BMJ Open is committed to open peer review. As part of this commitment we make the peer review history of every article we publish publicly available.

When an article is published we post the peer reviewers’ comments and the authors’ responses online. We also post the versions of the paper that were used during peer review. These are the versions that the peer review comments apply to.

The versions of the paper that follow are the versions that were submitted during the peer review process. They are not the versions of record or the final published versions. They should not be cited or distributed as the published version of this manuscript.

BMJ Open is an open access journal and the full, final, typeset and author-corrected version of record of the manuscript is available on our site with no access controls, subscription charges or pay-per-view fees (http://bmjopen.bmj.com).

If you have any questions on BMJ Open’s open peer review process please email info.bmjopen@bmj.com
Engagement with regular asymptomatic COVID-19 testing in young people in North West England

<table>
<thead>
<tr>
<th>Journal:</th>
<th>BMJ Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manuscript ID:</td>
<td>bmjopen-2022-069591</td>
</tr>
<tr>
<td>Article Type:</td>
<td>Original research</td>
</tr>
<tr>
<td>Date Submitted by the Author:</td>
<td>28-Nov-2022</td>
</tr>
<tr>
<td>Complete List of Authors:</td>
<td>Thorpe, Lisa; UK Health Security Agency Carter, Holly; UK Health Security Agency, Behavioural Science and Insights Unit Robin, Charlotte; Cheshire and Merseyside HPT, Behavioural Science and Insights Unit</td>
</tr>
<tr>
<td>Keywords:</td>
<td>COVID-19, PUBLIC HEALTH, INFECTIOUS DISEASES</td>
</tr>
</tbody>
</table>
I, the Submitting Author has the right to grant and does grant on behalf of all authors of the Work (as defined in the below author licence), an exclusive licence and/or a non-exclusive licence for contributions from authors who are: i) UK Crown employees; ii) where BMJ has agreed a CC-BY licence shall apply, and/or iii) in accordance with the terms applicable for US Federal Government officers or employees acting as part of their official duties; on a worldwide, perpetual, irrevocable, royalty-free basis to BMJ Publishing Group Ltd (“BMJ”) its licensees and where the relevant Journal is co-owned by BMJ to the co-owners of the Journal, to publish the Work in this journal and any other BMJ products and to exploit all rights, as set out in our licence.

The Submitting Author accepts and understands that any supply made under these terms is made by BMJ to the Submitting Author unless you are acting as an employee on behalf of your employer or a postgraduate student of an affiliated institution which is paying any applicable article publishing charge (“APC”) for Open Access articles. Where the Submitting Author wishes to make the Work available on an Open Access basis (and intends to pay the relevant APC), the terms of reuse of such Open Access shall be governed by a Creative Commons licence – details of these licences and which Creative Commons licence will apply to this Work are set out in our licence referred to above.

Other than as permitted in any relevant BMJ Author’s Self Archiving Policies, I confirm this Work has not been accepted for publication elsewhere, is not being considered for publication elsewhere and does not duplicate material already published. I confirm all authors consent to publication of this Work and authorise the granting of this licence.
Engagement with regular asymptomatic COVID-19 testing in young people in North West England

Lisa Thorpe¹, Holly Carter², Charlotte Robin*³
Behavioural Science and Insights Unit, UK Health Security Agency

*Corresponding author: charlotte.robin@ukhsa.gov.uk

Abstract

Objectives: Communities in North West England had some of the highest incidence of COVID-19, particularly in their younger populations. Test kits were provided to young people in Blackburn with Darwen to encourage regular testing and reduce COVID-19 transmission. The aim of this study was to identify barriers and facilitators to engaging in regular asymptomatic testing in young people.

Design: Focus groups.

Setting: Young people and parents of school-age children in North West England.

Participants: 14 participants aged 12-15 years, 13 participants aged 16-25 years and 9 participants who were parents of school-aged children.

Results: Six focus groups (36 participants) were conducted. Analysis identified young people were not against testing and many wanted to test to protect others; however, they felt their needs were not met when they were seeking information on the importance of testing and accessing tests. Young people also felt they wanted more autonomy to make decisions and access tests themselves, without having to rely on parents. Language barriers and challenges with the testing process, particularly reporting the results, were also identified as barriers for parents and young people. Parents were reluctant to test in the absence of symptoms and also noted that young people were very adaptable and testing became more acceptable to them as the pandemic progressed.

Conclusions: Tailored messaging for young people would help this group engage in regular testing and feel part of the COVID-19 response. Regular testing is not currently required in England, however it is important to understand barriers to engaging in testing for young people, as testing may be reintroduced in response to this or future pandemics.

Keywords: COVID-19, asymptomatic, testing, lateral flow test, young people, engagement, barriers
Strengths and limitations

- We worked with local youth and community organisations to recruit participants through trusted people, which helped facilitate open and honest discussion in the focus groups.
- Our study was limited to one region in North West England, which had some of the highest COVID-19 rates in the UK, therefore our findings may not be representative of other regions in the UK.
- Participants in the parent focus groups were predominantly female and Asian ethnicity; further work with parents of other ethnicities is required to ensure their views are represented.
Background

In January 2021, the Government announced the third national lockdown in England and began to roll out the use of regular asymptomatic testing as a strategy to help control the spread of COVID-19 [1]. Lateral flow tests (LFT) were provided to local councils to help protect those who were unable to work from home [1]. Between April 2021 and March 2022, LFTs were freely available to everyone in England and twice weekly asymptomatic testing was used as a strategy to allow restrictions to lift [2]. Individuals over the age of 16 could order lateral flow test kits from the Government website or collect them from local NHS pharmacies. Lateral flow test kits were also supplied to all educational settings and employment settings offering rapid testing [2].

Areas in North West England saw some of the highest increases in COVID-19 cases in England during an outbreak of the Delta variant. In Blackburn with Darwen, the rise in COVID-19 cases due to the Delta variant was seen predominantly in those under 25 years of age [3], with outcomes from surge testing showing that confirmed cases in the under 25’s were over 50% higher than those aged 25 years and above [3]. While those under 25 years of age are at lower risk of serious illness from COVID-19, their behaviours may put them at higher risk of contracting and spreading the virus [4].

Many young people have experienced disruption to their education due to government lockdowns in England [5], and regular asymptomatic testing was introduced in many educational settings to help reduce COVID-19 transmission and enable young people to return to face-to-face education [6]. In addition to national guidance for everyone to engage in regular asymptomatic testing, in July 2021, Blackburn with Darwen Council provided all school children 16 years and under with seven lateral flow testing kits and an accompanying leaflet outlining the importance of testing regularly throughout the school holidays (Supplementary File 1).

It is important that young people are able to follow COVID-19 testing guidelines and can access tests when needed, to reduce the spread of virus. Engaging in regular testing is particularly important for young people, as those aged 25 and younger are less likely to have as many vaccinations compared with those over 25 years of age [7], with older age groups being offered vaccinations before younger age groups. To support young people to engage in
regular testing, it is essential to understand young peoples’ and parents’ experiences of
regular testing to inform policy and practice decisions. Although regular asymptomatic
testing is currently only required in specific high-risk settings, regular testing in the general
population is likely to be reintroduced if COVID-19 cases increase or if new variants are
identified [8]. It is therefore important to understand the barriers and facilitators to young
people engaging in testing. The aim of this study was to gain a better understanding of
experiences of regular asymptomatic testing in young people aged 12-25 years and parents,
including identifying barriers and facilitators to engaging in regular testing.

Method

Study design

Focus groups were carried out with young people aged 12-25 and parents of school aged
children in Blackburn with Darwen, between 23 August and 5 October, 2021. Focus groups
for the 12-15 year olds took place at a primary school, where participants were attending a
summer school run by a local youth organisation. Focus groups for the 16-25 year olds took
place at a local college and housing shelter. The parents focus group took place at a
community centre where a regular parents support group was based. We undertook a
qualitative approach to enable us to explore participants’ experience and perceptions of
testing in depth. It was not possible to involve the public in the design, conduct or reporting
of this study due to the responsive nature of the work.

Participants

Six focus groups were conducted (36 participants in total). Two focus groups were carried
out with participants aged between 12 and 15 years (seven participants per focus group),
three focus groups were carried out with participants aged between 16 and 25 years (three
groups with four to five participants per group), and one focus group was carried out with
parents (nine participants). Demographic characteristics of participants are shown in Table 1.
Participants were recruited via youth organisations in Blackburn with Darwen. Organisations
were identified through Blackburn with Darwen community networks. Each organisation was
contacted via email with a recruitment leaflet and participant information sheet to share with
their members. Individuals who wanted to participate contacted the lead researcher directly
via email. Parents of children under the age of 15 who wanted to participate contacted the
lead researcher on behalf of their child. Written and/or verbal consent was obtained from all
participants. Parents provided written consent for children under the age of 15 years and verbal consent from participants was also obtained at the start of the focus groups.

Table 1. Demographic characteristics of focus group participants.

<table>
<thead>
<tr>
<th></th>
<th>12-15 years</th>
<th>16-25 years</th>
<th>Parents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>12.9</td>
<td>18.0</td>
<td>44.7</td>
</tr>
<tr>
<td>SD</td>
<td>1.1</td>
<td>1.5</td>
<td>10.1</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5 (36%)</td>
<td>5 (38%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Female</td>
<td>9 (64%)</td>
<td>8 (62%)</td>
<td>9 (100%)</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>6 (43%)</td>
<td>9 (69%)</td>
<td>1 (11%)</td>
</tr>
<tr>
<td>Asian</td>
<td>8 (57%)</td>
<td>3 (23%)</td>
<td>8 (89%)</td>
</tr>
<tr>
<td>Other</td>
<td>0 (0%)</td>
<td>1 (8%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

**Focus groups**

A topic guide (Supplementary Files 2-4) with open-ended questions was used to ensure key areas were covered, but also allowing flexibility to explore new themes as they arose. The topic guide included questions on experiences of regular COVID-19 testing, sources of COVID-19 testing information and perceptions of the importance of COVID-19 testing in young people.

**Analysis**

Focus groups were recorded using a digital recorder and transcribed **verbatim**. The facilitator also took notes during the focus groups, which helped inform the analysis. Data were depersonalised by removing any identifiable data (including names and locations) and imported into NVivo (QSR International, London, UK) for analysis. Data from all focus
groups were analysed separately and outcomes from both the 12-15 years and 16-25 years focus groups were combined.

Data were analysed using an inductive approach [9] where the first author familiarised themselves with the data and developed a coding framework based on coding four transcripts. Fieldnotes were used alongside the inductive coding to develop the themes. The coding framework was then applied to the remaining transcripts inductively to allow new codes to be added as the analysis progressed. The final themes were refined by all the authors. Focus groups were conducted by a UKHSA employee. Participants were aware of this so reflexivity was used throughout the analysis to take into account any potential influence on participant responses.

Patient and Public Involvement
No patient involved

Results
Seven main themes and six sub-themes were identified. These themes related to barriers and facilitators to engaging with regular asymptomatic testing, with five themes relating to barriers to engaging with testing and two themes relating to facilitators of engaging with testing. The main themes relating to barriers to testing were: conceptualisation of health and illness; young people’s lack of autonomy; unmet information needs (lack of information from trusted sources, lack of targeted information for young people, frustration with frequent changes to guidance); language barriers; and challenges with the testing process (parental challenges of testing their child, challenges with reporting results, fear of testing positive).

The main themes relating to facilitators to testing were protecting others and adapting to the situation.

Young people, particularly those under 16 years of age, depended on their parents or guardians to make decisions about testing. Their engagement with regular testing was therefore – in part – determined by how their parents or guardians viewed the policy. As such, the results we report here combine findings from the young people and parent focus groups where applicable, to demonstrate the integrated nature of how barriers and facilitators to testing arise in young people.
Conceptualisation of health and illness

For some parents in our study, testing was understood as something that was enacted in response to a child becoming ill, developing symptoms or being in close contact with a confirmed case. Unless these criteria were met, parents were reluctant for their child to take a test: “Just because, like, for no reason, just to get them tested?... I’m not really in favour with that” (Parent Focus Group). This suggests that for these parents, the way in which they conceptualised illness – as a state of experiencing symptoms – was not compatible with an asymptomatic testing policy, where testing is encouraged in the absence of symptoms.

Young people’s lack of autonomy

Despite requiring consent from their parents to take tests in school, young people under 16 discussed how they would welcome the autonomy to make their own decisions and access testing independently. Young people recognised that the only way they could access tests would be through their parents, but if tests were available to them directly, they would use them: “It’s just regular testing so we can keep everyone safe... I know I would use it.” (12-15 years Focus Group 2).

Young people also suggested that tests should be made available from local shops to make them easier to access without having to rely on their parents or guardians: “Local shops could have a few. Because we can’t drive, can we? We can’t go where adults can go, and sometimes your adults are busy.” (12-15 years Focus Group 1).

Unmet information needs

Lack of information from trusted sources

While young people in our study wanted autonomy to make their own decisions about testing, they encountered barriers when seeking and understanding information about the testing programme. Some participants stated they had not seen information about testing, while those who had seen information noted that this was predominantly on social media, which was not viewed as a trusted source of information. Participants suggested that information aimed at young people from trusted sites would help encourage them to take a test; the Government and NHS websites were mentioned specifically: “[Information] come from a government website, or a trusted website. Not, like, a dodgy website” (16-25 years
Focus Group 2). Some of the young people aged 12-15 years suggested that information should come from authority figures – the Prime Minister and government were mentioned specifically: “I’d listen more if it came from Boris Johnson.” (12-15 years Focus Group 2).

Lack of targeted information for young people

In both sets of focus groups (parents and young people), participants discussed how there was a lack of targeted information for young people. Some young people felt the information available did not apply to them: “I feel it’s more around the elderly...I feel like they’re being given information that applies to them, [rather] than us.” (16-25 years Focus Group 2).

These views were echoed in the parent focus groups, where some participants felt that a lack of engagement with young people resulted in them not following COVID-19 guidance: “they don’t really approach the younger generation. And that’s why they don’t wear masks in town” (Parent Focus Group).

Again, these views were reflected in the parent focus group where they discussed how information for the general public could be challenging for young people to understand: “Do you know the charts they have, or the media, it's not really... I don't think it's kids-friendly, the way they write it... I think they need to be more kids-friendly. It's more adults” (Parent Focus Group).

Frustration with frequent changes to guidance

The frequent changes in government guidance on testing exacerbated confusion about testing in the absence of symptoms, particularly when messages about risk changed as the pandemic progressed: “They kept saying at the beginning, it doesn’t affect children, children are safe, they don’t need to wear their masks. And now suddenly, when everyone's been vaccinated, now it's all aimed at children. Now children need to be careful. Why not before but now? It just seems a bit strange to me” (Parent Focus Group).

Language barriers

In addition to the lack of targeted information, some young people noted they found the way in which a positive test was indicated confusing: “When I first used the lateral flow test, it has C and T. And I didn’t understand what it meant. So, when I tested it, it said C. And C for me I thought it meant you have COVID.” (16-25 years Focus Group 3).
Some young people also discussed how those with English as a second language struggled to understand how to complete the test. It was suggested that testing instructions should be available in different languages: “For people who aren’t very fluent in English, they struggle a lot to understand how to do the test properly […] For example in our Blackburn community, we live in a diverse community, where multiple people speak different languages. So, we have leaflets in the council with other languages that people can access.” (16-25 years Focus Group 3).

