessed in local services.

## 6.5 Recommendations

The Sexual Health Commissioning team at Nottinghamshire County council will be considering the following recommendations in the recommissioning process for Integrated Sexual Health services for 2024:

Sexual health services should continue to offer flexible remote elements to their services, ensuring equity by use of hybrid approaches for online and face to face delivery mechanisms for the digitally excluded and hard to reach population groups.

Planners of sexual health services should build back outreach care to increase access for hard-to-reach groups such as ethnic minorities and the LGBT+ communities. These groups are more receptive to discrete and informal outreach settings.

Targeted interventions to increase testing should be considered in the following groups who have experienced declines in testing:

- MSM with multiple marginalised identities such as those older than 65 years, from ethnic minorities or from deprived communities
- Heterosexual groups
- Younger adults

# 7. Gambling

According to the 2005 Gambling Act, gambling is defined as 'playing a game of chance for a prize, betting and participating in a lottery.'[59]

Harmful gambling is distinct to general gambling in that it involves high participation in online gambling, casino and bingo games, electronic gambling machines in bookmakers, sports and other event betting, betting exchanges and dog racing. Typically, 7 or more gambling activities are used by harmful gamblers.[59]

The most socio-economically deprived and disadvantaged groups in England have the lowest gambling participation rates, but the highest levels of harmful gambling. They are also the most susceptible to harm from gambling, making existing health inequalities worse.[59]

## 7.1 Themes from literature

### 7.1.1 Gender

There appears to be consensus from literature that harmful gambling habits are typically seen in males.[59 60 61]

A gambling-related harms evidence review by PHE stated "Demographic factors, particularly being male, appear more significant in predicting at-risk gambling behaviour than economic factors such as income, employment, and relative deprivation."[59] Further studies reinforced gender inequalities, concluding regular gamblers were more likely to be male than female in longitudinal survey analyses taken from before to after national lockdown.[61] The same study noted that gambling frequency was reduced during lockdown for both males and females and that there was a shift to online gambling due to lockdown and social distancing measures.

### 7.1.2 Alcohol and substance use

There were strong associations between heavy alcohol use and regular gambling in research.[60 61]. A cohort study looking at predictors of gambling behaviour through the pandemic also found those who frequently drank alcohol were more likely to gamble during strict lockdown or increase their frequency of gambling compared to before the lockdown.[62]

A PHE report into the 'Risk factors for gambling and harmful gambling' concluded that in children and young people, substance use was a risk factor of harmful gambling with a high degree of confidence.[60]

### 7.1.3 Mental health

An evidence review by PHE noted poor mental health was a stronger predictor of at-risk gambling than both poor physical health and negative health behaviours.[59] This was reinforced by a PHE report that stated depression specifically was a risk factor for harmful gambling in children and young people with a high degree of confidence.[60]

Cohort study data during the pandemic found those with anxiety and depression more likely to have increased their frequency of gambling during strict lockdown.[62]

### 7.1.4 Further research needs

The umbrella review was published in September 2021 by Public Health England into the 'Risk factors for gambling and harmful gambling'. The review concluded that there was stronger evidence across a range of risk factors for children and young people compared to the body of evidence for adult

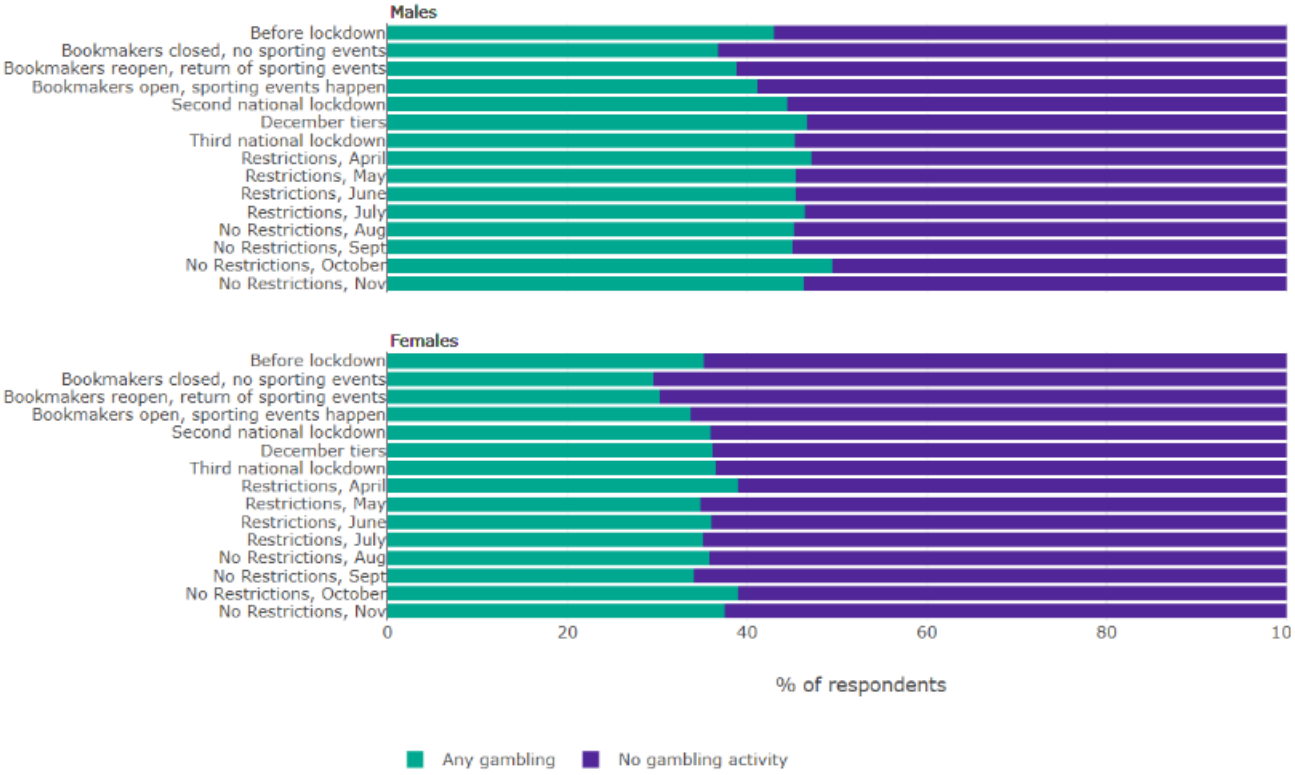
populations. The evidence base for adults was lacking due to cross-sectional study designs rather than longitudinal analyses.[60]

