Transcript: Webinar - COVID-19 challenges and solutions

Can we test our way back to normal? | 21 July 2021

Watch the webinar

During this webinar our audience submitted their COVID-19 IPC questions to our expert panel:

- Adam Gordon, Professor of the Care of Older People, University of Nottingham
- Mark Green, Senior Lecturer in Health Geography, University of Liverpool
- Katie Jeffery, Consultant Microbiologist, Director Infection Prevention and Control, Oxford University Hospitals
- Isabel Oliver, Director, National Infection Service, Public Health England

Chair: Surabhi Taori, Consultant Microbiologist, NHS Lothian, Scotland

Disclaimer

The HIS webinars may contain expert opinions and preliminary reports of work that have not been certified by peer review. They should not be relied on to direct clinical practice or health-related behaviour and should not be reported as established information without the consent of the panel members.

Uncertified transcript

The following transcript of this HIS webinar, or any portion thereof, is being delivered UNEDITED and UNCERTIFIED by the Healthcare Infection Society and Panel Members and was created using artificial intelligence software. The reader agrees not to disclose or copy this uncertified and unedited transcript in any form (written or electronic) to anyone. This is an unofficial transcript, which should NOT be relied upon for purposes of verbatim. This transcript has not been checked, proofread, or corrected. It is a draft transcript, NOT a certified transcript. As such, it may contain computer-generated mistranslations, resulting in inaccurate or nonsensical word combinations.

This webinar is supported by an educational grant from GAMA Healthcare.

Surabhi Taori 0:00

Okay, so welcome everybody, this is the next edition of the COVID-19 challenges and solutions series. Before I introduce the speakers just a word to say that before this webinar, we asked you to submit questions to the panel. We selected the eight most popular questions for the panel to discuss during the first 40 minutes of the webinar. During the last 15 minutes of the webinar we will answer live questions that you that you can submit via Sli.do throughout the event. We will also be able to use Sli.do to express your opinion by voting on the live polls. To participate in polls and questions please open the Sli.do app, and enter the hashtag HIS. So, without further ado, let me introduce the speakers, Katie Jeffery.

Katie Jeffery 1:00

I'm Katie Jeffery. I'm a consultant in clinical infection at Oxford University Hospitals. I am clinical lead for the COVID testing lab, and I'm also the DIPC.

Surabhi Taori 1:17

Thank you, Katie. Welcome, Mark Green.

Mark Green 1:22

Hi everyone, my name is Mark Green I'm a senior lecturer at the University of Liverpool and I'm mostly here to talk about experience in Liverpool around mass testing events research program and how we've been using lateral flow devices.

Surabhi Taori 1:39

Thanks so much for joining us, Mark, and Adam Gordon.

Adam Gordon 1:45

Hi. I'm Adam Gordon I'm professor of care of older people at the University of Nottingham. I'm a consultant geriatrician, and my interest in COVID and infection control is through care homes. We've been doing a lot of work around point of care testing during the pandemic, and also contributing to the Social Care Working Group, which is part of SAGE, although I don't speak for SAGE this evening when I answer these questions.

Surabhi Taori 2:08

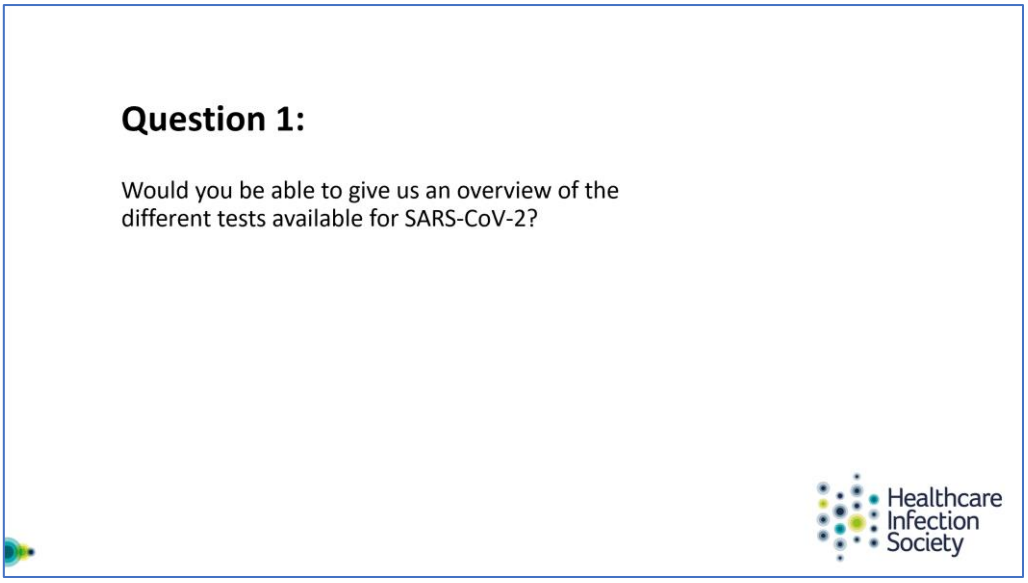
Thank you for taking the time. Isabel?

Isabel Oliver 2:10

Hello, good afternoon I'm Isabel Oliver. I'm Director of the National Infection Service of Public Health England and also a joint appointment with NHS Test and Trace. And among other things I'm leading the study that there's been a lot in the media over the past few days, which is the study on the daily testing of contacts using lateral flow devices.

Surabhi Taori 2:37

Thank you so much, so shall we go on to the first question. Katie?



Katie Jeffery 2:55

Thank you. So, tests available for SARS-CoV-2 divide really into those designed to pick up infection, and those designed to look at our immune response to infection, and we are all probably very familiar with the phrases PCR and lateral flow.

PCR is the first test that we introduced to diagnose SARS-CoV infection in this country, it looks for viral RNA, using molecular techniques. This could be laboratory-based or there are some point of care tests also out there with some mixed performance. These tests are thought to be the gold standard and what we really base the diagnosis of infection on, that's not necessarily a disease but a diagnosis of infection.

And then the other way of looking at infection is to look for viral antigen, and the workhorse around this is around lateral flow tests - again hopefully very familiar with these - or doing them twice weekly at home. I think the performance of these - and we'll talk about this more I'm sure as time goes on through to the next hour - but performance of these in my opinion, is becoming much better as we become much more used to them. And I think they're becoming a very reliable and helpful tool in the way that we manage COVID.