Young people in the study felt that information given about testing, including the instructions given in the test kits, included words they could not understand: “Sometimes they use proper scientific words as well… I don’t understand half of it” (12-15 years Focus Group 1). It was suggested that this type of information should be aimed specifically at young people: “They should do the same booklet that they do positioned to the little one, like a children version, because the words, I can barely understand them sometimes because they’re more like adult words. And they should use more pictures in the kids one and stuff” (12-15 years Focus Group 1).

### Challenges with the testing process

#### Parental challenges of testing their child

Many parents found that it was difficult to do the test on young children and felt guilty about their child having to take a test: “I felt bad, because they were crying, obviously. Felt really bad, and I was blaming myself”. Some parents, specifically those with teenagers, did not trust their child to take the test on their own in case they did not take it properly: “When I do it, I make sure I do it. They’re not allowed to do it, I do it, just to make sure.” (Parent Focus Group).

#### Challenges with reporting results

While many young people in the 16-25 years focus groups understood how to take a test, some were not aware that they needed to report the test result or how to do so. Some found recording the result difficult: “It’s quite difficult to record the test…you went through about… I went through about 20 different pages on the Government website just to record a test. So, after doing a test every three days, it just got too much to record all of them” (16-25 years Focus Group 3).
Similarly, some parents found it difficult to report the result of the test: “It was such a long procedure... I kept trying to put the details in, but it wouldn't...” (Parent Focus Group).

Digital exclusion was also identified as a barrier to reporting test results; some parents were unable to use a computer and preferred to report the results over the phone: “I like doing everything over the phone. I'm really bad with technology.” (Parent Focus Group).

Fear of testing positive

As well as challenges around taking the testing and reporting results, the implications of the test results were also highlighted as a potential barrier. Participants in the 12-15 years focus groups stated that they were not concerned about taking a test, but it was the outcome of the test that they feared the most: “That many people, they’re really ill and they’ve also died and stuff, so it’s scary that could happen to you as well.” (12-15 years Focus Group 1). Some participants stated that they were scared to take the test at first, but actually found the result more daunting: “she got tested, she was like, it was proper scary because I thought I might get it.” (12-15 years Focus Group 1).

Protecting others

The main facilitator of engagement with testing was motivation to protect other people. Many young people from both age groups stated that they would get a COVID-19 test to protect others: “For the safety of those around you, so if you’re not feeling too good or [you have] any of the symptoms you should go and get tested, for the people around you and not just for yourself” (12-15 years Focus Group 2). Some young people had caring responsibilities, which influenced their decision to take a test: “I’ve got a child. So, I have to think for my child as well as myself” (16-25 years Focus Group 1).

Many participants recognised that COVID-19 can be passed on without people showing any symptoms and felt that testing was important for stopping community transmission of COVID-19: “Keeping people safe as well... it’s just protecting the community” (12-15 years Focus Group 1). Some young people from the focus groups were aware of testing centres and surge testing happening in local communities, however there was some confusion over who was eligible for these testing services. Some young people were not aware that testing centres and surge testing were available for everyone and thought that these were only for older adults and key workers.
Some parents chose to isolate and engage with testing before visiting more vulnerable family members: “The test was because my parents. Because if they’re over 60... so every time all of us, there’s four of us, so we all do the test every time before we went down to see mum and dad. Or we’d isolate for ten days, do the test, and then we’d go and see mum and dad” (Parent Focus Group).

Adapting to the situation

Some parents stated that despite children being scared about COVID-19 at the beginning of the pandemic, many have adapted to the situation and now take tests regularly: “For kids, there was a fear factor in the beginning, like the COVID tests and that, they were like, ugh. Because there’s a personal space. But then kids adapt. And then after the once or twice we’ve done the test, they’re like, oh mummy, I can do it myself now. So kids do adapt” (Parent Focus Group).

Discussion

In this study, we explored young peoples’ and parents’ attitudes and behaviours in relation to regular asymptomatic testing. Specifically, we examined any barriers or facilitators to engaging in regular asymptomatic testing. Overall, the young people in this study were not against COVID-19 testing and were concerned about spreading the virus to loved ones and their wider communities. They recognised that by taking a test they could contribute to stopping the spread of the virus. However, young people felt there was a lack of public health information aimed at their age group from trusted sources, suggesting that they felt excluded, despite being required to take part in regular asymptomatic testing.

Despite young peoples’ acknowledgement of the importance of testing, some parents were against regular asymptomatic testing for their children. Unless testing was required, for example in order to attend school, or their child was showing symptoms, most parents did not want their child to take part in regular testing. Previous research exploring parents’ views of the school testing programme found that a key barrier to testing was that parents were reluctant to test their children in the absence of symptoms [13]. Similarly, the parents in our study were reluctant to allow their child to take a test unless they were experiencing symptoms. This created a barrier for young people to take part in regular testing, as those under 16 years of age require the permission of an adult to take a test. In circumstances where young people want to take a test, they often lack the autonomy to do so.
Our study also highlighted that young people of all ages felt that information about COVID-19 testing had not been aimed at their age group. Some information, including testing booklets, contained language that was too complicated and left them feeling excluded. Previous research found that young people wanted to play an active part in the recovery from the pandemic, but felt that they needed more information that was directed at their age group, and a separate platform in which they could have their voices heard [10].

In our study, most young people stated that the information that they had seen about COVID-19 testing was mainly from social media, with many stating that they could not trust the information they had read. To help them feel recognised by those in authority, young people expressed a need for government messaging aimed at their age group. This finding supports previous research which highlighted that young people want simple, tailored messaging in public health campaigns that can be easily accessed by all ages [11]. This would help them feel like they are being included in political decisions and recognised in the COVID-19 response [11]. To ensure that young people are included in the public health response and engage in regular testing, the Government and Local Authorities should involve young people in the production of testing materials and messages to ensure that instructions are clear to follow and can be understood by those of a younger age. This recommendation supports learning from previous pandemics, which suggested that involving communities in the response can help shape social norms and enable public health messages to have a more powerful impact [12].

Young people felt strongly about protecting others in their community and this was stated as the main reason for taking a test. This finding supports previous research showing that young people had an awareness of the impact of the pandemic on the wider community, specifically elderly people, socially disadvantaged people and parents [14] and were willing to accept testing as a way of keeping others safe, especially when testing was recommended by health professionals [15].

Our study therefore identified several barriers and facilitators to young people engaging with regular asymptomatic testing. Based on the barriers identified we were able to develop several recommendations for improving young people’s engagement with regular asymptomatic testing, should this be required in the future; these are presented in Table 2 below.

Table 2: Recommendations based on barriers to testing.
<table>
<thead>
<tr>
<th>Barrier</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmet information needs</td>
<td>Authority figures should provide clear messaging to young people about testing. This may help young people understand the importance of participating in regular testing.</td>
</tr>
<tr>
<td></td>
<td>Government / NHS websites should provide targeted information about the importance of testing that is aimed at young people. This should be a separate page that includes language that is suitable for young people. It should include information on why young people should get tested, how they do it, what to do once they have completed the test and key information about COVID-19 (for example, case numbers and reasons for high case numbers, that are specific to their geographical area).</td>
</tr>
<tr>
<td></td>
<td><strong>Involve young people in the production of testing materials and messages</strong> to ensure that instructions are clear to follow and can be understood by those of a younger age.</td>
</tr>
<tr>
<td>Conceptualising health and illness</td>
<td>Provide clear information about what asymptomatic transmission is and how testing can help reduce the risk of transmission.</td>
</tr>
<tr>
<td>Language barriers relating to testing kits</td>
<td>Make paper copies of testing messages and instruction booklets available in different languages so that they are inclusive to all. Having these only as digital</td>
</tr>
<tr>
<td><strong>Copies</strong></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td></td>
</tr>
<tr>
<td>copies excludes populations that are not able to access or understand digital devices.</td>
<td></td>
</tr>
<tr>
<td><strong>Provide clear instructions and pictures of what a positive and negative test look like,</strong> this should stop any confusion between the letters that are on the testing device.</td>
<td></td>
</tr>
<tr>
<td><strong>Involve young people in the production of testing materials and messages</strong> to ensure that instructions are clear to follow and can be understood by those of a younger age.</td>
<td></td>
</tr>
<tr>
<td><strong>Lack of autonomy</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Provide local shops with testing kits.</strong> This will allow local residents that do not have online access or are unable to travel to their nearest chemist to get testing kits when needed.</td>
<td></td>
</tr>
<tr>
<td><strong>Challenges with the testing process</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Provide clear instructions</strong> for how to report a test, including visual demonstrations such as videos.</td>
<td></td>
</tr>
<tr>
<td><strong>Provide alternative methods of reporting</strong> for those who do not have digital or online access.</td>
<td></td>
</tr>
<tr>
<td><strong>Fear of testing positive</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Provide clear information on what it means to test positive.</strong> This should include information on support available to young people that need to self-isolate due to a positive test result. As results are received in the absence of a medical or trained professional, clear information aimed at young people should aim to eliminate any fear or stigma that is associated with a positive test result.</td>
<td></td>
</tr>
</tbody>
</table>
Limitations

The North West, particularly Blackburn with Darwen, was one of the areas most affected by COVID-19. Blackburn with Darwen had high numbers of COVID-19 cases, particularly in their younger population. It was therefore important to understand why young people were not engaging in regular testing in this community, which is why we chose to focus on understanding the attitudes and behaviours of young people in this area. However, it should be noted that the study sample used is not necessarily representative of the wider UK population.

As part of the recruitment strategy for this study, we identified parent groups that were part of the same organisation that was used to recruit participants for the 12-15 years focus group. The benefit of using this strategy was that a good rapport had already been established in the organisation and this enabled a relaxed environment for open and honest communication, which allowed for rich data to be gathered. However, this strategy resulted in the parents who took part in the focus groups being predominately mothers/grandmothers who were of Asian ethnicity. They were therefore not necessarily representative of parents or grandparents of different ethnicities. Further research could explore to what extent the themes reported in this study are consistent amongst different ethnicities, across the country.

Conclusion

Young people are at increased risk of COVID-19 transmission, and regular asymptomatic testing could help to reduce the risk of young people catching and spreading COVID-19. However, there is a lack of information concerning young peoples’ engagement with regular testing. We identified that the main barriers to young people engaging with regular testing were unmet information needs and lack of autonomy in testing. These barriers could be addressed by providing clear and targeted messages aimed at young people. Information aimed at young people should be available on government or NHS websites and include topics such as the importance of testing, how to complete a test, what to do once they have completed the test and key information about COVID-19. While young people are not currently being asked to engage in regular asymptomatic testing, it is important to understand
the barriers that reduce young peoples’ engagement with testing as regular testing is likely to be part of future infectious disease outbreaks or pandemics.

Authors’ contributions

All authors designed the study. LT ran the focus groups. LT and CR analysed the data and drafted the manuscript. All authors reviewed the manuscript and approved the final content.

Competing interests

None declared.

Funding

This study received no specific funding.

Availability of data and materials

On request from the corresponding author.

Ethics approval and consent to participate

The study was approved by the Public Health England Research Ethics Governance Group.

Acknowledgements

We would like to express our gratitude to all the participants who shared their experiences of COVID-19 testing with us. We would also like to acknowledge Blackburn with Darwen Council Public Health team and local youth organisations, for their time and support with recruitment.

CR is affiliated to the National Institute for Health Research Health Protection Research Unit (NIHR HPRU) in Emerging and Zoonotic Infections at the University of Liverpool in
partnership with UK HSA in collaboration with the Liverpool School of Tropical Medicine and The University of Oxford, the NIHR HPRU in Gastrointestinal Infections at the University of Liverpool in partnership with UK HSA, in collaboration with the University of Warwick and the NIHR HPRU in Behavioural Science and Evaluation at the University of Bristol, in partnership with UK HSA. C.R. is based at UK HSA.

HC is supported by the National Institute for Health Research Health Protection Research Unit (NIHR HPRU) in Emergency Preparedness and Response, a partnership between UK Health Security Agency (UKHSA), King’s College London and the University of East Anglia.

The views expressed are those of the author(s) and not necessarily those of the NIHR, UKHSA or the Department of Health and Social Care.

References


HOLIDAY AND FOOD SUMMER 2021 (HAF)

The Holiday and Food (HAF) Summer scheme will be running again for 4 weeks this summer.

This programme offers free places in holiday clubs to children eligible for free school meals for the equivalent of at least four hours a day, four days a week for 4 weeks in the school summer holidays during 2021.

HAF programmes can offer so much – whether it is arts and crafts, music, sport, new friendships and wellbeing support – giving children fun activities as well as learning experiences throughout the summer holidays.

Sessions are available from 10am till 2pm in 18 locations and lunch, snacks and refreshments are all provided.

All activities are delivered by fully trained staff and include: multi-sports, musical theatre and dance, arts and crafts, movie time, drama and music, board game madness, splash bubble and pop and much, much more!!

Visit www.getstuckin.org.uk to find out more about what is available in your area or to book your place.

Subject to the latest public health advice, our expectation is that all activities will operate face-to-face.

ADVICE FOR...

HIGH SCHOOL STUDENTS:

As schools break up, we are asking you to continue taking rapid lateral flow tests twice a week during the summer break.

This means that any positive cases can be identified quickly, which helps to prevent the virus being passed on. We want you to have a fun summer and ensure everyone stays safe. By taking regular tests even if you have no symptoms, you can minimise the chances of putting your friends, family and others at risk.

If you need any more rapid tests, go to www.blackburn.gov.uk/get-a-test.

“I’m testing regularly because...
I want to be able to socialise without worrying about being the reason someone else has to self-isolate.”

Lois, aged 14

PARENTS OF YOUNGER CHILDREN:

We urge parents and carers to carry out regular lateral flow tests, ideally twice weekly. This will help to identify any positive cases of Covid-19.

If you or your family test positive, you must follow self-isolation advice. Self-isolation means the family will not be able to leave the home.

See inside for more advice on self-isolation.

“I’m testing regularly because...
I want to use my holiday to its max potential and have fun rather than having to isolate.”

Zainab, aged 17

“I want to have a fun summer and play football with my friends.”

Jacob, aged 11

www.blackburn.gov.uk
WHERE CAN YOU GET A TEST?

There are plenty of places where you can get rapid tests.

An up-to-date list of testing sites is on the Blackburn with Darwen Council website

www.blackburn.gov.uk/get-a-test

You can also order rapid test kits online via gov.uk, or collect from your local pharmacy and most local supermarkets and community centres.

ADVICE IF YOU HAVE SYMPTOMS

The common symptoms people experience when they have COVID-19 include:

- High temperature
- A new, continuous cough
- Loss or change to your sense of smell or taste

With the Delta variant, people have reported having different symptoms including headaches, sickness and nausea, diarrhoea and extreme tiredness.

If you have any of these you need to have a PCR test.

You can book online or by calling 119, or just turn up at one of the local walk-in test sites.

The details of these centres are also on the council website. If you test positive, you and your household must self-isolate to help stop the virus spreading. You should also give details of your close contacts to NHS Test & Trace when they contact you.