## 7.1 National and Regional Data

### 7.1.1 National data

National survey data from before the first national lockdown to November 2021, looked at patterns of gambling activity broken down by sex.[5] Figure 28 shows the proportion of males carrying out any gambling increased from 43% before lockdown to 47.2% by the end of the third national lockdown, following a brief period of reduced levels coinciding with the beginning of the pandemic. Similar trends over the pandemic were seen in females but with lower overall levels of gambling compared to males. The proportion of females carrying out any gambling increased from 35.1% before lockdown to 39% the end of the third national lockdown.

Figure 28: Gambling activity and the impact of the COVID-19 lockdown in England by sex.[5]




### 7.1.2 Regional data

Within Nottinghamshire County council, no service data was available to ascertain local gambling trends.

The Health survey for England (HSE) is able to provide some insight of gambling on a regional basis for England. The HSE is a nationally representative cross-sectional survey of people aged 16 years and over, combining data from the 2012; 2015; 2016 and 2018 surveys.

Table 2 shows gambling participation by regions in England.[63] In the East Midlands, the prevalence of gambling participation from the HSE was 61.1%. East Midlands were second only to the North East region, where gambling participation was 64.7%.

It was not possible to produce meaningful local authority analysis for at-risk gambling or problem gambling due to the small number of counts for these questions at local authority level.[63]

Table 2: Overall gambling participation by region, England 2012, 2015, 2016, 2018[63]

| | North East (%) | North West (%) | Yorkshire and the Humber (%) | East Midlands (%) | West Midlands (%) | East of England (%) | London (%) | South East (%) | South West (%) | Total (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Spent money on at least one gambling activity | 64.7 | 58.7 | 60.8 | 61.1 | 57.8 | 61.1 | 48.0 | 56.8 | 57.8 | 57.6 |
| Base | 1,329 | 3,592 | 2,699 | 2,332 | 2,838 | 3,013 | 4,115 | 4,442 | 2,803 | 27,164 |

## 7.2 Key points

Research during COVID has shown that generally gambling frequency reduced during lockdown, with a shift to online gambling methods due to lockdown and social distancing measures.

Emerging evidence through COVID looking at predictors of gambling behaviour found those who frequently drank alcohol and were diagnosed with anxiety and depression were more likely to increase their frequency of gambling compared to before the lockdown. Further research is needed to add to the evidence base on risk factors for harmful gambling.

It is also likely that gender inequalities have been accelerated. Longitudinal survey analysis during COVID lockdown concluded regular gamblers were more likely to be male than female. Research was not available to show if gambling trends have persisted into COVID recovery.

## 7.3 Recommendations

Public Health team members supporting the gambling agenda at Nottinghamshire County Council should consider the following recommendations:

Public health teams, commissioned providers and wider partners in health and social care should raise awareness of the problems around harmful gambling, particularly that it is predominantly males and the lowest socioeconomic groups, who are most susceptible to harm from gambling.

Public health teams, commissioned providers and wider partners in health and social care should consider delivering clear information about the harms of gambling, particularly online gambling which became more popular over the COVID-19 lockdown restrictions.

Targeted support may be required in groups for whom emerging evidence links the pandemic restrictions to increased gambling rates, such as men, substance misuse service users and those known to mental health services.

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