Looking at the response to infection -and is something that we're going to be using increasingly particularly if and when we start getting monoclonal antibody preparations off the back of the recovery trials looking at patients. We are going to have to start doing a lot more antibody testing out

the front door and potentially in the community and patients to work out whether other modalities might be useful.

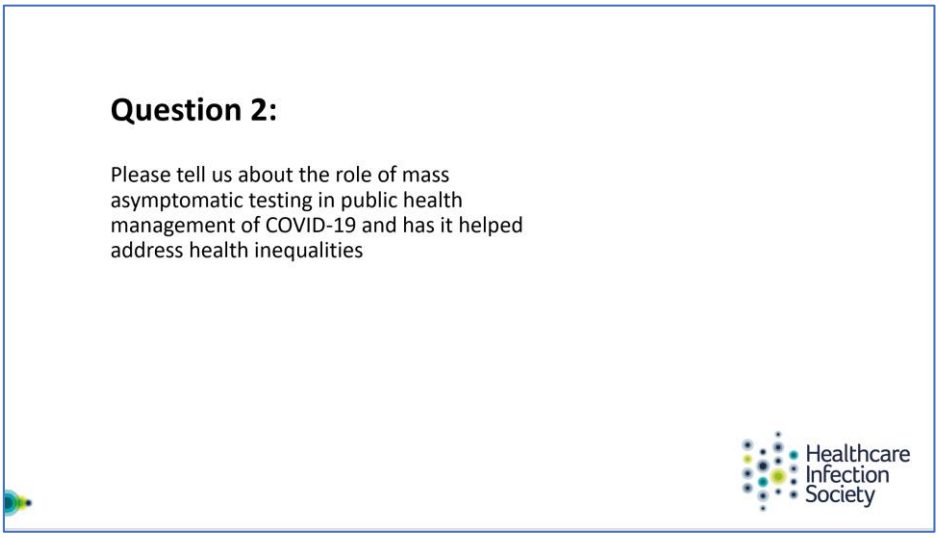
So, the response to vaccine is spike antibody, and some of you will have had that measured and some people are reporting that in a quantitative measure. We don't truly know what that means in terms of your protection. We all instinctively feel that higher is better but we don't really understand what is high.

There's a second antibody that we look for which is the nuclear protein antibody and this tells us pretty reliably, or certainly specifically, whether you've had an infection in the past. We know that these protein antibodies reduce over time. So, you could have had infection say in the first wave, being currently nuclear protein negative.

So, there are also various techniques really which sit within research such as neutralizing antibody T cell assays IGRA and their role in defining. They're all set up, along with a panel of tests to look at correlates of immunity, but I have to say we don't really understand what is a good correlates of immunity at the moment. So we have some really good mass testing tools around PCR lateral flow, and antibody and various research techniques looking at different forms of immune response, which is polyfunctional, it isn't one bit of the i4mmune response that is going to prevent infection. I'll stop there.

Surabhi Taori 6:05

Thank you Katie. Would anyone else like to add anything? Next question.



Perhaps Mark would like to address this.

Mark Green 6:34

Thank you. So, I think one of the big difficulties in managing the pandemic has been asymptomatic transmission of COVID-19. So, what do we mean by asymptomatic? We mean, individuals who don't show symptoms, they may never show symptoms, they may not be quite ready to show symptoms whilst they are infectious - and then later develop symptoms, or they develop symptoms that are sort

of subclinical in that they might not be obviously detected as COVID-19. And there's various studies that suggest that, up to half of infections could be asymptomatic.

So, in response to this the UK government's trailed initially introducing lateral flow testing by trying to test everyone in Liverpool who wasn't symptomatic of COVID-19. However, they did have it using lateral flow devices. It's really the first time we have tried to, you know, test the whole city a whole population, trying to do something new. And then following that, from that pilot that government introduced lateral flow testing first initially to tier three areas then to the whole country. And of course this is becoming part of daily life as we as we've opened schools or opened workplaces. So what did we find when they trialled it in Liverpool trying to get everybody, have a lateral flow test to test whether they had COVID-19, essentially under the mantra can we catch things a lot, a lot more earlier catch cases early and stop transmission.

Well, was effective overall? Probably with a large amount of uncertainty but it's really difficult to understand the overall effectiveness. Liverpool itself has gone for a regional lockdown and a national lockdown - working these things out is quite tricky. But what we can do with some certainty is actually understand the impact on inequalities.

So, in Liverpool's experiences, where there are significant inequalities in who got tested, yes, there was unfortunately. And we see that men were far less likely to have been tested compared to women. We see some differences between ethnic groups, in particular, our black and black British populations were much less likely to get a test. We also see big social inequalities so deprived communities being much less likely to get tested, as well. We also see some nuances here, in particular we see digital inequalities those people with less access to the internet or without a mobile phone were less likely to get tested. And whilst there were work arounds in Liverpool's experiences it could just be the fact if you know you've got to go and sign up on a QR code is kind of off putting – enough to maybe not want to engage in it. We found that accessibility really mattered so where people lived and if people lived quite far from the test sites they were much less likely to get tested.

And there's also a sort of like a big issue around deprivation, and this really links back to kind of low income populations or maybe people within insecure employment groups who maybe didn't want to get tested because if they got positive test and how to isolate – that's lost income and that can be very problematic. And maybe a suggest that the financial support for self-isolation, something we really needed to do a lot better.

So does the introduction of kind of large-scale lateral testing impact on inequalities? Well it does, and possibly not in the ways that we wanted it to. And this might not be that surprising. To be honest, where we start offering tests that relies on people to go and get tested, we tend to find these types of interventions always increase inequality, so we see this with healthy eating initiatives.

Well I think the question now is, well, are we going to be living with lateral flow testing is testing going to be an important part of the future? Well, it probably is. Testing is still going to be unfortunately our way of life. But then the question is well how do we best support and tackle these inequalities that are going to persist? It could be around providing better digital provision, trying to minimize some of those inequalities, better financial support, better targeting better accessibility. I think the way I'll finish on this question though is that no single test is perfect for COVID-19. And really what we want to be doing now is thinking about how can we use testing, effectively to help us manage the pandemic. Help us deal with COVID-19 as we start to roll out the vaccines and everyone gets vaccinated as well. And understanding that communication is really important, it has a huge inequalities angle, in particularly if you get a negative result, it doesn't mean that you aren't infectious, or that you don't

have to socially distance. And these messages are going to have to be really important as we start to open up society.