REGULAR TESTS IF YOU DO NOT HAVE SYMPTOMS

Anyone without symptoms can use regular rapid lateral flow tests, to help keep our loved ones safe.

“Im testing regularly because...

I want to have confidence in interacting with my friends & family over the summer holidays, ensuring that I am keeping them and the community safe.”

Muhammed, aged 15

BEEN ASKED TO SELF-ISOLATE?

If you have had recent close contact with someone who tests positive for Covid, you need to self-isolate for 10 days from the day you were in close contact.

This means staying at home and not going out at all - not even for activities like sports/dance practice or religious education.

If you then develop symptoms of Coronavirus:

- You must still complete your original 10 day isolation
- You and your household must self-isolate for 10 days from the first day of symptoms
- Share your contacts with NHS Test & Trace when they call you
- Your household can stop isolating immediately - if they feel well
- You need to self-isolate for 10 days from the day you were in close contact

Anyone who has previously tested positive for Covid-19 is advised not to re-test within 90 days of getting a positive result, unless they develop any new symptoms of Covid-19.
Regular asymptomatic testing engagement in young people in North West England

Parents

Focus Group Guide

1. Has your child ever had a COVID-19 test?

Prompts:
   a. If not, why not?
   b. If so, why did they get tested?
      i. Requirement for education/youth groups, had symptoms, someone you had
         contact with had symptoms, concerned about getting COVID or passing it
         onto others?
   c. Do you know what type of test they took?
      i. Lateral flow or PCR?
   d. Who provided them with the test?
   e. How did they know what type of test to take?
   f. How easy or difficult was it for them to take the test?
   g. Roughly how many tests/how frequently have they had COVID tests

2. Did others know that they were getting a test?

Prompts:
   a. If so, what did your friends/family think of them getting tested?

3. Did you report the result?

Prompt:
   a. Did you tell anyone else of the test result?
   b. Did they tell anyone else of the test result?
   c. Have you taken tests and not reported results?

4. Have you or your child ever tested positive COVID-19?

   a. how did that make you feel?
      i. Concern about what others might think?
      ii. Time off work/school?

5. If your child has never taken a COVID-19 test, can you tell me why not?

Prompts:
   a. Did you know you could get a test?
   b. Did you know where to get a test from?
   c. Did you have any concerns about the test result?
   d. Were you concerned about what your friends/family might think?
6. What information have you heard or seen about regular COVID testing?

Prompts:

a. Was the information specifically informing you about regular testing in young people?
b. Where did you see/hear it – social media, work, school, friends/family?
c. Was the information useful?
d. Do you feel that the information applies to you?
e. Are there sources of information you trust more than others?
f. Do you feel like you need more information?
   i. If so, what would be helpful?

7. Can you tell me how you would get a test kit for regular COVID testing?

Prompts:

a. From your school or workplace, parents, chemist, online?
b. How easy was it to get a test kit when you needed one?
c. Is there anything that could have made it easier to get a test kit?

8. Do you think you will ask your child to take regular COVID tests in future?

Prompts:

a. If not, why not?
   i. Is there anything that might encourage you to get one?
b. If yes, why?
c. Would being vaccinated for COVID make any difference to your decision?

9. How important do you think it is to get regular COVID tests for you child?

Prompts:

a. For you personally?
   i. Why do you think that is?
b. For other people where you live/work/go to school?
   i. Why do you think that is?
c. How important is it for limiting the spread of COVID-19?
d. Do you think you can catch COVID from someone with no symptoms?
e. Do you think you can pass COVID on if you have no symptoms?

10. Is there anything else you would like to add that we have not already discussed?
Regular asymptomatic testing engagement in young people in North West England

16-25 years old

Focus Group Guide

1. Have you ever had a COVID-19 test?

Prompts:
   a. If not, why not?
   b. If so, why did you decide to get tested?
      i. Requirement for work, education, had symptoms, someone you had contact with had symptoms, concerned about getting COVID or passing it onto others?
   c. Do you know what type of test you took?
      i. Lateral flow or PCR?
   d. How did you know what type of test to take?
   e. How easy or difficult was it taking the test?
   f. Roughly how many tests/how frequently have you had COVID tests

2. Did others know you were getting a test?

Prompts:
   a. If so, what did your friends/family think of you getting tested?

3. Did you report the result?

Prompt:
   a. Did you tell anyone else of the test result?
   b. Have you taken tests and not reported results?

4. Have you ever tested positive COVID-19?

   a. How did that make you feel?
      i. Concern about what others might think?
      ii. Time off work/school?

5. If you have never taken a COVID-19 test, can you tell me why not?

Prompts:
   a. Did you know you could get a test?
   b. Did you know where to get a test from?
   c. Did you have any concerns about the test result?
   d. Were you concerned about what your friends/family might think?

6. What information have you heard or seen about regular COVID testing?
Prompts:

a. Where did you see/hear it – social media, work, school, friends/family?
b. Was the information useful?
c. Do you feel that the information applies to you?
d. Are there sources of information you trust more than others?
e. Do you feel like you need more information?
   i. If so, what would be helpful?

7. Can you tell me how you would get a test kit for regular COVID testing?

Prompts:

a. From your school or workplace, parents, chemist, online?
b. How easy was it to get a test kit when you needed one?
c. Is there anything that could have made it easier to get a test kit?

8. Do you think you will take regular COVID tests in future?

Prompts:

a. If not, why not?
   i. Is there anything that might encourage you to get one?
b. If yes, why?
c. Would being vaccinated for COVID make any difference to your decision?

9. How important do you think it is to get regular COVID tests?

Prompts:

a. For you personally?
   i. Why do you think that is?
b. For other people where you live/work/go to school?
   i. Why do you think that is?
c. How important is it for limiting the spread of COVID-19?
d. Do you think you can catch COVID from someone with no symptoms?
e. Do you think you can pass COVID on if you have no symptoms?

10. Is there anything else you would like to add that we have not already discussed?
Regular asymptomatic testing engagement in young people in North West England

12-15 years old

Focus Group Guide

1. Have you ever had a COVID-19 test?

Prompts:
   a. If not, why not?
   b. If so, why did you decide to get tested?
      i. School, youth club, had symptoms, someone you had contact with had symptoms, parents?
   c. Do you know what type of test you took?
      i. Lateral flow or PCR?
   d. How did you know what type of test to take?
   e. How easy or difficult was it taking the test?
   f. Roughly how many tests/how frequently have you had COVID tests

2. Did others know you were getting a test?

Prompts:
   a. If so, what did your friends/family think of you getting tested?

3. Did you (or your parent) report the result?

Prompt:
   a. Did you tell anyone else of the test result?
   b. Have you taken tests and not reported results?

4. Have you ever tested positive for COVID-19?

   a. How did that make you feel?
      i. Concern about what others might think?
      ii. Time off school?

5. If you have never taken a COVID-19 test, can you tell me why not?

Prompts:
   a. Did you know who to ask to get a test?
   b. Did you know where to get a test from?
   c. Did you have any concerns about the test?
   d. Were you concerned about what your friends/family might think?

6. What information have you heard or seen about regular COVID testing?

Prompts:
a. Where did you see/hear it – social media, school, friends/family?
b. Was the information useful?
c. Do you feel that the information applies to you?
d. Are there sources of information you trust more than others?
e. Do you feel like you need more information?
   i. If so, what would be helpful?

7. Can you tell me how you would get a test kit for regular COVID testing?
Prompts:
   a. From your school, parents, chemist, online?
   b. How easy was it to get a test kit when you needed one?
   c. Is there anything that could have made it easier to get a test kit?

8. Do you think you will take regular COVID tests in future?
Prompts:
   a. If not, why not?
      i. Is there anything that might encourage you to get one?
   b. If yes, why?
   c. Would being vaccinated for COVID make any difference to your decision?

9. How important do you think it is to get regular COVID tests?
Prompts:
   a. For you personally?
      i. Why do you think that is?
   b. For other people where you live/go to school?
      i. Why do you think that is?
   c. How important is it for limiting the spread of COVID-19?
   d. Do you think you can catch COVID from someone with no symptoms?
   e. Do you think you can pass COVID on if you have no symptoms?

10. Is there anything else you would like to add that we have not already discussed?
**Standards for Reporting Qualitative Research (SRQR)**

*http://www.equator-network.org/reporting-guidelines/srqr/

<table>
<thead>
<tr>
<th>Title and abstract</th>
<th>Page/line no(s.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title</strong> - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended</td>
<td>Page 1, line 1</td>
</tr>
<tr>
<td><strong>Abstract</strong> - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions</td>
<td>Page 1, line 11-34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Introduction</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Problem formulation</strong> - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement</td>
<td>Page 3-4, lines 98-108</td>
</tr>
<tr>
<td><strong>Purpose or research question</strong> - Purpose of the study and specific objectives or questions</td>
<td>Page 4, lines 108-110</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Methods</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Qualitative approach and research paradigm</strong> - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**</td>
<td>Page 4, lines 119-121</td>
</tr>
<tr>
<td><strong>Researcher characteristics and reflexivity</strong> - Researchers’ characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers’ characteristics and the research questions, approach, methods, results, and/or transferability</td>
<td>Page 6, lines 162-165</td>
</tr>
<tr>
<td><strong>Context</strong> - Setting/site and salient contextual factors; rationale**</td>
<td>Page 3-4, lines 98-108</td>
</tr>
<tr>
<td><strong>Sampling strategy</strong> - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**</td>
<td>Page 4, lines 123-136</td>
</tr>
<tr>
<td><strong>Ethical issues pertaining to human subjects</strong> - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues</td>
<td>Page 18, lines 484-485</td>
</tr>
<tr>
<td><strong>Data collection methods</strong> - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**</td>
<td>Page 5, lines 143-148</td>
</tr>
</tbody>
</table>

For peer review only - http://bmjopen.bmj.com/site/about/guidelines.xhtml
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data collection instruments and technologies</strong></td>
<td>Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study</td>
<td></td>
</tr>
<tr>
<td><strong>Units of study</strong></td>
<td>Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)</td>
<td>Page 4, lines 124-128</td>
</tr>
<tr>
<td><strong>Data processing</strong></td>
<td>Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts</td>
<td>Page 5, lines 150-154</td>
</tr>
<tr>
<td><strong>Data analysis</strong></td>
<td>Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**</td>
<td>Page 5-6, lines 154-165.</td>
</tr>
<tr>
<td><strong>Techniques to enhance trustworthiness</strong></td>
<td>Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**</td>
<td>Page 6, lines 158-165.</td>
</tr>
<tr>
<td><strong>Results/findings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Synthesis and interpretation</strong></td>
<td>Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory</td>
<td>Page 6-11, lines 168-335</td>
</tr>
<tr>
<td><strong>Links to empirical data</strong></td>
<td>Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings</td>
<td>Page 6-11, lines 168-335</td>
</tr>
<tr>
<td><strong>Discussion</strong></td>
<td>Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field</td>
<td>Page 11, lines 337-386.</td>
</tr>
<tr>
<td><strong>Limitations</strong></td>
<td>Trustworthiness and limitations of findings</td>
<td>Page 15, lines 390-405</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Conflicts of interest</strong></td>
<td>Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed</td>
<td>Page 18, lines 496</td>
</tr>
<tr>
<td><strong>Funding</strong></td>
<td>Sources of funding and other support; role of funders in data collection, interpretation, and reporting</td>
<td>Page 18, lines 499</td>
</tr>
</tbody>
</table>

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.*
**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:
DOI: 10.1097/ACM.0000000000000388
Engagement with regular asymptomatic COVID-19 testing in young people in North West England: a qualitative focus group study

<table>
<thead>
<tr>
<th>Journal:</th>
<th>BMJ Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manuscript ID</td>
<td>bmjopen-2022-069591.R1</td>
</tr>
<tr>
<td>Article Type:</td>
<td>Original research</td>
</tr>
<tr>
<td>Date Submitted by Author:</td>
<td>30-May-2023</td>
</tr>
<tr>
<td>Complete List of Authors:</td>
<td>Thorpe, Lisa; UK Health Security Agency Carter, Holly; UK Health Security Agency, Behavioural Science and Insights Unit Robin, Charlotte; Cheshire and Merseyside HPT, Behavioural Science and Insights Unit</td>
</tr>
<tr>
<td>Primary Subject Heading:</td>
<td>Public health</td>
</tr>
<tr>
<td>Secondary Subject Heading:</td>
<td>Qualitative research, Infectious diseases</td>
</tr>
<tr>
<td>Keywords:</td>
<td>COVID-19, PUBLIC HEALTH, INFECTIOUS DISEASES, QUALITATIVE RESEARCH</td>
</tr>
</tbody>
</table>
I, the Submitting Author has the right to grant and does grant on behalf of all authors of the Work (as defined in the below author licence), an exclusive licence and/or a non-exclusive licence for contributions from authors who are: i) UK Crown employees; ii) where BMJ has agreed a CC-BY licence shall apply, and/or iii) in accordance with the terms applicable for US Federal Government officers or employees acting as part of their official duties; on a worldwide, perpetual, irrevocable, royalty-free basis to BMJ Publishing Group Ltd (“BMJ”) its licensees and where the relevant Journal is co-owned by BMJ to the co-owners of the Journal, to publish the Work in this journal and any other BMJ products and to exploit all rights, as set out in our licence.

The Submitting Author accepts and understands that any supply made under these terms is made by BMJ to the Submitting Author unless you are acting as an employee on behalf of your employer or a postgraduate student of an affiliated institution which is paying any applicable article publishing charge (“APC”) for Open Access articles. Where the Submitting Author wishes to make the Work available on an Open Access basis (and intends to pay the relevant APC), the terms of reuse of such Open Access shall be governed by a Creative Commons licence – details of these licences and which Creative Commons licence will apply to this Work are set out in our licence referred to above.

Other than as permitted in any relevant BMJ Author’s Self Archiving Policies, I confirm this Work has not been accepted for publication elsewhere, is not being considered for publication elsewhere and does not duplicate material already published. I confirm all authors consent to publication of this Work and authorise the granting of this licence.
Engagement with regular asymptomatic COVID-19 testing in young people in North West England: a qualitative focus group study

Lisa Thorpe¹, Holly Carter², Charlotte Robin*³

Behavioural Science and Insights Unit, UK Health Security Agency

*Corresponding author: charlotte.robin@ukhsa.gov.uk

Abstract

Objectives: Communities in North West England had some of the highest incidence of COVID-19, particularly in their younger populations. Test kits were provided to young people in Blackburn with Darwen to encourage regular testing and reduce COVID-19 transmission. The aim of this study was to identify barriers and facilitators to engaging in regular asymptomatic testing in young people.

Design: Focus groups.

Setting: Young people and parents of school-age children in North West England.

Participants: 14 participants aged 12-15 years, 13 participants aged 16-25 years and 9 participants who were parents of school-aged children.

Results: Six focus groups (36 participants) were conducted. Analysis identified young people were not against testing and many wanted to test to protect others; however, they felt their needs were not met when they were seeking information on the importance of testing and accessing tests. Young people also felt they wanted more autonomy to make decisions and access tests themselves, without having to rely on parents. Language barriers and challenges with the testing process, particularly reporting the results, were also identified as barriers for parents and young people. Parents were reluctant to test in the absence of symptoms and also noted that young people were very adaptable and testing became more acceptable to them as the pandemic progressed.

Conclusions: Tailored messaging for young people would help this group engage in regular testing and feel part of the COVID-19 response. Regular testing is not currently required in England, however it is important to understand barriers to engaging in testing for young people, as testing may be reintroduced in response to this or future pandemics.

Keywords: COVID-19, asymptomatic, testing, lateral flow test, young people, engagement, barriers
Strengths and limitations

- We worked with local youth and community organisations to recruit participants through trusted people, which helped facilitate open and honest discussion in the focus groups.
- Our study was limited to one region in North West England, which had some of the highest COVID-19 rates in the UK, therefore our findings may not be representative of other regions in the UK.
- Participants in the parent focus groups were predominantly female and Asian ethnicity; further work with parents of other ethnicities is required to ensure their views are represented.
Background

In January 2021, the Government announced the third national lockdown in England and began to roll out the use of regular asymptomatic testing as a strategy to help control the spread of COVID-19 [1]. COVID-19 tests were available for everyone with symptoms, however due to evidence of asymptomatic transmission [2] (Byambasuren) lateral flow tests (LFTs) were available and regular asymptomatic testing was advised. LFTs were provided to local councils to help protect those who were unable to work from home [1]. Between April 2021 and March 2022, LFTs were freely available to everyone in England and twice weekly asymptomatic testing was used as a strategy to allow restrictions to lift [3]. Individuals over the age of 16 could order lateral flow test kits from the Government website or collect them from local NHS pharmacies. Lateral flow test kits were also supplied to all educational settings and employment settings offering rapid testing [3]. With LFTs, results were provided on the test kit within 30 minutes of taking a test. Results should have been registered with an official government agency e.g. GOV.UK or NHS Test and Trace, however research suggests this was not done routinely [4].

In January 2022, despite a decrease in overall rates of Covid-19, there was a surge in case among children; nearly 12% of children under 11 and 6.5% of 11-16 year olds tested positive [5]. Areas in North West England saw some of the highest increases in COVID-19 cases in England during an outbreak of the Delta variant. In Blackburn with Darwen, the rise in COVID-19 cases due to the Delta variant was seen predominantly in those under 25 years of age [5], with outcomes from surge testing showing that confirmed cases in the under 25’s were over 50% higher than those aged 25 years and above [6]. While those under 25 years of age are at lower risk of serious illness from COVID-19, their behaviours may put them at higher risk of contracting and spreading the virus [7].

Many young people have experienced disruption to their education due to government lockdowns in England [8], and regular asymptomatic testing was introduced in many educational settings to help reduce COVID-19 transmission and enable young people to return to face-to-face education [9]. In addition to national guidance for everyone to engage in regular asymptomatic testing, in July 2021, Blackburn with Darwen Council provided all school children 16 years and under with seven lateral flow testing kits and an accompanying leaflet outlining the importance of testing regularly throughout the school holidays (Supplementary File 1). There is limited data on young people’s engagement with testing,
however one study including school children and university students identified communication, a sense of community and convenience were key facilitators to taking a test [10]. This study did not differentiate between younger children and older students and it is likely there are different practical barriers to testing for these groups. Further research from Australia indicated 1 in 5 parents would not take their child for testing if they had symptoms [11], suggesting there is a need to better understand testing intentions in young people and parents.

It is important that young people are able to follow COVID-19 testing guidelines and can access tests when needed, to reduce the spread of virus. Engaging in regular testing is particularly important for young people, as those aged 25 and younger are less likely to have as many vaccinations compared with those over 25 years of age [12], with older age groups being offered vaccinations before younger age groups.

To support young people to engage in regular testing, it is essential to understand young peoples’ and parents’ experiences of regular testing to inform policy and practice decisions. Although regular asymptomatic testing is currently only required in specific high-risk settings, regular testing in the general population is likely to be reintroduced if COVID-19 cases increase or if new variants are identified [13]. It is therefore important to understand the barriers and facilitators to young people engaging in testing. The aim of this study was to gain a better understanding of experiences of regular asymptomatic testing in young people aged 12-25 years and parents, including identifying barriers and facilitators to engaging in regular testing.

Method
Study design
Focus groups were carried out with young people aged 12-25 and parents of school aged children in Blackburn with Darwen, between 23 August and 5 October, 2021. Focus groups for the 12-15 year olds took place at a primary school, where participants were attending a summer school run by a local youth organisation. Focus groups for the 16-25 year olds took place at a local college and housing shelter. The parents focus group took place at a community centre where a regular parents support group was based. We undertook a qualitative approach to enable us to explore participants’ experience and perceptions of testing in depth. It was not possible to involve the public in the design, conduct or reporting of this study due to the responsive nature of the work.
Participants

Six focus groups were conducted (36 participants in total). Two focus groups were carried out with participants aged between 12 and 15 years (seven participants per focus group), three focus groups were carried out with participants aged between 16 and 25 years (three groups with four to five participants per group), and one focus group was carried out with parents (nine participants). We use the term “young people” throughout to describe the participants age 12-25 years, to take into account these participants include children and young adults. Demographic characteristics of participants are shown in Table 1.

Participants were recruited via youth organisations in Blackburn with Darwen. Organisations were identified through Blackburn with Darwen community networks using purposive sampling. Each organisation was contacted via email with a recruitment leaflet and participant information sheet to share with their members. Individuals who wanted to participate contacted the lead researcher directly via email. Parents of children under the age of 15 who wanted to participate contacted the lead researcher on behalf of their child. Written and/or verbal consent was obtained from all participants. Parents provided written consent for children under the age of 15 years and verbal consent from participants was also obtained at the start of the focus groups. Everyone who expressed an interest in participating in the study was invited to take part in a focus group.

Table 1. Demographic characteristics of focus group participants.

<table>
<thead>
<tr>
<th></th>
<th>12-15 years</th>
<th>16-25 years</th>
<th>Parents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>12.9</td>
<td>18.0</td>
<td>44.7</td>
</tr>
<tr>
<td>SD</td>
<td>1.1</td>
<td>1.5</td>
<td>10.1</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5 (36%)</td>
<td>5 (38%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Female</td>
<td>9 (64%)</td>
<td>8 (62%)</td>
<td>9 (100%)</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>6 (43%)</td>
<td>9 (69%)</td>
<td>1 (11%)</td>
</tr>
<tr>
<td>Asian</td>
<td>8 (57%)</td>
<td>3 (23%)</td>
<td>8 (89%)</td>
</tr>
</tbody>
</table>
Focus groups

Focus groups were used to ensure a wide range of experiences and attitudes were captured over a short space of time. A topic guide (Supplementary Files 2-4) with open-ended questions was used to ensure key areas were covered, but also allowing flexibility to explore new themes as they arose. The topic guide included questions on experiences of regular COVID-19 testing, sources of COVID-19 testing information and perceptions of the importance of COVID-19 testing in young people. Focus groups lasted up to one hour and participants were reimbursed for their time; adults received a £25 shopping voucher and children received a £10 shopping voucher.

Analysis

Focus groups were recorded using a digital recorder and transcribed verbatim. The facilitator also took notes during the focus groups, which helped inform the analysis. Data were depersonalised by removing any identifiable data (including names and locations) and imported into NVivo (QSR International, London, UK) for analysis. Data from all focus groups were analysed separately and outcomes from both the 12-15 years and 16-25 years focus groups were combined.

Data were analysed using an inductive approach [14] where the first author familiarised themselves with the data by listening to the audio and reading the transcripts for all the focus groups. An initial coding framework was developed based on coding four transcripts using an inductive approach i.e. codes were not decided a priori. Fieldnotes were used alongside the inductive coding to develop the themes. During this stage, ~10% of the data were independently coded by a second coder (CR) and meetings were held to discuss coding a reach consensus on a coding framework. The coding framework was then applied to the remaining transcripts by the lead author. This was done inductively to allow new codes to be added as the analysis progressed. The final themes were refined by all the authors. Focus groups were conducted by the lead author, a UKHSA employee. Participants were aware of this so reflexivity was used throughout the analysis to take into account any potential influence on participant responses.
Patient and Public Involvement

None.

Results

Seven main themes and six sub-themes were identified. These themes related to barriers and facilitators to engaging with regular asymptomatic testing, with five themes relating to barriers to engaging with testing and two themes relating to facilitators of engaging with testing. The main themes relating to barriers to testing were: conceptualisation of health and illness; young people’s lack of autonomy; unmet information needs (lack of information from trusted sources, lack of targeted information for young people, frustration with frequent changes to guidance); language barriers; and challenges with the testing process (parental challenges of testing their child, challenges with reporting results, fear of testing positive).

The main themes relating to facilitators to testing were protecting others and adapting to the situation.

Young people, particularly those under 16 years of age, depended on their parents or guardians to make decisions about testing. Their engagement with regular testing was therefore – in part – determined by how their parents or guardians viewed the policy. As such, the results we report here combine findings from the young people and parent focus groups where applicable, to demonstrate the integrated nature of how barriers and facilitators to testing arise in young people.

Conceptualisation of health and illness

For some parents in our study, testing was understood as something that was enacted in response to a child becoming ill, developing symptoms or being in close contact with a confirmed case. Unless these criteria were met, parents were reluctant for their child to take a test: “Just because, like, for no reason, just to get them tested?... I'm not really in favour with that” (Parent Focus Group). This suggests that for these parents, the way in which they conceptualised illness – as a state of experiencing symptoms – was not compatible with an asymptomatic testing policy, where testing is encouraged in the absence of symptoms.
Young people’s lack of autonomy

Despite requiring consent from their parents to take tests in school, young people under 16 discussed how they would welcome the autonomy to make their own decisions and access testing independently. Young people recognised that the only way they could access tests would be through their parents, but if tests were available to them directly, they would use them: “For people our age, we would have to go through our parents. But I know my sister did and she’s over 18. So, she just ordered it and it came through the post.” (12-15 years Focus Group 2).

Young people also suggested that tests should be made available from local shops to make them easier to access without having to rely on their parents or guardians: “Local shops could have a few. Because we can’t drive, can we? We can’t go where adults can go, and sometimes your adults are busy.” (12-15 years Focus Group 1).

Unmet information needs

Lack of information from trusted sources

While young people in our study wanted autonomy to make their own decisions about testing, they encountered barriers when seeking and understanding information about the testing programme. Some participants stated they had not seen information about testing, while those who had seen information noted that this was predominantly on social media, which was not viewed as a trusted source of information. Participants suggested that information aimed at young people from trusted sites would help encourage them to take a test; the Government and NHS websites were mentioned specifically: “[Information] come from a government website, or a trusted website. Not, like, a dodgy website” (16-25 years Focus Group 2). Some of the young people aged 12-15 years suggested that information should come from authority figures – the Prime Minister and government were mentioned specifically: “I’d listen more if it came from Boris Johnson.” (12-15 years Focus Group 2).

Lack of targeted information for young people

In both sets of focus groups (parents and young people), participants discussed how there was a lack of targeted information for young people. Some young people felt the information available did not apply to them: “I feel it’s more around the elderly...I feel like they’re being given information that applies to them, [rather] than us.” (16-25 years Focus Group 2).
These views were echoed in the parent focus groups, where some participants felt that a lack of engagement with young people resulted in them not following COVID-19 guidance: “they don’t really approach the younger generation. And that’s why they don’t wear masks in town” (Parent Focus Group).

Again, these views were reflected in the parent focus group where they discussed how information for the general public could be challenging for young people to understand: “Do you know the charts they have, or the media, it’s not really... I don’t think it’s kids-friendly, the way they write it… I think they need to be more kids-friendly. It's more adults” (Parent Focus Group).

**Frustration with frequent changes to guidance**

The frequent changes in government guidance on testing exacerbated confusion about testing in the absence of symptoms, particularly when messages about risk changed as the pandemic progressed: “They kept saying at the beginning, it doesn't affect children, children are safe, they don’t need to wear their masks. And now suddenly, when everyone's been vaccinated, now it's all aimed at children. Now children need to be careful. Why not before but now? It just seems a bit strange to me” (Parent Focus Group).

**Language barriers**

In addition to the lack of targeted information, some young people noted they found the way in which a positive test was indicated confusing: “When I first used the lateral flow test, it has C and T. And I didn’t understand what it meant. So, when I tested it, it said C. And C for me I thought it meant you have COVID.” (16-25 years Focus Group 3).

Some young people also discussed how those with English as a second language struggled to understand how to complete the test. It was suggested that testing instructions should be available in different languages: “For people who aren’t very fluent in English, they struggle a lot to understand how to do the test properly [...] For example in our Blackburn community, we live in a diverse community, where multiple people speak different languages. So, we have leaflets in the council with other languages that people can access.” (16-25 years Focus Group 3).
Young people in the study felt that information given about testing, including the instructions given in the test kits, included words they could not understand: “Sometimes they use proper scientific words as well... I don’t understand half of it” (12-15 years Focus Group 1). It was suggested that this type of information should be aimed specifically at young people: “They should do the same booklet that they do positioned to the little one, like a children version, because the words, I can barely understand them sometimes because they’re more like adult words. And they should use more pictures in the kids one and stuff” (12-15 years Focus Group 1).

Challenges with the testing process

Parental challenges of testing their child

Many parents found that it was difficult to do the test on young children and felt guilty about their child having to take a test: “I felt bad, because they were crying, obviously. Felt really bad, and I was blaming myself”. Some parents, specifically those with teenagers, did not trust their child to take the test on their own in case they did not take it properly: “When I do it, I make sure I do it. They're not allowed to do it, I do it, just to make sure.” (Parent Focus Group).

Challenges with reporting results

While many young people in the 16-25 years focus groups understood how to take a test, some were not aware that they needed to report the test result or how to do so. Some found recording the result difficult: “It’s quite difficult to record the test...you went through about... I went through about 20 different pages on the Government website just to record a test. So, after doing a test every three days, it just got too much to record all of them” (16-25 years Focus Group 3).

Similarly, some parents found it difficult to report the result of the test: “It was such a long procedure... I kept trying to put the details in, but it wouldn't...” (Parent Focus Group).

Digital exclusion was also identified as a barrier to reporting test results; some parents were unable to use a computer and preferred to report the results over the phone: “I like doing everything over the phone. I'm really bad with technology.” (Parent Focus Group).

Fear of testing positive
As well as challenges around taking the testing and reporting results, the implications of the test results were also highlighted as a potential barrier. Participants in the 12-15 years focus groups stated that they were not concerned about taking a test, but it was the outcome of the test that they feared the most: “That many people, they’re really ill and they’ve also died and stuff, so it’s scary that could happen to you as well.” (12-15 years Focus Group 1). Some participants stated that they were scared to take the test at first, but actually found the result more daunting: “she got tested, she was like, it was proper scary because I thought I might get it.” (12-15 years Focus Group 1).

Protecting others

The main facilitator of engagement with testing was motivation to protect other people. Many young people from both age groups stated that they would get a COVID-19 test to protect others: “For the safety of those around you, so if you’re not feeling too good or [you have] any of the symptoms you should go and get tested, for the people around you and not just for yourself” (12-15 years Focus Group 2). Some young people had caring responsibilities, which influenced their decision to take a test: “I’ve got a child. So, I have to think for my child as well as myself” (16-25 years Focus Group 1).