Surabhi Taori 11:38

Thank you Mark. Would anyone else like to add their view on this?

Adam Gordon 11:45

I was going to come in and say that the inequalities aren't just in the wider population they are in the workforce as well. And so we've seen evidence during the pandemic that one of the reasons that care home staff for example were reluctant to undertake lateral flow testing was because they may not have guaranteed sick pay in some care home organizations and therefore, if they were positive with a lateral flow test it meant a loss of income.

And we went into the pandemic with many care home staff feeling that they didn't want to work in the sector, and this has been one of various things that has been piled on top of them during the pandemic. And we see an inequality as to how it's been applied across health and social care. So NHS staff have been very much guaranteed, you know, the opportunity to shelter at home and be paid for that if they trigger lateral flow test positive, that hasn't been a universal opportunity within the care home sector. And so we've reinforced a long standing inequality between those two sectors as an unintentional consequences of the testing regimen.

Surabhi Taori 12:50

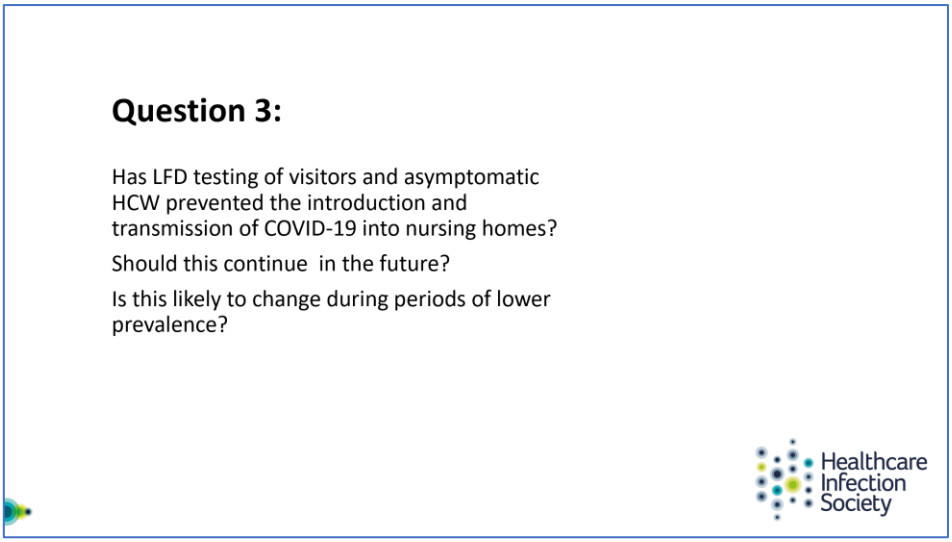
A double-edged sword. Anybody else?

Isabel Oliver 12:54

I just wanted to add to date about 225,000 infections have been detected through asymptomatic testing that might not have been detected otherwise, so it is adding value and identifying cases that otherwise might have been missed. And particularly the positivity rate, it's been, it's been highest when they've been deployed in communities where there was some concern as with Liverpool about transmission.

Surabhi Taori 13:40

Thank you. Next question.



Adam, thank you.

Adam Gordon 14:01

So I'll start by highlighting what the current regimen is, which has been in all parts of the UK twice weekly with lateral testing and one weekly PCR testing for care home staff. A variable set of regimens for visitors depending upon what category of visitor you are, and England over and above that, there is the option of once monthly PCR for residents. Now in reality from that whole suite of measures, and the one that is least likely to make a difference is the once monthly PCR testing of residents. And, you know, that's because testing of asymptomatic residents is entirely logical during an outbreak we know that care home residents between 30 to 50% will be asymptomatic at the point of initial COVID infection. But outside the context of an outbreak, the pre-test probability of those resident's test is very low. And actually if you look back from the SAGE recommendations as far back as the tail end of last year, the one they placed the least emphasis on is the resident testing. And there's pretty good evidence that that if you want to make a difference with asymptomatic testing, it's really about entry control and stopping the COVID positive carrier effectively entering the care home premises and that's the kind of logic behind staff, and visitor testing.

The group that go into the care home the most often are the staff, the care home staff themselves. And so that's where the kind of biggest bang for the buck is' What's the evidence that this makes a difference? Well, that's quite difficult to unpick, and we do see evidence from the second wave, that there was a lower incidence and prevalence of COVID in care homes across the second wave unpicking that is complex, there may be a survivor effect in that care home residents that survived the first wave, were slightly more robust, slightly more immune competent and therefore less likely to succumb to the infection. But it's also likely that a lot of the measures be put in place as a kind of black box intervention around care homes at the time of the second wave contributed to that improvement, and testing was part of that. And so it's difficult to envisage a situation whereby we would retreat from testing as a form of entry control.

I think the big questions now, are around the modality of testing that is used, and the frequency of testing, we're seeing as the country reopens, we know what, two days post Freedom Day stresses on the PCR system across the country. And one of the questions is whether we should look at dropping the regular PCR testing for staff out of the regimen and relying only upon lateral flow devices. If we

were to do that the modelling suggests that we'd need to increase the frequency of the lateral flow testing to compensate for the loss of sensitivity that we that we get if we drop PCR out of the system. And we might be looking at something in the region of three to four times a week lateral field testing for staff.

The only additional thing to throw into the mix is that we've got varying data on staff, adherence to the lateral flow testing regimen. We did a piece of work around the Liverpool care home lateral flow testing pilot, which is different from the piece of work that Matt has been describing, but we did see incomplete and really quite worryingly low adherence to the lateral flow regimen amongst the Liverpool care home staff. Having said that that was at the height of wave two in December. We're now in a different place, lateral flow testing is much more mainstream, and I expect that the both acceptance and adherence have gone up in the interim.

The only other thing is about alternative testing modalities that have started to become available and there are for example, point of care PCR which has been validated in some care home settings, I've been involved in that work. There are also point of care antigen tests which are increasingly available, and increasingly cheap. And so it is possible that alternative modalities, which may have different implications for what humans from lateral flow testing could come online and start to change the equation about, you know, what's the most desirable test.