Many participants recognised that COVID-19 can be passed on without people showing any symptoms and felt that testing was important for stopping community transmission of COVID-19: “Keeping people safe as well... it’s just protecting the community” (12-15 years Focus Group 1). Some young people from the focus groups were aware of testing centres and surge testing happening in local communities, however there was some confusion over who was eligible for these testing services. Some young people were not aware that testing centres and surge testing were available for everyone and thought that these were only for older adults and key workers. Some parents chose to isolate and engage with testing before visiting more vulnerable family members: “The test was because my parents. Because if they’re over 60... so every time all of us, there’s four of us, so we all do the test every time before we went down to see mum and dad. Or we’d isolate for ten days, do the test, and then we’d go and see mum and dad” (Parent Focus Group).

Adapting to the situation
Some parents stated that despite children being scared about COVID-19 at the beginning of the pandemic, many have adapted to the situation and now take tests regularly: “For kids, there was a fear factor in the beginning, like the COVID tests and that, they were like, ugh. Because there's a personal space. But then kids adapt. And then after the once or twice we've done the test, they're like, oh mummy, I can do it myself now. So kids do adapt” (Parent Focus Group).

Discussion

In this study, we explored young peoples’ and parents’ attitudes and behaviours in relation to regular asymptomatic testing. Specifically, we examined any barriers or facilitators to engaging in regular asymptomatic testing. Overall, the young people in this study were not against COVID-19 testing and were concerned about spreading the virus to loved ones and their wider communities. They recognised that by taking a test they could contribute to stopping the spread of the virus. However, young people felt there was a lack of public health information aimed at their age group from trusted sources, suggesting that they felt excluded, despite being required to take part in regular asymptomatic testing.

Despite young peoples’ acknowledgement of the importance of testing, some parents were against regular asymptomatic testing for their children. Unless testing was required, for example in order to attend school, or their child was showing symptoms, most parents did not want their child to take part in regular testing. Previous research exploring parents’ views of the school testing programme found that a key barrier to testing was that parents were reluctant to test their children in the absence of symptoms [15]. Similarly, the parents in our study were reluctant to allow their child to take a test unless they were experiencing symptoms. This created a barrier for young people to take part in regular testing, as those under 16 years of age require the permission of an adult to take a test. In circumstances where young people want to take a test, they often lack the autonomy to do so. It is possible that the environment within which testing is offered to young people e.g. schools is influencing their decision making and could be one reason for the different in testing engagement between parents and young people. Further qualitative research with both parents and children would help us better understand this dynamic.

Our study also highlighted that young people felt that information about COVID-19 testing had not been aimed at their age group. Some information, including testing booklets, contained language that was too complicated and left them feeling excluded. Previous
research found that young people wanted to play an active part in the recovery from the pandemic, but felt that they needed more information that was directed at their age group, and a separate platform in which they could have their voices heard [16].

In our study, most young people stated that the information that they had seen about COVID-19 testing was mainly from social media, with many stating that they could not trust the information they had read. To help them feel recognised by those in authority, young people expressed a need for government messaging aimed at their age group. This finding supports previous research which highlighted that young people want simple, tailored messaging in public health campaigns that can be easily accessed by all ages [17]. This would help them feel like they are being included in political decisions and recognised in the COVID-19 response [17]. To ensure that young people are included in the public health response and engage in regular testing, the Government and Local Authorities should involve young people in the production of testing materials and messages to ensure that instructions are clear to follow and can be understood by those of a younger age. This recommendation supports learning from previous pandemics, which suggested that involving communities in the response can help shape social norms and enable public health messages to have a more powerful impact [18].

Young people felt strongly about protecting others in their community and this was stated as the main reason for taking a test. This finding supports previous research showing that young people had an awareness of the impact of the pandemic on the wider community, specifically elderly people, socially disadvantaged people and parents [19] and were willing to accept testing as a way of keeping others safe, especially when testing was recommended by health professionals [19]. This work was undertaken in a region with a high number of cases and therefore young people may have been more concerned about infecting others, compared with places where the incidence was lower. Previous research has highlighted that concern about Covid-19 and the impact to self and others contributed to willingness to test [20], as well as adherence to other public health measures such as self-isolation [4].

Our study therefore identified several barriers and facilitators to young people engaging with regular asymptomatic testing. Based on the barriers identified we were able to develop several recommendations for improving young people’s engagement with regular asymptomatic testing, should this be required in the future; these are presented in Table 2 below.
Table 2: Recommendations based on barriers to testing.

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptualising health and illness</td>
<td>Provide clear information about what asymptomatic transmission is and how testing can help reduce the risk of transmission.</td>
</tr>
<tr>
<td>Lack of autonomy</td>
<td>Provide local shops with testing kits. This will allow local residents that do not have online access or are unable to travel to their nearest chemist to get testing kits when needed.</td>
</tr>
<tr>
<td>Unmet information needs</td>
<td>Authority figures should provide clear messaging to young people about testing. This may help young people understand the importance of participating in regular testing. Government / NHS websites should provide targeted information about the importance of testing that is aimed at young people. This should be a separate page that includes language that is suitable for young people. It should include information on why young people should get tested, how they do it, what to do once they have completed the test and key information about COVID-19 (for example, case numbers and reasons for high case numbers, that are specific to their geographical area).</td>
</tr>
<tr>
<td>Language barriers relating to testing kits</td>
<td>Involve young people in the production of testing materials and messages to ensure that instructions are clear to follow and can be understood by those of a younger age.</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Make paper copies of testing messages and instruction booklets available in different languages so that they are inclusive to all. Having these only as digital copies excludes populations that are not able to access or understand digital devices. Provide clear instructions and pictures of what a positive and negative test look like, this should stop any confusion between the letters that are on the testing device. Involve young people in the production of testing materials and messages to ensure that instructions are clear to follow and can be understood by those of a younger age.</td>
<td></td>
</tr>
<tr>
<td>Challenges with the testing process</td>
<td>Provide clear instructions for how to report a test, including visual demonstrations such as videos. Provide alternative methods of reporting for those who do not have digital or online access.</td>
</tr>
</tbody>
</table>
| Fear of testing positive | Provide clear information on what it means to test positive. This should include information on support available to young people that need to self-isolate due to a positive test result. As results are received in the absence of a medical or trained professional, clear information aimed at young people should aim to eliminate any
fear or stigma that is associated with a positive test result.

Limitations

The North West, particularly Blackburn with Darwen, was one of the areas most affected by COVID-19. Blackburn with Darwen had high numbers of COVID-19 cases, particularly in their younger population. It was therefore important to understand why young people were not engaging in regular testing in this community, which is why we chose to focus on understanding the attitudes and behaviours of young people in this area. However, it should be noted that the study sample used is not necessarily representative of the wider UK population.

As part of the recruitment strategy for this study, we identified parent groups that were part of the same organisation that was used to recruit participants for the 12-15 years focus group. The benefit of using this strategy was that a good rapport had already been established in the organisation and this enabled a relaxed environment for open and honest communication, which allowed for rich data to be gathered. However, this strategy resulted in the parents who took part in the focus groups being predominately mothers/grandmothers who were of Asian ethnicity. They were therefore not necessarily representative of parents or grandparents of different ethnicities. Further research could explore to what extent the themes reported in this study are consistent amongst different ethnicities, across the country.

Conclusion

Young people are at increased risk of COVID-19 transmission, and regular asymptomatic testing could help to reduce the risk of young people catching and spreading COVID-19. However, there is a lack of information concerning young peoples’ engagement with regular testing. We identified that the main barriers to young people engaging with regular testing were unmet information needs and lack of autonomy in testing. These barriers could be
addressed by providing clear and targeted messages aimed at young people. Information aimed at young people should be available on government or NHS websites and include topics such as the importance of testing, how to complete a test, what to do once they have completed the test and key information about COVID-19. While young people are not currently being asked to engage in regular asymptomatic testing, it is important to understand the barriers that reduce young peoples’ engagement with testing as regular testing is likely to be part of future infectious disease outbreaks or pandemics.

Authors' contributions
LT, CR and HC designed the study. LT ran the focus groups. LT and CR analysed the data and drafted the manuscript. All authors reviewed the manuscript and approved the final content.

Competing interests
None declared.

Funding
This study received no specific funding.

Availability of data and materials
On request from the corresponding author.

Ethics approval and consent to participate
The study was approved by the Public Health England Research Ethics Governance Group (R&D 464).

Acknowledgements
We would like to express our gratitude to all the participants who shared their experiences of COVID-19 testing with us. We would also like to acknowledge Blackburn with Darwen Council Public Health team and local youth organisations, for their time and support with recruitment.

CR is affiliated to the National Institute for Health Research Health Protection Research Unit (NIHR HPRU) in Emerging and Zoonotic Infections at the University of Liverpool in partnership with UK HSA in collaboration with the Liverpool School of Tropical Medicine and The University of Oxford, the NIHR HPRU in Gastrointestinal Infections at the University of Liverpool in partnership with UK HSA, in collaboration with the University of Warwick and the NIHR HPRU in Behavioural Science and Evaluation at the University of Bristol, in partnership with UK HSA. C.R. is based at UK HSA.

HC is supported by the National Institute for Health Research Health Protection Research Unit (NIHR HPRU) in Emergency Preparedness and Response, a partnership between UK Health Security Agency (UKHSA), King’s College London and the University of East Anglia.

The views expressed are those of the author(s) and not necessarily those of the NIHR, UKHSA or the Department of Health and Social Care.

References


3. Department of Health and Social Care. Twice weekly rapid testing to be available to everyone in England (2021). Available online:

5. Williams S, Michie S, Pagel C, Squires A. The UK is an international outlier in its approach to covid in children. *BMJ* 2022; 376 :o327 doi:10.1136/bmj.o327


15. Taylor J., Carter H., & Robin C. (2022) Rapid thematic analysis of national online narratives of asymptomatic testing in schools. Available online: https://doi.org/10.21203/rs.3.rs-2517367/v1


HOLIDAY AND FOOD SUMMER 2021 (HAF)

The Holiday and Food (HAF) Summer scheme will be running again for 4 weeks this summer.

This programme offers free places in holiday clubs to children eligible for free school meals for the equivalent of at least four hours a day, four days a week for 4 weeks in the school summer holidays during 2021.

HAF programmes can offer so much – whether it is arts and crafts, music, sport, new friendships and wellbeing support – giving children fun activities as well as learning experiences throughout the summer holidays.

| ADVICE FOR... |

HIGH SCHOOL STUDENTS:

As schools break up, we are asking you to continue taking rapid lateral flow tests twice a week during the summer break.

This means that any positive cases can be identified quickly, which helps to prevent the virus being passed on. We want you to have a fun summer and ensure everyone stays safe.

By taking regular tests even if you have no symptoms, you can minimise the chances of putting your friends, family and others at risk.

If you need any more rapid tests, go to www.blackburn.gov.uk/get-a-test.

“I’m testing regularly because... I want to be able to socialise without worrying about being the reason someone else has to self-isolate.”

Lois, aged 14

PARENTS OF YOUNGER CHILDREN:

We urge parents and carers to carry out regular lateral flow tests, ideally twice weekly. This will help to identify any positive cases of Covid-19.

If you or your family test positive, you must follow self-isolation advice. Self-isolation means the family will not be able to leave the home.

See inside for more advice on self-isolation.

“I’m testing regularly because... I want to use my holiday to its max potential and have fun rather than having to isolate.”

Zainab, aged 17

Sessions are available from 10am till 2pm in 18 locations and lunch, snacks and refreshments are all provided.

All activities are delivered by fully trained staff and include: multi-sports, musical theatre and dance, arts and crafts, movie time, drama and music, board game madness, splash bubble and pop and much, much more!!

Visit www.getstuckin.org.uk to find out more about what is available in your area or to book your place.

Subject to the latest public health advice, our expectation is that all activities will operate face-to-face.

“I’m testing regularly because... I want to have a fun summer and play football with my friends.”

Jacob, aged 11

Visit www.blackburn.gov.uk for peer review only - http://bmjopen.bmj.com/site/about/guidelines.xhtml

www.blackburn.gov.uk
**WHERE CAN YOU GET A TEST?**

There are plenty of places where you can get rapid tests.

An up-to-date list of testing sites is on the Blackburn with Darwen Council website

**www.blackburn.gov.uk/get-a-test**

You can also order rapid test kits online via gov.uk, or collect from your local pharmacy and most local supermarkets and community centres.

**ADVICE IF YOU HAVE SYMPTOMS**

The common symptoms people experience when they have COVID-19 include:

- High temperature
- A new, continuous cough
- Loss or change to your sense of smell or taste

**Types of COVID Test**

There are different tests you can get to check if you have COVID-19.

The test you need depends on why you’re getting tested.

The 2 main tests are:

- PCR tests – mainly for people with symptoms, they’re sent to a lab to be checked.
- Rapid lateral flow tests – only for people who do not have symptoms. They give a result in 30 minutes.

**Regular tests if you do not have symptoms**

Anyone without symptoms can use regular rapid lateral flow tests, to help keep our loved ones safe.

"I'm testing regularly because... I want to have confidence in interacting with my friends & family over the summer holidays, ensuring that I am keeping them and the community safe.

Muhammad, aged 15"

**Been asked to self isolate?**

If you have had recent close contact with someone who tests positive for Covid, you need to self-isolate for 10 days from the day you were in close contact.

This means staying at home and not going out at all - not even for activities like sports/dance practice or religious education.

If you then develop symptoms of Coronavirus:

- You and your household must self-isolate for 10 days
- You must still complete your original 10 day isolation
- Your household can stop isolating immediately - if they feel well

Anyone who has previously tested positive for Covid-19 is advised not to re-test within 90 days of getting a positive result, unless they develop any new symptoms of Covid-19.
Regular asymptomatic testing engagement in young people in North West England

Parents

Focus Group Guide

1. Has your child ever had a COVID-19 test?

Prompts:
   a. If not, why not?
   b. If so, why did they get tested?
      i. Requirement for education/youth groups, had symptoms, someone you had contact with had symptoms, concerned about getting COVID or passing it onto others?
   c. Do you know what type of test they took?
      i. Lateral flow or PCR?
   d. Who provided them with the test?
   e. How did they know what type of test to take?
   f. How easy or difficult was it for them to take the test?
   g. Roughly how many tests/how frequently have they had COVID tests

2. Did others know that they were getting a test?

Prompts:
   a. If so, what did your friends/family think of them getting tested?

3. Did you report the result?

Prompt:
   a. Did you tell anyone else of the test result?
   b. Did they tell anyone else of the test result?
   c. Have you taken tests and not reported results?

4. Have you or your child ever tested positive COVID-19?
   a. how did that make you feel?
      i. Concern about what others might think?
      ii. Time off work/school?

5. If your child has never taken a COVID-19 test, can you tell me why not?

Prompts:
   a. Did you know you could get a test?
   b. Did you know where to get a test from?
   c. Did you have any concerns about the test result?
   d. Were you concerned about what your friends/family might think?
6. **What information have you heard or seen about regular COVID testing?**

Prompts:

a. Was the information specifically informing you about regular testing in young people?

b. Where did you see/hear it – social media, work, school, friends/family?

c. Was the information useful?

d. Do you feel that the information applies to you?

e. Are there sources of information you trust more than others?

f. Do you feel like you need more information?

   i. If so, what would be helpful?

7. **Can you tell me how you would get a test kit for regular COVID testing?**

Prompts:

a. From your school or workplace, parents, chemist, online?

b. How easy was it to get a test kit when you needed one?

c. Is there anything that could have made it easier to get a test kit?

8. **Do you think you will ask your child to take regular COVID tests in future?**

Prompts:

a. If not, why not?

   i. Is there anything that might encourage you to get one?

b. If yes, why?

c. Would being vaccinated for COVID make any difference to your decision?

9. **How important do you think it is to get regular COVID tests for you child?**

Prompts:

a. For you personally?

   i. Why do you think that is?

b. For other people where you live/work/go to school?

   i. Why do you think that is?

   c. How important is it for limiting the spread of COVID-19?

   d. Do you think you can catch COVID from someone with no symptoms?

   e. Do you think you can pass COVID on if you have no symptoms?

10. **Is there anything else you would like to add that we have not already discussed?**
Regular asymptomatic testing engagement in young people in North West England
16-25 years old
Focus Group Guide

1. Have you ever had a COVID-19 test?
Prompts:
   a. If not, why not?
   b. If so, why did you decide to get tested?
       i. Requirement for work, education, had symptoms, someone you had contact
          with had symptoms, concerned about getting COVID or passing it onto
          others?
   c. Do you know what type of test you took?
       i. Lateral flow or PCR?
   d. How did you know what type of test to take?
   e. How easy or difficult was it taking the test?
   f. Roughly how many tests/how frequently have you had COVID tests?

2. Did others know you were getting a test?
Prompts:
   a. If so, what did your friends/family think of you getting tested?

3. Did you report the result?
Prompt:
   a. Did you tell anyone else of the test result?
   b. Have you taken tests and not reported results?

4. Have you ever tested positive COVID-19?
   a. how did that make you feel?
       i. Concern about what others might think?
       ii. Time off work/school?

5. If you have never taken a COVID-19 test, can you tell me why not?
Prompts:
   a. Did you know you could get a test?
   b. Did you know where to get a test from?
   c. Did you have any concerns about the test result?
   d. Were you concerned about what your friends/family might think?

6. What information have you heard or seen about regular COVID testing?
Prompts:

a. Where did you see/hear it – social media, work, school, friends/family?

b. Was the information useful?

c. Do you feel that the information applies to you?

d. Are there sources of information you trust more than others?

e. Do you feel like you need more information?
   i. If so, what would be helpful?

7. Can you tell me how you would get a test kit for regular COVID testing?

Prompts:

a. From your school or workplace, parents, chemist, online?

b. How easy was it to get a test kit when you needed one?

c. Is there anything that could have made it easier to get a test kit?

8. Do you think you will take regular COVID tests in future?

Prompts:

a. If not, why not?
   i. Is there anything that might encourage you to get one?

b. If yes, why?

c. Would being vaccinated for COVID make any difference to your decision?

9. How important do you think it is to get regular COVID tests?

Prompts:

a. For you personally?
   i. Why do you think that is?

b. For other people where you live/work/go to school?
   i. Why do you think that is?

c. How important is it for limiting the spread of COVID-19?

d. Do you think you can catch COVID from someone with no symptoms?

e. Do you think you can pass COVID on if you have no symptoms?

10. Is there anything else you would like to add that we have not already discussed?
Regular asymptomatic testing engagement in young people in North West England

12-15 years old

Focus Group Guide

1. Have you ever had a COVID-19 test?
   Prompts:
   a. If not, why not?
   b. If so, why did you decide to get tested?
      i. School, youth club, had symptoms, someone you had contact with had symptoms, parents?
   c. Do you know what type of test you took?
      i. Lateral flow or PCR?
   d. How did you know what type of test to take?
   e. How easy or difficult was it taking the test?
   f. Roughly how many tests/how frequently have you had COVID tests

2. Did others know you were getting a test?
   Prompts:
   a. If so, what did your friends/family think of you getting tested?

3. Did you (or your parent) report the result?
   Prompt:
   a. Did you tell anyone else of the test result?
   b. Have you taken tests and not reported results?

4. Have you ever tested positive for COVID-19?
   a. How did that make you feel?
      i. Concern about what others might think?
      ii. Time off school?

5. If you have never taken a COVID-19 test, can you tell me why not?
   Prompts:
   a. Did you know who to ask to get a test?
   b. Did you know where to get a test from?
   c. Did you have any concerns about the test?
   d. Were you concerned about what your friends/family might think?

6. What information have you heard or seen about regular COVID testing?
   Prompts:
a. Where did you see/hear it – social media, school, friends/family?
b. Was the information useful?
c. Do you feel that the information applies to you?
d. Are there sources of information you trust more than others?
e. Do you feel like you need more information?
   i. If so, what would be helpful?

7. Can you tell me how you would get a test kit for regular COVID testing?
Prompts:
a. From your school, parents, chemist, online?
b. How easy was it to get a test kit when you needed one?
c. Is there anything that could have made it easier to get a test kit?

8. Do you think you will take regular COVID tests in future?
Prompts:
a. If not, why not?
   i. Is there anything that might encourage you to get one?
b. If yes, why?
c. Would being vaccinated for COVID make any difference to your decision?

9. How important do you think it is to get regular COVID tests?
Prompts:
a. For you personally?
   i. Why do you think that is?
b. For other people where you live/go to school?
   i. Why do you think that is?
c. How important is it for limiting the spread of COVID-19?
d. Do you think you can catch COVID from someone with no symptoms?
e. Do you think you can pass COVID on if you have no symptoms?

10. Is there anything else you would like to add that we have not already discussed?
### Standards for Reporting Qualitative Research (SRQR)*

*http://www.equator-network.org/reporting-guidelines/srqr/

<table>
<thead>
<tr>
<th><strong>Title and abstract</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title</strong> - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended</td>
<td>Page 1, line 1</td>
</tr>
<tr>
<td><strong>Abstract</strong> - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions</td>
<td>Page 1, line 11-34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Introduction</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Problem formulation</strong> - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement</td>
<td>Page 3-4, lines 98-108</td>
</tr>
<tr>
<td><strong>Purpose or research question</strong> - Purpose of the study and specific objectives or questions</td>
<td>Page 4, lines 108-110</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Methods</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Qualitative approach and research paradigm</strong> - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/interpretivist) is also recommended; rationale**</td>
<td>Page 4, lines 119-121</td>
</tr>
<tr>
<td><strong>Researcher characteristics and reflexivity</strong> - Researchers’ characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers’ characteristics and the research questions, approach, methods, results, and/or transferability</td>
<td>Page 6, lines 162-165</td>
</tr>
<tr>
<td><strong>Context</strong> - Setting/site and salient contextual factors; rationale**</td>
<td>Page 3-4, lines 98-108</td>
</tr>
<tr>
<td><strong>Sampling strategy</strong> - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**</td>
<td>Page 4, lines 123-136</td>
</tr>
<tr>
<td><strong>Ethical issues pertaining to human subjects</strong> - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues</td>
<td>Page 18, lines 484-485</td>
</tr>
<tr>
<td><strong>Data collection methods</strong> - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**</td>
<td>Page 5, lines 143-148</td>
</tr>
</tbody>
</table>

*Supplementary Files 2-4
**Data collection instruments and technologies** - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study

**Units of study** - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)

**Data processing** - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts

**Data analysis** - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale

**Techniques to enhance trustworthiness** - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale

**Results/findings**

**Synthesis and interpretation** - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory

**Links to empirical data** - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings

**Discussion**

**Integration with prior work, implications, transferability, and contribution(s) to the field** - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field

**Limitations** - Trustworthiness and limitations of findings

**Other**

**Conflicts of interest** - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed

**Funding** - Sources of funding and other support; role of funders in data collection, interpretation, and reporting

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.*
**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:
DOI: 10.1097/ACM.0000000000000388
**Engagement with regular asymptomatic COVID-19 testing in young people in North West England: a qualitative focus group study**

<table>
<thead>
<tr>
<th>Journal:</th>
<th>BMJ Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manuscript ID</td>
<td>bmjopen-2022-069591.R2</td>
</tr>
<tr>
<td>Article Type:</td>
<td>Original research</td>
</tr>
<tr>
<td>Date Submitted by the Author:</td>
<td>16-Jun-2023</td>
</tr>
<tr>
<td>Complete List of Authors:</td>
<td>Thorpe, Lisa; UK Health Security Agency Carter, Holly; UK Health Security Agency, Behavioural Science and Insights Unit Robin, Charlotte; Cheshire and Merseyside HPT, Behavioural Science and Insights Unit</td>
</tr>
<tr>
<td>Primary Subject Heading:</td>
<td>Public health</td>
</tr>
<tr>
<td>Secondary Subject Heading:</td>
<td>Qualitative research, Infectious diseases</td>
</tr>
<tr>
<td>Keywords:</td>
<td>COVID-19, PUBLIC HEALTH, INFECTIOUS DISEASES, QUALITATIVE RESEARCH</td>
</tr>
</tbody>
</table>
I, the Submitting Author has the right to grant and does grant on behalf of all authors of the Work (as defined in the below author licence), an exclusive licence and/or a non-exclusive licence for contributions from authors who are: i) UK Crown employees; ii) where BMJ has agreed a CC-BY licence shall apply, and/or iii) in accordance with the terms applicable for US Federal Government officers or employees acting as part of their official duties; on a worldwide, perpetual, irrevocable, royalty-free basis to BMJ Publishing Group Ltd (“BMJ”) its licensees and where the relevant Journal is co-owned by BMJ to the co-owners of the Journal, to publish the Work in this journal and any other BMJ products and to exploit all rights, as set out in our licence.

The Submitting Author accepts and understands that any supply made under these terms is made by BMJ to the Submitting Author unless you are acting as an employee on behalf of your employer or a postgraduate student of an affiliated institution which is paying any applicable article publishing charge (“APC”) for Open Access articles. Where the Submitting Author wishes to make the Work available on an Open Access basis (and intends to pay the relevant APC), the terms of reuse of such Open Access shall be governed by a Creative Commons licence – details of these licences and which Creative Commons licence will apply to this Work are set out in our licence referred to above.

Other than as permitted in any relevant BMJ Author’s Self Archiving Policies, I confirm this Work has not been accepted for publication elsewhere, is not being considered for publication elsewhere and does not duplicate material already published. I confirm all authors consent to publication of this Work and authorise the granting of this licence.
Engagement with regular asymptomatic COVID-19 testing in young people in North West England: a qualitative focus group study

Lisa Thorpe¹, Holly Carter², Charlotte Robin*³
Behavioural Science and Insights Unit, UK Health Security Agency

*Corresponding author: charlotte.robin@ukhsa.gov.uk

Abstract

Objectives: Communities in North West England had some of the highest incidence of COVID-19, particularly in their younger populations. Test kits were provided to young people in Blackburn with Darwen to encourage regular testing and reduce COVID-19 transmission. The aim of this study was to identify barriers and facilitators to engaging in regular asymptomatic testing in young people.

Design: Focus groups.

Setting: Young people and parents of school-age children in North West England.

Participants: 14 participants aged 12-15 years, 13 participants aged 16-25 years and 9 participants who were parents of school-aged children.

Results: Six focus groups (36 participants) were conducted. Analysis identified young people were not against testing and many wanted to test to protect others; however, they felt their needs were not met when they were seeking information on the importance of testing and accessing tests. Young people also felt they wanted more autonomy to make decisions and access tests themselves, without having to rely on parents. Language barriers and challenges with the testing process, particularly reporting the results, were also identified as barriers for parents and young people. Parents were reluctant to test in the absence of symptoms and also noted that young people were very adaptable and testing became more acceptable to them as the pandemic progressed.

Conclusions: Tailored messaging for young people would help this group engage in regular testing and feel part of the COVID-19 response. Regular testing is not currently required in England, however it is important to understand barriers to engaging in testing for young people, as testing may be reintroduced in response to this or future pandemics.

Keywords:
COVID-19, asymptomatic, testing, lateral flow test, young people, engagement, barriers
Strengths and limitations

- We worked with local youth and community organisations to recruit participants through trusted people, which helped facilitate open and honest discussion in the focus groups.

- Our study was limited to one region in North West England, which had some of the highest COVID-19 rates in the UK, therefore our findings may not be representative of other regions in the UK.

- Participants in the parent focus groups were predominantly female and Asian ethnicity; further work with parents of other ethnicities is required to ensure their views are represented.
Background

In January 2021, the Government announced the third national lockdown in England and began to roll out the use of regular asymptomatic testing as a strategy to help control the spread of COVID-19 [1]. COVID-19 tests were available for everyone with symptoms, however due to evidence of asymptomatic transmission [2] (Byambasuren) lateral flow tests (LFTs) were available and regular asymptomatic testing was advised. LFTs were provided to local councils to help protect those who were unable to work from home [1]. Between April 2021 and March 2022, LFTs were freely available to everyone in England and twice weekly asymptomatic testing was used as a strategy to allow restrictions to lift [3]. Individuals over the age of 16 could order lateral flow test kits from the Government website or collect them from local NHS pharmacies. Lateral flow test kits were also supplied to all educational settings and employment settings offering rapid testing [3]. With LFTs, results were provided on the test kit within 30 minutes of taking a test. Results should have been registered with an official government agency e.g. GOV.UK or NHS Test and Trace, however research suggests this was not done routinely [4].

In January 2022, despite a decrease in overall rates of Covid-19, there was a surge in cases among children; nearly 12% of children under 11 and 6.5% of 11-16 year olds tested positive [5]. Areas in North West England saw some of the highest increases in COVID-19 cases in England during an outbreak of the Delta variant. In Blackburn with Darwen, the rise in COVID-19 cases due to the Delta variant was seen predominantly in those under 25 years of age [5], with outcomes from surge testing showing that confirmed cases in the under 25’s were over 50% higher than those aged 25 years and above [6]. While those under 25 years of age are at lower risk of serious illness from COVID-19, their behaviours may put them at higher risk of contracting and spreading the virus [7].

Many young people have experienced disruption to their education due to government lockdowns in England [8], and regular asymptomatic testing was introduced in many educational settings to help reduce COVID-19 transmission and enable young people to return to face-to-face education [9]. In addition to national guidance for everyone to engage in regular asymptomatic testing, in July 2021, Blackburn with Darwen Council provided all school children 16 years and under with seven lateral flow testing kits and an accompanying leaflet outlining the importance of testing regularly throughout the school holidays (available on request from corresponding author). There is limited data on young people’s engagement...
with testing, however one study including school children and university students identified communication, a sense of community and convenience were key facilitators to taking a test [10]. This study did not differentiate between younger children and older students and it is likely there are different practical barriers to testing for these groups. Further research from Australia indicated 1 in 5 parents would not take their child for testing if they had symptoms [11], suggesting there is a need to better understand testing intentions in young people and parents.

It is important that young people are able to follow COVID-19 testing guidelines and can access tests when needed, to reduce the spread of virus. Engaging in regular testing is particularly important for young people, as those aged 25 and younger are less likely to have as many vaccinations compared with those over 25 years of age [12], with older age groups being offered vaccinations before younger age groups.