In summary, I think testing with people coming in and out of care homes is going to be part of the landscape going forward, we may see a change in frequency. We may see PCR dropping out of the routine surveillance not for outbreak testing but for surveillance, and it will either see if we do that an increase in lateral flow test frequency or alternative testing technology starting to come in to support what is already in place.

Surabhi Taori 19:06

Thank you Adam that's very comprehensive. Anyone else like to add?

Mark Green 19:11

Just to add on to the Liverpool care home pilot study which was done in December. So the initial pilot trialled testing staff twice a week with lateral flows, they had 11 care homes test that process. And just over half of those care homes the six of the 11 had outbreaks of COVID-19 during that period. This was during December to January, so like Adam said at the heart of the second wave. But care homes that took part in the pilot were no more or less likely to have had an outbreak compared to other care homes, and so it makes it really difficult and testing itself isn't going to be the thing that makes or breaks it is going to be a part of other interventions at the same time. I'm just also note that Adam mentioned there was staff adherence was quite low. So, I think, 82% of staff got tested but only one in four actually completed all of the tests during the pilot.

And there's a huge amount of testing hesitancy - workload issues going on - and some of these concerns have also persisted into vaccine as well particularly vaccine hesitancy in care home staff, which of course then impacts, both our intervention delivery but also has an implication on inequality as well much later down the line.

Surabhi Taori 20:39

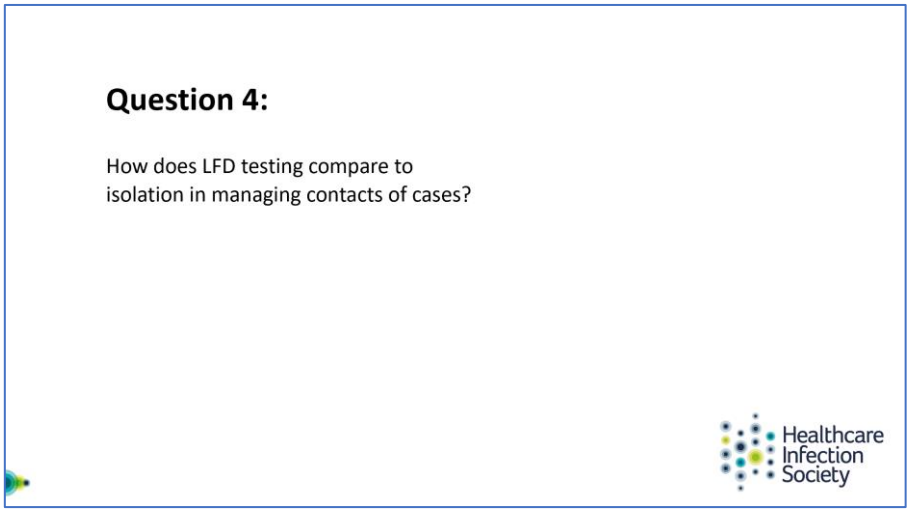
Okay, a question for me, do you think that there will be test exhaustion at some point, if you're expected to do more frequent tests?

Adam Gordon 20:48

So, the biggest challenge really with the testing is what we see as the kind of workload impact of the test is only really the tip of the iceberg. So we did have a piece of work looking at lateral flow testing, we think of that as a 20 minute test, but by the time you've got the test out, you know, reoriented yourself to the task, done the task and then logged your result it maybe a 40 or 50 minute test and if you're doing that three or four times a week, it quickly starts to take a big chunk of your time, and that's one of the reasons for looking at some of these alternative modalities. So some of the automated antigen tests for example, it gave a result in 12 minutes which is quite different from a 45 minute impact, and it considered the threshold, the care home so you arrive in an anti chamber, test yourself, if you're negative you go into work if you're positive, you go home again. And, you know, so the, some of these alternative technologies, open up ways to make, potentially, a bit more bearable for the care home staff. And I think that's always something that you have to be reminded of when we look at frequency and duration of these things.

Surabhi Taori 22:08

Thank you very much. Next question.



Katie Jeffery 22:15

I'll start but we've got significant lateral flow expertise on the panel as well. But for those of you working in acute trusts, you will like me have been bit dismayed on Monday morning when BBC said you could just do a lateral flow test and go to work - because that's what a lot of people did, even if they were contacts. So huge piece of work for acute trusts in setting up ways of risk assessing, who its safe to keep in work with daily lateral flow testing - bearing in mind that clinical teams, laboratory

teams have fallen over because of the number of people who are either being pinged by the app or contacted by Test and Trace.

In Oxford, we have been incredibly lucky because we've been doing this since January, as part of a pilot with the Department of Health and Social Care along with a couple of London Trusts and one in Lancashire. So, our experience of it actually, in the grand scheme of things is incredibly small numbers but we are at least set up with a risk assessment process. And interestingly, nothing that's come out of the requirements for risk assessment this time around are any different from what we ourselves been doing since January so I do have a fair bit of experience of doing it as do our staff testing team but I feel very much fear of all those trusts who have been thrown into this from Monday and expected to deliver it within five minutes really hard work incredibly hard work.

My own experience of it is favourable, we actually do PCR tests on our subjects who are daily lateral flow testing twice We do it on day 4,5,7,8 and they do lateral flow tests for 10 days post the contact. We have not had anybody convincingly become PCR positive during that time, and we have not had any evidence of any ongoing transmission. Having said that, we risk assess people pretty carefully. And we don't allow household contacts to enter this pilot or anybody where we think the contact is particularly risky. And there's some quite nice data coming out to kind of support that now there's a paper in Clinical Infectious Diseases by Leah et al. published in 2021 where they put together 1000s of pieces of data form test and trace PCR lateral flow, showing that, you know, if you look at contacts. Actually, your risk of becoming PCR positive you know they've got over 300,000 test and trace bits of data and the risk of getting positive is about 6%, but it's very highly biased towards those household contacts and really not very much in the workplace.

So what we're doing now what we're thrown into, and I still think we need more data to support this, but I think there's a lot of data that helps support it. So what we're doing now is carefully risk assessing, and trying to keep our clinical services working - so is a risk benefit, assessing each contract saying well, actually, you're on call for surgery tonight I do need to get you into work. Actually, you know, practically I can't get a PCR on you tonight, before you need to come to work so you do need to have some, some mitigations and things in place, and it is a huge communications exercise to the trust that they are effectively still in self isolation, they are allowed to come to work and I've travelled to work, but they're still isolating.

Isabel may want to speak more about studies but on Friday morning they will be announcing the results of the school study where they randomized 100 schools to daily lateral flow testing and 100 to isolation, and that data will be out on Friday. Clearly it's not going to directly transfer into other populations, because this school study of secondary schools, but I think it's going to be quite useful.

The other thing, publication about lateral flow testing that I think is really interesting that I've seen is INNOVA lateral flow is being renamed Biotime and there is a technical report on the Biotime lateral flow device available on the gov.uk website, really interesting read to have a look at correlating just beautifully graphing you know the CT values, giving some idea at the time it takes to become positive. The fact that it works really well with alpha and delta. So I'm optimistic, you know that these daily contact testing process is going to help us delivering health care within the acute sector, rather than isolation, but I think it's got to be carefully risk assessed is quite resource heavy.

Surabhi Taori 27:05

Thank you, Katie. Isabel?

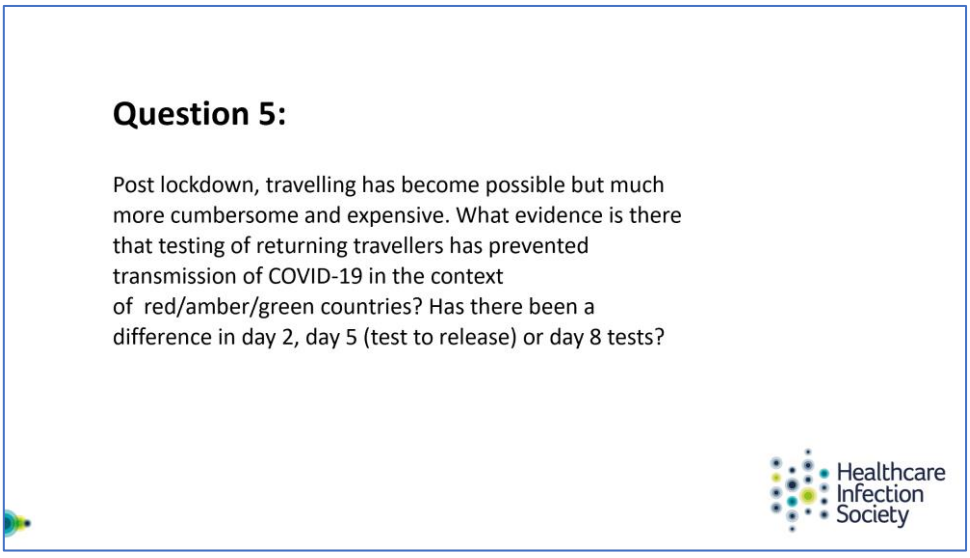
Isabel Oliver 27:08

Yes, just to add. So, clearly, the, the risk of secondary transmission is being modified by the vaccination. But having said that, I read a study of contacts last autumn that we identified within contact tracing was that about 17% of contacts then became infected. Clearly, which is higher in the household, but you know 17% overall. So, my, my view personally is that if we do want to find cases and isolate those cases, then then contacts are a key group for us to try to test.

So this is part of the rationale of the study that I'm doing, assessing the effectiveness of daily testing with the lateral flow device of contacts of confirmed cases as an alternative to self-isolation. This study would represent 50,000 people to the study we are about to finish data collection, determining trend analysis I can't quite comment on that, but I think it's a, it's a non-inferiority study, if, if the results are supported, then it will be something really important in terms of helping us return to great normality. Although of course, you know, just under 1 in 5 people who are a contacts of a case become a case themselves. We need to think that you know the other 4 in 5 are isolating when they don't need to so we are able, with them, with a daily testing to identify those who develop the infection, to be just with them allows everyone else to continue with, with normal lives, That's, that's the aim really.

Surabhi Taori 29:15

Next question.



Isabel Oliver 29:49

Thank you so, so this is a very complex question. So, as you probably know, testing guidelines vary significantly by country. At the moment in the UK. People traveling into the UK we require a pre-departure test. And that can be a lateral flow test or it can be a PCR, but we also require testing once back in the UK. The policy varies depending on, on the risk associated to the country that you've travelled to, but at the moment, particularly it will focus on amber and green countries, they propose, the plan is really that all arrivals, get a day to PCR test.

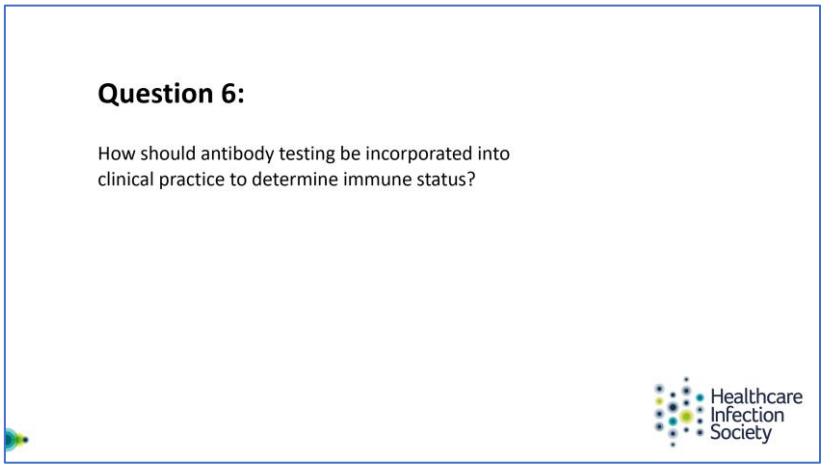
And so the key thing to say about this is that this specific question about the evidence that that leads to a reduction in transmission is not there to my knowledge. There are modelling studies that show that testing is contributing overall to a significant reduction in transmission rates overall but I don't have the data specific for travel.

And you might be interested in knowing that the positivity rate of those tests is obviously very much dependent on the risk of the country of origin. So the positivity rate for in the past in the past week, for example for people traveling from a red country is 2.5%, 1.5% to 1.4% for those returning from amber country and just half a percent for those returning from a green country. There are limitations so we do know for example that, that, you know, when we were requiring day one and day 8 tests that there was a lower compliance with the day 8 test. And, you know, some people just didn't do that, they were they had completed their isolation period and we never got that test result. And the question also asked about the day 5 five test to release. And all I can say about that is that that's at the moment being undertaken by less than a third of relevant arrivals.