To support young people to engage in regular testing, it is essential to understand young peoples’ and parents’ experiences of regular testing to inform policy and practice decisions. Although regular asymptomatic testing is currently only required in specific high-risk settings, regular testing in the general population is likely to be reintroduced if COVID-19 cases increase or if new variants are identified [13]. It is therefore important to understand the barriers and facilitators to young people engaging in testing. The aim of this study was to gain a better understanding of experiences of regular asymptomatic testing in young people aged 12-25 years and parents, including identifying barriers and facilitators to engaging in regular testing.

Method

Study design

Focus groups were carried out with young people aged 12-25 and parents of school aged children in Blackburn with Darwen, between 23 August and 5 October, 2021. Focus groups for the 12-15 year olds took place at a primary school, where participants were attending a summer school run by a local youth organisation. Focus groups for the 16-25 year olds took place at a local college and housing shelter. The parents focus group took place at a community centre where a regular parents support group was based. We undertook a qualitative approach to enable us to explore participants’ experience and perceptions of testing in depth. It was not possible to involve the public in the design, conduct or reporting of this study due to the responsive nature of the work.
Participants

Six focus groups were conducted (36 participants in total). Two focus groups were carried out with participants aged between 12 and 15 years (seven participants per focus group), three focus groups were carried out with participants aged between 16 and 25 years (three groups with four to five participants per group), and one focus group was carried out with parents (nine participants). We use the term “young people” throughout to describe the participants aged 12-25 years, to take into account these participants include children and young adults. Demographic characteristics of participants are shown in Table 1.

Participants were recruited via youth organisations in Blackburn with Darwen. Organisations were identified through Blackburn with Darwen community networks using purposive sampling. Each organisation was contacted via email with a recruitment leaflet and participant information sheet to share with their members. Individuals who wanted to participate contacted the lead researcher directly via email. Parents of children under the age of 15 who wanted to participate contacted the lead researcher on behalf of their child. Written and/or verbal consent was obtained from all participants. Parents provided written consent for children under the age of 15 years and verbal consent from participants was also obtained at the start of the focus groups. Everyone who expressed an interest in participating in the study was invited to take part in a focus group.

Table 1. Demographic characteristics of focus group participants.

<table>
<thead>
<tr>
<th></th>
<th>12-15 years</th>
<th>16-25 years</th>
<th>Parents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>12.9</td>
<td>18.0</td>
<td>44.7</td>
</tr>
<tr>
<td>SD</td>
<td>1.1</td>
<td>1.5</td>
<td>10.1</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5 (36%)</td>
<td>5 (38%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Female</td>
<td>9 (64%)</td>
<td>8 (62%)</td>
<td>9 (100%)</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>6 (43%)</td>
<td>9 (69%)</td>
<td>1 (11%)</td>
</tr>
<tr>
<td>Asian</td>
<td>8 (57%)</td>
<td>3 (23%)</td>
<td>8 (89%)</td>
</tr>
</tbody>
</table>
Focus groups

Focus groups were used to ensure a wide range of experiences and attitudes were captured over a short space of time. A topic guide (Supplementary Files 1-3) with open-ended questions was used to ensure key areas were covered, but also allowing flexibility to explore new themes as they arose. The topic guide included questions on experiences of regular COVID-19 testing, sources of COVID-19 testing information and perceptions of the importance of COVID-19 testing in young people. Focus groups lasted up to one hour and participants were reimbursed for their time; adults received a £25 shopping voucher and children received a £10 shopping voucher.

Analysis

Focus groups were recorded using a digital recorder and transcribed verbatim. The facilitator also took notes during the focus groups, which helped inform the analysis. Data were depersonalised by removing any identifiable data (including names and locations) and imported into NVivo (QSR International, London, UK) for analysis. Data from all focus groups were analysed separately and outcomes from both the 12-15 years and 16-25 years focus groups were combined.

Data were analysed using an inductive approach [14] where the first author familiarised themselves with the data by listening to the audio and reading the transcripts for all the focus groups. An initial coding framework was developed based on coding four transcripts using an inductive approach i.e. codes were not decided a priori. Fieldnotes were used alongside the inductive coding to develop the themes. During this stage, ~10% of the data were independently coded by a second coder (CR) and meetings were held to discuss coding and reach consensus on a coding framework. The coding framework was then applied to the remaining transcripts by the lead author. This was done inductively to allow new codes to be added as the analysis progressed. The final themes were refined by all the authors. Focus groups were conducted by the lead author, a UKHSA employee. Participants were aware of this so reflexivity was used throughout the analysis to take into account any potential influence on participant responses.
Patient and Public Involvement

None.

Results

Seven main themes and six sub-themes were identified. These themes related to barriers and facilitators to engaging with regular asymptomatic testing, with five themes relating to barriers to engaging with testing and two themes relating to facilitators of engaging with testing. The main themes relating to barriers to testing were: conceptualisation of health and illness; young people’s lack of autonomy; unmet information needs (lack of information from trusted sources, lack of targeted information for young people, frustration with frequent changes to guidance); language barriers; and challenges with the testing process (parental challenges of testing their child, challenges with reporting results, fear of testing positive).

The main themes relating to facilitators to testing were protecting others and adapting to the situation.

Young people, particularly those under 16 years of age, depended on their parents or guardians to make decisions about testing. Their engagement with regular testing was therefore – in part – determined by how their parents or guardians viewed the policy. As such, the results we report here combine findings from the young people and parent focus groups where applicable, to demonstrate the integrated nature of how barriers and facilitators to testing arise in young people.

Conceptualisation of health and illness

For some parents in our study, testing was understood as something that was enacted in response to a child becoming ill, developing symptoms or being in close contact with a confirmed case. Unless these criteria were met, parents were reluctant for their child to take a test: “Just because, like, for no reason, just to get them tested?... I'm not really in favour with that” (Parent Focus Group). This suggests that for these parents, the way in which they conceptualised illness – as a state of experiencing symptoms – was not compatible with an asymptomatic testing policy, where testing is encouraged in the absence of symptoms.
Young people’s lack of autonomy

Despite requiring consent from their parents to take tests in school, young people under 16 discussed how they would welcome the autonomy to make their own decisions and access testing independently. Young people recognised that the only way they could access tests would be through their parents, but if tests were available to them directly, they would use them: “For people our age, we would have to go through our parents. But I know my sister did and she’s over 18. So, she just ordered it and it came through the post.” (12-15 years Focus Group 2).

Young people also suggested that tests should be made available from local shops to make them easier to access without having to rely on their parents or guardians: “Local shops could have a few. Because we can’t drive, can we? We can’t go where adults can go, and sometimes your adults are busy.” (12-15 years Focus Group 1).

Unmet information needs

Lack of information from trusted sources

While young people in our study wanted autonomy to make their own decisions about testing, they encountered barriers when seeking and understanding information about the testing programme. Some participants stated they had not seen information about testing, while those who had seen information noted that this was predominantly on social media, which was not viewed as a trusted source of information. Participants suggested that information aimed at young people from trusted sites would help encourage them to take a test; the Government and NHS websites were mentioned specifically: “[Information] come from a government website, or a trusted website. Not, like, a dodgy website” (16-25 years Focus Group 2). Some of the young people aged 12-15 years suggested that information should come from authority figures – the Prime Minister and government were mentioned specifically: “I’d listen more if it came from Boris Johnson.” (12-15 years Focus Group 2).

Lack of targeted information for young people

In both sets of focus groups (parents and young people), participants discussed how there was a lack of targeted information for young people. Some young people felt the information available did not apply to them: “I feel it’s more around the elderly…I feel like they’re being given information that applies to them, [rather] than us.” (16-25 years Focus Group 2).
These views were echoed in the parent focus groups, where some participants felt that a lack of engagement with young people resulted in them not following COVID-19 guidance: “they don’t really approach the younger generation. And that’s why they don’t wear masks in town” (Parent Focus Group).

Again, these views were reflected in the parent focus group where they discussed how information for the general public could be challenging for young people to understand: “Do you know the charts they have, or the media, it’s not really... I don’t think it's kids-friendly, the way they write it... I think they need to be more kids-friendly. It's more adults” (Parent Focus Group).

**Frustration with frequent changes to guidance**

The frequent changes in government guidance on testing exacerbated confusion about testing in the absence of symptoms, particularly when messages about risk changed as the pandemic progressed: “They kept saying at the beginning, it doesn’t affect children, children are safe, they don’t need to wear their masks. And now suddenly, when everyone’s been vaccinated, now it’s all aimed at children. Now children need to be careful. Why not before but now? It just seems a bit strange to me” (Parent Focus Group).

**Language barriers**

In addition to the lack of targeted information, some young people noted they found the way in which a positive test was indicated confusing: “When I first used the lateral flow test, it has C and T. And I didn’t understand what it meant. So, when I tested it, it said C. And C for me I thought it meant you have COVID.” (16-25 years Focus Group 3). For the LFTs used at the time, “C” indicated control and was used to show the test was working correctly.

Some young people also discussed how those with English as a second language struggled to understand how to complete the test. It was suggested that testing instructions should be available in different languages: “For people who aren’t very fluent in English, they struggle a lot to understand how to do the test properly [...] For example in our Blackburn community, we live in a diverse community, where multiple people speak different languages. So, we have leaflets in the council with other languages that people can access.” (16-25 years Focus Group 3).
Young people in the study felt that information given about testing, including the instructions given in the test kits, included words they could not understand: “Sometimes they use proper scientific words as well... I don’t understand half of it” (12-15 years Focus Group 1). It was suggested that this type of information should be aimed specifically at young people: “They should do the same booklet that they do positioned to the little one, like a children version, because the words, I can barely understand them sometimes because they’re more like adult words. And they should use more pictures in the kids one and stuff” (12-15 years Focus Group 1).

Challenges with the testing process

Parental challenges of testing their child

Many parents found that it was difficult to do the test on young children and felt guilty about their child having to take a test: “I felt bad, because they were crying, obviously. Felt really bad, and I was blaming myself”. Some parents, specifically those with teenagers, did not trust their child to take the test on their own in case they did not take it properly: “When I do it, I make sure I do it. They're not allowed to do it, I do it, just to make sure.” (Parent Focus Group).

Challenges with reporting results

While many young people in the 16-25 years focus groups understood how to take a test, some were not aware that they needed to report the test result or how to do so. Some found recording the result difficult: “It’s quite difficult to record the test...you went through about... I went through about 20 different pages on the Government website just to record a test. So, after doing a test every three days, it just got too much to record all of them” (16-25 years Focus Group 3).

Similarly, some parents found it difficult to report the result of the test: “It was such a long procedure... I kept trying to put the details in, but it wouldn't...” (Parent Focus Group).

Digital exclusion was also identified as a barrier to reporting test results; some parents were unable to use a computer and preferred to report the results over the phone: “I like doing everything over the phone. I'm really bad with technology.” (Parent Focus Group).

Fear of testing positive
As well as challenges around taking the testing and reporting results, the implications of the test results were also highlighted as a potential barrier. Participants in the 12-15 years focus groups stated that they were not concerned about taking a test, but it was the outcome of the test that they feared the most: “That many people, they’re really ill and they’ve also died and stuff, so it’s scary that could happen to you as well.” (12-15 years Focus Group 1). Some participants stated that they were scared to take the test at first, but actually found the result more daunting: “she got tested, she was like, it was proper scary because I thought I might get it.” (12-15 years Focus Group 1).

Protecting others

The main facilitator of engagement with testing was motivation to protect other people. Many young people from both age groups stated that they would get a COVID-19 test to protect others: “For the safety of those around you, so if you’re not feeling too good or [you have] any of the symptoms you should go and get tested, for the people around you and not just for yourself” (12-15 years Focus Group 2). Some young people had caring responsibilities, which influenced their decision to take a test: “I’ve got a child. So, I have to think for my child as well as myself” (16-25 years Focus Group 1).

Many participants recognised that COVID-19 can be passed on without people showing any symptoms and felt that testing was important for stopping community transmission of COVID-19: “Keeping people safe as well… it’s just protecting the community” (12-15 years Focus Group 1). Some young people from the focus groups were aware of testing centres and surge testing happening in local communities, however there was some confusion over who was eligible for these testing services. Some young people were not aware that testing centres and surge testing were available for everyone and thought that these were only for older adults and key workers.

Some parents chose to isolate and engage with testing before visiting more vulnerable family members: “The test was because my parents. Because if they’re over 60… so every time all of us, there’s four of us, so we all do the test every time before we went down to see mum and dad. Or we’d isolate for ten days, do the test, and then we’d go and see mum and dad” (Parent Focus Group).

Adapting to the situation
Some parents stated that despite children being scared about COVID-19 at the beginning of the pandemic, many have adapted to the situation and now take tests regularly: “For kids, there was a fear factor in the beginning, like the COVID tests and that, they were like, ugh. Because there’s a personal space. But then kids adapt. And then after the once or twice we’ve done the test, they’re like, oh mummy, I can do it myself now. So kids do adapt” (Parent Focus Group).

Discussion

In this study, we explored young peoples’ and parents’ attitudes and behaviours in relation to regular asymptomatic testing. Specifically, we examined any barriers or facilitators to engaging in regular asymptomatic testing. Overall, the young people in this study were not against COVID-19 testing and were concerned about spreading the virus to loved ones and their wider communities. They recognised that by taking a test they could contribute to stopping the spread of the virus. However, young people felt there was a lack of public health information aimed at their age group from trusted sources, suggesting that they felt excluded, despite being required to take part in regular asymptomatic testing.

Despite young peoples’ acknowledgement of the importance of testing, some parents were against regular asymptomatic testing for their children. Unless testing was required, for example in order to attend school, or their child was showing symptoms, most parents did not want their child to take part in regular testing. Previous research exploring parents’ views of the school testing programme found that a key barrier to testing was that parents were reluctant to test their children in the absence of symptoms [15]. Similarly, the parents in our study were reluctant to allow their child to take a test unless they were experiencing symptoms. This created a barrier for young people to take part in regular testing, as those under 16 years of age require the permission of an adult to take a test. In circumstances where young people want to take a test, they often lack the autonomy to do so. It is possible that the environment within which testing is offered to young people e.g. schools is influencing their decision making and could be one reason for the different in testing engagement between parents and young people. Further qualitative research with both parents and children would help us better understand this dynamic.

Our study also highlighted that young people felt that information about COVID-19 testing had not been aimed at their age group. Some information, including testing booklets, contained language that was too complicated and left them feeling excluded. Previous
research found that young people wanted to play an active part in the recovery from the pandemic, but felt that they needed more information that was directed at their age group, and a separate platform in which they could have their voices heard [16].

In our study, most young people stated that the information that they had seen about COVID-19 testing was mainly from social media, with many stating that they could not trust the information they had read. To help them feel recognised by those in authority, young people expressed a need for government messaging aimed at their age group. This finding supports previous research which highlighted that young people want simple, tailored messaging in public health campaigns that can be easily accessed by all ages [17]. This would help them feel like they are being included in political decisions and recognised in the COVID-19 response [17]. To ensure that young people are included in the public health response and engage in regular testing, the Government and Local Authorities should involve young people in the production of testing materials and messages to ensure that instructions are clear to follow and can be understood by those of a younger age. This recommendation supports learning from previous pandemics, which suggested that involving communities in the response can help shape social norms and enable public health messages to have a more powerful impact [18].