And so, I suppose the key thing is to maybe discuss is why are we undertaking testing and we've mentioned transmission in the question, but transmission, reducing transmission is not the only reason why we test the arrivals. So an important reason for testing is to identify new, not just new cases but to enable surveillance of new variants, and to ensure that we identify quickly any new variants that might be arriving to the country, so that we mustn't forget the surveillance and the wider public health value as well as the identification of cases.

Surabhi Taori 33:30

Thank you. Would anyone else like to add? The next question.



Adam Gordon 33:55

OK, so yeah, when, when I process is a clinician, I sort of find myself thinking, what, what are the scenarios in which knowing someone's immune status would actually change your clinical management and I think that's the part that I sometimes struggle with. As I mentioned earlier that we've been doing some work around evaluation of automated antigen tests and some of the manufacturers of those technologies also have automated antibody tests. So I have been asked this

question before. You know as should we, how should it be marketed or automated antibody tests, and I frequently find myself drawing something of a blank, but but I think it's really just thinking about where is the, when is the right time that knowing someone likely immune status would actually help you make a decision.

And I came back to my main kind of passion which is care homes and the I was thinking of something that's been exercising the care home sector this week, which was the announcement from government, that if you're a care home member of staff, same as an NHS member of staff, and you're a contact, and your PCR negative, and you're prepared to undergo daily lateral flow testing, you can return to work, so long as you're not caring for clinically extremely vulnerable populations.

I've had numerous care home managers contact me over the course of the week saying 'but in my mind, everybody that lives in a care home is a clinically extremely vulnerable person, so how does this help move us move forward?'. We don't feel that we're an awful lot further forward.

And I guess in that context, If you could find a way of stratifying which of your care home residents had antibodies from which ones didn't have antibodies (and is not a given, because they are vaccinated or have had a previous COVID that they have a decent tire of antibodies), then that may help you with some of your risk stratification type decisions about who it was safe to have an at risk staff members looking after. And then when you sort of take that approach you can extrapolate that into other clinical populations where there may be similar question for the person who is shielding at home, due to some sort of autoimmune condition for example, has now been vaccinated, and is waiting an elective hip or knee replacement, and we want to factor into the decision making about whether they go for that, whether we have antibodies or not.

And so for me it's more of a nuanced and informed decision making around a very small minority of clinical cases, rather than any sort of widespread when it comes to clinicians perspective rather than any sort of widespread sort of application, which is much more of epidemiology, but it's possible that the other panellists have thought about this longer and harder than I have, it might have something to add.

Surabhi Taori 36:40

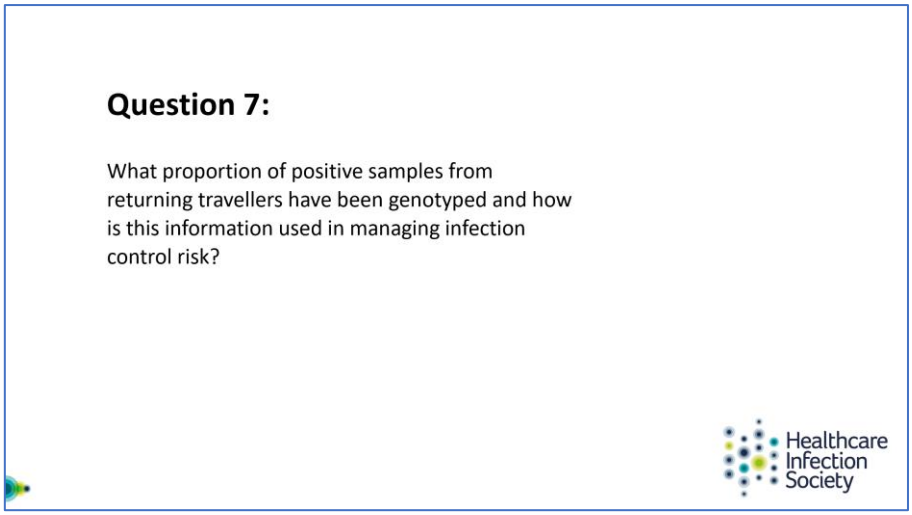
Thank you, Adam would anyone else like to add on this. Katie?

Katie Jeffery 36:50

It's a very limited issue but just as I mentioned at the beginning if you present with COVID and are antibody negative there are potential therapies you could benefit from that's going to be a very small group of people.

Surabhi Taori 37:08

Okay, so next question.



Isabel Oliver 37:25

Thanks very much, so I'm going to talk more about sequencing than genotyping, as the provision of genotyping has changed over time for a variety of reasons. But in essence, a, a, either sequencing, or, or genotyping is profiling, in essence. So the key thing to say is that we've been prioritizing, whole genome sequencing of samples from travellers from, from the outset. And the second thing is that we have been increasing very significantly the whole genome sequencing capacity in the country and that we have. To my knowledge, the greatest capacity worldwide and sequence by far the greatest percentage of samples compared to any other country.

So, at the moment the epidemiological incidents will affect the percentage, that we're able to sequence - but we have been sequencing between 60 and 70% of all samples. That is quite extraordinary when you compare to, let's say the United States, which is the second country, about 9%.

And so that, that means that the majority of samples from returning travellers are sequenced and that's also a requirement for people who are quarantining - they have to pay for, for the sequencing of their sample to take place if they test positive. And the data feeds into the public health system.

But, of course not every sample will be able to sequence it, you know, some haven't got a quality or whatever it is. So that's why, even if we have greater capacity, we're not able to sequence more than 60 or 70%.

And then in terms of how the information is used, so the information is, is critical to our variant surveillance. I think it's probably fair to say also that we have the most develop Variant Assessment Program worldwide and it is used by WHO and others so we've got a really good system that allows us to identify a new possible new variants, through whole genome sequencing, we have got a systematic assessment process. That looks for example, at any changes on a clinical presentation, you know like severity. It looks at any possible impact on diagnostic testing the validity of the ability of the tests to, to identify the variant. It also feeds into the vaccine efficacy work and vaccine development work and that is a very systematic process that is operating, constantly and is obviously, very effective.