Young people felt strongly about protecting others in their community and this was stated as the main reason for taking a test. This finding supports previous research showing that young people had an awareness of the impact of the pandemic on the wider community, specifically elderly people, socially disadvantaged people and parents [19] and were willing to accept testing as a way of keeping others safe, especially when testing was recommended by health professionals [19]. This work was undertaken in a region with a high number of cases and therefore young people may have been more concerned about infecting others, compared with places where the incidence was lower. Previous research has highlighted that concern about Covid-19 and the impact to self and others contributed to willingness to test [20], as well as adherence to other public health measures such as self-isolation [4].

Our study therefore identified several barriers and facilitators to young people engaging with regular asymptomatic testing. Based on the barriers identified we were able to develop several recommendations for improving young people’s engagement with regular asymptomatic testing, should this be required in the future; these are presented in Table 2 below.
Table 2: Recommendations based on barriers to testing.

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptualising health and illness</td>
<td><strong>Provide clear information</strong> about what asymptomatic transmission is and how testing can help reduce the risk of transmission.</td>
</tr>
<tr>
<td>Lack of autonomy</td>
<td><strong>Provide local shops with testing kits.</strong> This will allow local residents that do not have online access or are unable to travel to their nearest chemist to get testing kits when needed.</td>
</tr>
<tr>
<td>Unmet information needs</td>
<td><strong>Authority figures should provide clear messaging to young people about testing.</strong> This may help young people understand the importance of participating in regular testing.</td>
</tr>
<tr>
<td></td>
<td><strong>Government / NHS websites should provide targeted information about the importance of testing that is aimed at young people.</strong> This should be a separate page that includes language that is suitable for young people. It should include information on why young people should get tested, how they do it, what to do once they have completed the test and key information about COVID-19 (for example, case numbers and reasons for high case numbers, that are specific to their geographical area).</td>
</tr>
<tr>
<td>Language barriers relating to testing kits</td>
<td>Involve young people in the production of testing materials and messages to ensure that instructions are clear to follow and can be understood by those of a younger age.</td>
</tr>
<tr>
<td>Challenges with the testing process</td>
<td>Provide clear instructions for how to report a test, including visual demonstrations such as videos. Provide alternative methods of reporting for those who do not have digital or online access.</td>
</tr>
<tr>
<td>Fear of testing positive</td>
<td>Provide clear information on what it means to test positive. This should include information on support available to young people that need to self-isolate due to a positive test result. As results are received in the absence of a medical or trained professional, clear information aimed at young people should aim to eliminate any</td>
</tr>
</tbody>
</table>
fear or stigma that is associated with a positive test result.

Limitations

The North West, particularly Blackburn with Darwen, was one of the areas most affected by COVID-19. Blackburn with Darwen had high numbers of COVID-19 cases, particularly in their younger population. It was therefore important to understand why young people were not engaging in regular testing in this community, which is why we chose to focus on understanding the attitudes and behaviours of young people in this area. However, it should be noted that the study sample used is not necessarily representative of the wider UK population.

As part of the recruitment strategy for this study, we identified parent groups that were part of the same organisation that was used to recruit participants for the 12-15 years focus group. The benefit of using this strategy was that a good rapport had already been established in the organisation and this enabled a relaxed environment for open and honest communication, which allowed for rich data to be gathered. However, this strategy resulted in the parents who took part in the focus groups being predominately mothers/grandmothers who were of Asian ethnicity. They were therefore not necessarily representative of parents or grandparents of different ethnicities. Further research could explore to what extent the themes reported in this study are consistent amongst different ethnicities, across the country.

Conclusion

Young people are at increased risk of COVID-19 transmission, and regular asymptomatic testing could help to reduce the risk of young people catching and spreading COVID-19. However, there is a lack of information concerning young peoples’ engagement with regular testing. We identified that the main barriers to young people engaging with regular testing were unmet information needs and lack of autonomy in testing. These barriers could be
addressed by providing clear and targeted messages aimed at young people. Information aimed at young people should be available on government or NHS websites and include topics such as the importance of testing, how to complete a test, what to do once they have completed the test and key information about COVID-19. While young people are not currently being asked to engage in regular asymptomatic testing, it is important to understand the barriers that reduce young peoples’ engagement with testing as regular testing is likely to be part of future infectious disease outbreaks or pandemics.

Authors' contributions

LT, CR and HC designed the study. LT ran the focus groups. LT and CR analysed the data and drafted the manuscript. All authors reviewed the manuscript and approved the final content.

Competing interests

None declared.

Funding

This study received no specific funding.

Availability of data and materials

On request from the corresponding author.

Ethics approval and consent to participate

The study was approved by the Public Health England Research Ethics Governance Group (R&D 464).

Acknowledgements
We would like to express our gratitude to all the participants who shared their experiences of COVID-19 testing with us. We would also like to acknowledge Blackburn with Darwen Council Public Health team and local youth organisations, for their time and support with recruitment.

CR is affiliated to the National Institute for Health Research Health Protection Research Unit (NIHR HPRU) in Emerging and Zoonotic Infections at the University of Liverpool in partnership with UK HSA in collaboration with the Liverpool School of Tropical Medicine and The University of Oxford, the NIHR HPRU in Gastrointestinal Infections at the University of Liverpool in partnership with UK HSA, in collaboration with the University of Warwick and the NIHR HPRU in Behavioural Science and Evaluation at the University of Bristol, in partnership with UK HSA. C.R. is based at UK HSA.

HC is supported by the National Institute for Health Research Health Protection Research Unit (NIHR HPRU) in Emergency Preparedness and Response, a partnership between UK Health Security Agency (UKHSA), King’s College London and the University of East Anglia.

The views expressed are those of the author(s) and not necessarily those of the NIHR, UKHSA or the Department of Health and Social Care.

References


3. Department of Health and Social Care. Twice weekly rapid testing to be available to everyone in England (2021). Available online:

5. Williams S, Michie S, Pagel C, Squires A. The UK is an international outlier in its approach to covid in children. BMJ 2022; 376:o327 doi:10.1136/bmj.o327


15. Taylor J., Carter H., & Robin C. (2022) Rapid thematic analysis of national online narratives of asymptomatic testing in schools. Available online: https://doi.org/10.21203/rs.3.rs-2517367/v1


Regular asymptomatic testing engagement in young people in North West England

Parents

Focus Group Guide

1. Has your child ever had a COVID-19 test?

Prompts:
   a. If not, why not?
   b. If so, why did they get tested?
      i. Requirement for education/youth groups, had symptoms, someone you had contact with had symptoms, concerned about getting COVID or passing it onto others?
   c. Do you know what type of test they took?
      i. Lateral flow or PCR?
   d. Who provided them with the test?
   e. How did they know what type of test to take?
   f. How easy or difficult was it for them to take the test?
   g. Roughly how many tests/how frequently have they had COVID tests

2. Did others know that they were getting a test?

Prompts:
   a. If so, what did your friends/family think of them getting tested?

3. Did you report the result?

Prompt:
   a. Did you tell anyone else of the test result?
   b. Did they tell anyone else of the test result?
   c. Have you taken tests and not reported results?

4. Have you or your child ever tested positive COVID-19?

a. How did that make you feel?
   i. Concern about what others might think?
   ii. Time off work/school?

5. If your child has never taken a COVID-19 test, can you tell me why not?

Prompts:
   a. Did you know you could get a test?
   b. Did you know where to get a test from?
   c. Did you have any concerns about the test result?
   d. Were you concerned about what your friends/family might think?
6. What information have you heard or seen about regular COVID testing?

Prompts:

a. Was the information specifically informing you about regular testing in young people?

b. Where did you see/hear it – social media, work, school, friends/family?

c. Was the information useful?

d. Do you feel that the information applies to you?

e. Are there sources of information you trust more than others?

f. Do you feel like you need more information?
   i. If so, what would be helpful?

7. Can you tell me how you would get a test kit for regular COVID testing?

Prompts:

a. From your school or workplace, parents, chemist, online?

b. How easy was it to get a test kit when you needed one?

c. Is there anything that could have made it easier to get a test kit?

8. Do you think you will ask your child to take regular COVID tests in future?

Prompts:

a. If not, why not?
   i. Is there anything that might encourage you to get one?

b. If yes, why?

c. Would being vaccinated for COVID make any difference to your decision?

9. How important do you think it is to get regular COVID tests for you child?

Prompts:

a. For you personally?
   i. Why do you think that is?

b. For other people where you live/work/go to school?
   i. Why do you think that is?

c. How important is it for limiting the spread of COVID-19?

d. Do you think you can catch COVID from someone with no symptoms?

e. Do you think you can pass COVID on if you have no symptoms?

10. Is there anything else you would like to add that we have not already discussed?
Regular asymptomatic testing engagement in young people in North West England

16-25 years old

Focus Group Guide

1. Have you ever had a COVID-19 test?

Prompts:
   a. If not, why not?
   b. If so, why did you decide to get tested?
      i. Requirement for work, education, had symptoms, someone you had contact with had symptoms, concerned about getting COVID or passing it onto others?
   c. Do you know what type of test you took?
      i. Lateral flow or PCR?
   d. How did you know what type of test to take?
   e. How easy or difficult was it taking the test?
   f. Roughly how many tests/how frequently have you had COVID tests

2. Did others know you were getting a test?

Prompts:
   a. If so, what did your friends/family think of you getting tested?

3. Did you report the result?

Prompt:
   a. Did you tell anyone else of the test result?
   b. Have you taken tests and not reported results?

4. Have you ever tested positive COVID-19?

   a. how did that make you feel?
      i. Concern about what others might think?
      ii. Time off work/school?

5. If you have never taken a COVID-19 test, can you tell me why not?

Prompts:
   a. Did you know you could get a test?
   b. Did you know where to get a test from?
   c. Did you have any concerns about the test result?
   d. Were you concerned about what your friends/family might think?

6. What information have you heard or seen about regular COVID testing?
Prompts:

a. Where did you see/hear it – social media, work, school, friends/family?
b. Was the information useful?
c. Do you feel that the information applies to you?
d. Are there sources of information you trust more than others?
e. Do you feel like you need more information?
   i. If so, what would be helpful?

7. Can you tell me how you would get a test kit for regular COVID testing?
Prompts:

a. From your school or workplace, parents, chemist, online?
b. How easy was it to get a test kit when you needed one?
c. Is there anything that could have made it easier to get a test kit?

8. Do you think you will take regular COVID tests in future?
Prompts:

a. If not, why not?
   i. Is there anything that might encourage you to get one?
b. If yes, why?
c. Would being vaccinated for COVID make any difference to your decision?

9. How important do you think it is to get regular COVID tests?
Prompts:

a. For you personally?
   i. Why do you think that is?
b. For other people where you live/work/go to school?
   i. Why do you think that is?
c. How important is it for limiting the spread of COVID-19?
d. Do you think you can catch COVID from someone with no symptoms?
e. Do you think you can pass COVID on if you have no symptoms?

10. Is there anything else you would like to add that we have not already discussed?
Regular asymptomatic testing engagement in young people in North West England

12-15 years old

Focus Group Guide

1. Have you ever had a COVID-19 test?
   Prompts:
   a. If not, why not?
   b. If so, why did you decide to get tested?
      i. School, youth club, had symptoms, someone you had contact with had symptoms, parents?
   c. Do you know what type of test you took?
      i. Lateral flow or PCR?
   d. How did you know what type of test to take?
   e. How easy or difficult was it taking the test?
   f. Roughly how many tests/how frequently have you had COVID tests

2. Did others know you were getting a test?
   Prompts:
   a. If so, what did your friends/family think of you getting tested?

3. Did you (or your parent) report the result?
   Prompt:
   a. Did you tell anyone else of the test result?
   b. Have you taken tests and not reported results?

4. Have you ever tested positive for COVID-19?
   a. How did that make you feel?
      i. Concern about what others might think?
      ii. Time off school?

5. If you have never taken a COVID-19 test, can you tell me why not?
   Prompts:
   a. Did you know who to ask to get a test?
   b. Did you know where to get a test from?
   c. Did you have any concerns about the test?
   d. Were you concerned about what your friends/family might think?

6. What information have you heard or seen about regular COVID testing?
   Prompts:
a. Where did you see/hear it – social media, school, friends/family?
b. Was the information useful?
c. Do you feel that the information applies to you?
d. Are there sources of information you trust more than others?
e. Do you feel like you need more information?
   i. If so, what would be helpful?

7. Can you tell me how you would get a test kit for regular COVID testing?
Prompts:
a. From your school, parents, chemist, online?
b. How easy was it to get a test kit when you needed one?
c. Is there anything that could have made it easier to get a test kit?

8. Do you think you will take regular COVID tests in future?
Prompts:
a. If not, why not?
   i. Is there anything that might encourage you to get one?
b. If yes, why?
c. Would being vaccinated for COVID make any difference to your decision?

9. How important do you think it is to get regular COVID tests?
Prompts:
a. For you personally?
   i. Why do you think that is?
b. For other people where you live/go to school?
   i. Why do you think that is?
c. How important is it for limiting the spread of COVID-19?
d. Do you think you can catch COVID from someone with no symptoms?
e. Do you think you can pass COVID on if you have no symptoms?

10. Is there anything else you would like to add that we have not already discussed?
# Standards for Reporting Qualitative Research (SRQR)*


<table>
<thead>
<tr>
<th>Title and abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title</strong> - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended</td>
</tr>
<tr>
<td><strong>Abstract</strong> - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Problem formulation</strong> - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement</td>
</tr>
<tr>
<td><strong>Purpose or research question</strong> - Purpose of the study and specific objectives or questions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Qualitative approach and research paradigm</strong> - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**</td>
</tr>
<tr>
<td><strong>Researcher characteristics and reflexivity</strong> - Researchers’ characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers’ characteristics and the research questions, approach, methods, results, and/or transferability</td>
</tr>
<tr>
<td><strong>Context</strong> - Setting/site and salient contextual factors; rationale**</td>
</tr>
<tr>
<td><strong>Sampling strategy</strong> - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**</td>
</tr>
<tr>
<td><strong>Ethical issues pertaining to human subjects</strong> - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues</td>
</tr>
<tr>
<td><strong>Data collection methods</strong> - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**</td>
</tr>
</tbody>
</table>

* Supplementary Files 2-4
### Data collection instruments and technologies
- Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study

### Units of study
- Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)

### Data processing
- Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts

### Data analysis
- Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**

### Techniques to enhance trustworthiness
- Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**

### Results/findings

<table>
<thead>
<tr>
<th>Synthesis and interpretation</th>
<th>Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links to empirical data</td>
<td>Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings</td>
</tr>
</tbody>
</table>

### Discussion

<table>
<thead>
<tr>
<th>Integration with prior work, implications, transferability, and contribution(s) to the field</th>
<th>Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limitations</td>
<td>Trustworthiness and limitations of findings</td>
</tr>
</tbody>
</table>

### Other

<table>
<thead>
<tr>
<th>Conflicts of interest</th>
<th>Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding</td>
<td>Sources of funding and other support; role of funders in data collection, interpretation, and reporting</td>
</tr>
</tbody>
</table>

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.*
**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:
O’Bien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting qualitative research: a synthesis of recommendations. *Academic Medicine, Vol. 89, No. 9 / Sept 2014*
DOI: 10.1097/ACM.0000000000000388