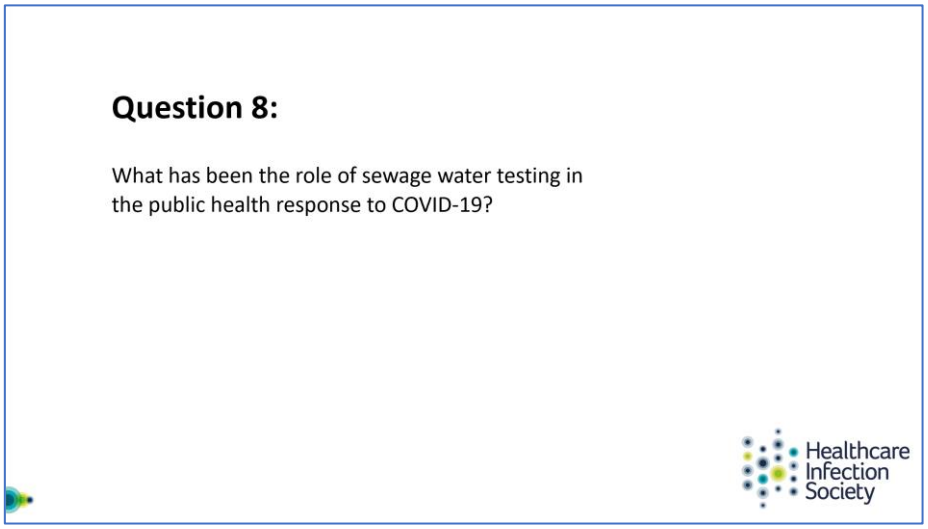
The weaknesses of the system are of course, that the capacity globally is not is not as good as we have. For that reason, the government made an offer which is referred to as a new variant assessment platform. And so we have got a global sequencing offer of we're implementing to increase capacity,

and allow us to in effect where we have partners in other countries we're working with Pakistan and Nigeria, Ethiopia, Singapore and other countries to enable them to sequence, and for that data, then feeding to our own surveillance, but also to global work with WHO.

Surabhi Taori 41:54

Thank you so very comprehensive. Anybody else?

Question 8.



Isabel Oliver 42:22

Thank you. So sewage testing has been a new development in the context of the COVID response so of course it is used as part of research for example, in relation to aquatic ecosystems. But in the context of the COVID response it was developed as a research program initially. We now have sampling in about 500 locations in England at least once a week, with an estimated coverage of about 40 million people. The samples are tested at a purpose-built laboratory, we have a laboratory, which is operated by the Environment Agency on our behalf. And all positive samples are sequenced for evidence of variants of concern or variants under investigation. And that is being done in collaboration with a number of universities.

It's also useful to say that the system has been deployed, where there were particular concerns, so it's not just rigid in terms of the areas that we cover, but it has been used flexibly with an enhanced an approach in areas where there were potential alerts. So, data from, from sequencing is shared with local authorities with health protection teams, to provide to the local intelligence about, about the transmission of the virus in, in their populations.

There are some case studies that have been published, including Bristol and Luton, I believe, and they have been also piloted in specific settings such as prisons and hospitals and schools. And there's also been a, they've also been used to assess for example, what's happening with managed quarantine facilities, for example, to look at managed to quarantine facilities and to see whether variants are identified through that route.

So it is quite experimental at the moment, but it's got the potential to add value as an additional surveillance tool and obviously subject to, to evaluations at the moment but it's an interesting tool to consider to just bring some additional information I would say. I will add sorry just to say that it is

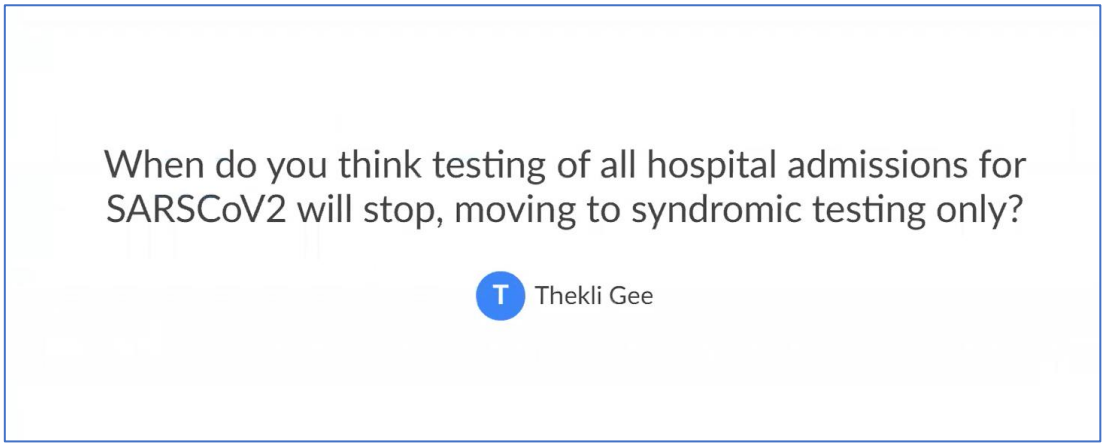
being led by the Joint Biosecurity Centre which was set up as part of the COVID response as part of NHS test and trace is not led by PHE. Thank you very much.

Adam Gordon 45:39

I was just gonna say that this is a although it remains experimental, this is one of the technologies, it's in the frame, going forward for how we may potentially conduct surveillance for things like care home outbreaks, for example, so rather than having a national comprehensive surveillance program, as, as prevalence starts to fall in the middle you will have sporadic outbreaks, then it may be much more logical to have a form of pool testing is one form of pool testing, whereby you're looking at whole populations, and then when you see evidence of a COVID outbreak in the population you then put in place a targeted enhanced or intensive testing regimen. So this is definitely one of the things that's in the frame for care homes and other institutional settings, as Isabel mentioned, in addition to prisons in schools as well. So, this is possibly something that will lead to an end to routine lateral flow testing but only when prevalence starts to follow.

Surabhi Taori 46:34

Thank you so much. So that finishes our eight questions. We have time to take questions from the audience. So, all right, the first question we have from the audience. Who's like to tackle this one?



Katie Jeffery 47:08

I'll make a start if you want. There are a few different aspects to this. One of the issues is around staff, so I'm restricting my comments really to acute hospital trusts. I think if you even suggest that you're restricted to syndromic patients only, you'd have mass staff walk out. Staff feel very strongly that for their safety, their family's safety, the safety of the rest of their patients. The COVID status with every patient in our care needs to be known, I'm guessing that feeling is shared. I think, you know the staff very much feel that they want to know the status of the patients that they're looking after. Secondly, we know that asymptomatic COVID is common, and may stay as asymptomatic or it may become symptomatic, and you know we're all aware of, you know that young man who comes in with a broken ankle. The next day, develops COVID and may or not become symptomatic.

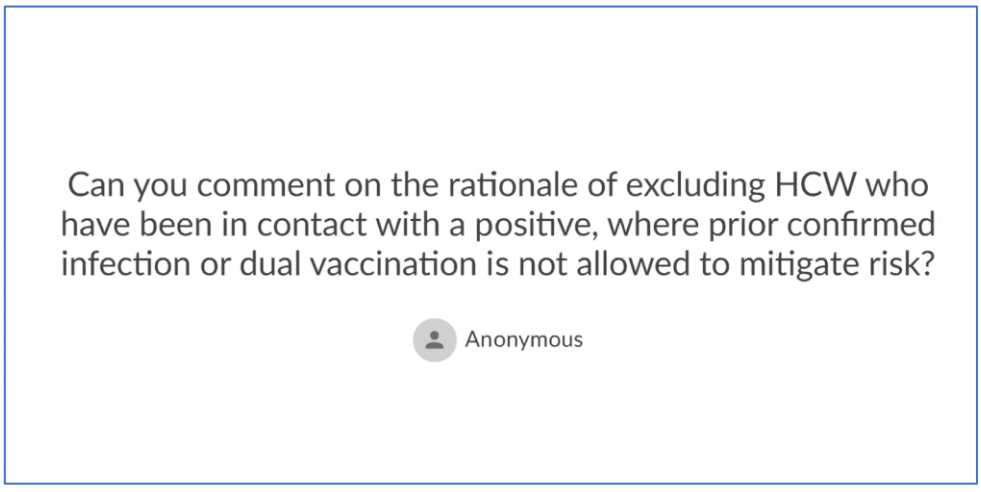
So, I think it's very difficult to imagine we are going to end up with a scenario particularly for emergency admissions where we're going to begin to see syndromic testing, really difficult. Having said that, we need to look at the workforce, and help them to gain confidence in the vaccine program, which has been phenomenally successful it's going to be only a very small number of cases, particularly those workers who are clinically vulnerable that breakthrough in vaccines such that they end up having very severe disease. I think we're all seeing colleagues and friends who've had two vaccines who are developing the flu-like illness and they're having a couple of horrid days at home in bed, but they're not coming to hospital and not becoming hypoxic the vaccine program for healthcare workers has been amazing, as it has for the whole country and I wish it could only be for the whole world. But I don't see as restricted testing to syndromic anytime soon.

Adam Gordon 49:21

Yeah, so I would have the geriatrician's response to that which is having looked after a lot of older frail people with COVID during the pandemic. There is no such thing as a COVID syndrome when it when it's prevalent in the population. Everybody that comes into hospital is COVID positive until proven otherwise because about a third of the patients I see have no typical COVID symptoms whatsoever, their most common and presented feature is delirium and anorexia, and by the way, regardless of what you present to the acute geriatric medicine - the most common presenting feature is delirium and anorexia, so you need to have set in everybody that's admitted, I think the only point which you make the transition would be a population prevalence falls to the point that pre-test probability is so low, they're actually doing testing doesn't really inform clinical decision making to any great extent, but we still seem quite a long way away from that. So, for me it will be more of a population prevalence, rather than any, any shifts in the clinical populations that we see.

Surabhi Taori 50:28

Thank you Adam, anybody else? Next question.



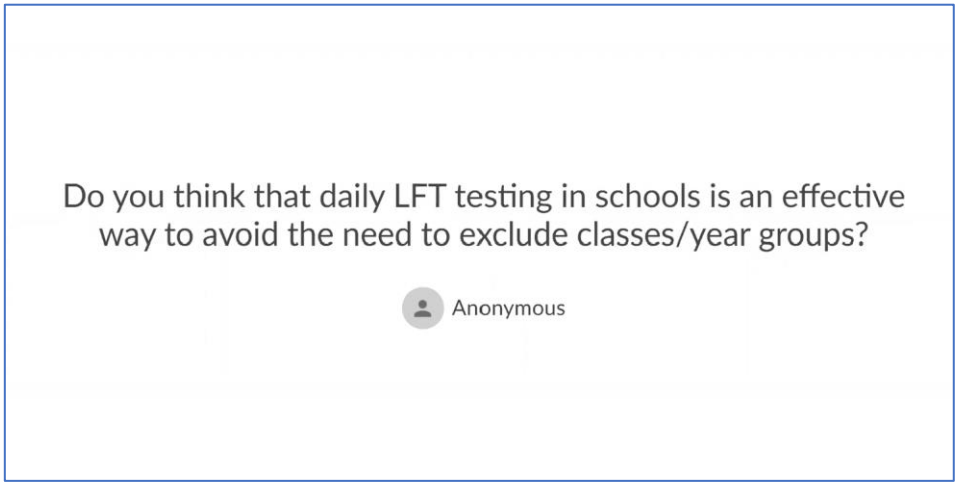
Katie Jeffery 51:09

I don't know if this question was written just now or prior to Monday but, dual vaccination is pretty much a requirement for being allowed to work on site with daily contact testing. I think, to allow

people to work, with potentially vulnerable people just because they've had the vaccine and not do daily contact testing to make a difficult shout.

Surabhi Taori 51:53

Anybody with a view on this? Next question.



Isabel Oliver 52:20

So, as it was mentioned earlier the results of the studies will be published on Friday. I've seen some of the information but I can't quite comment on that at the moment, just in terms of just generally the asymptomatic testing programme in schools. It's a program that overall has had lower positivity than in other groups, including for example healthcare has much much higher positivity overall but of course it varies. It varies over time. It's obviously helped identify cases as I said generally asymptomatic testing has done that. It is very costly because you have to have a very large number of tests that they can possibly identify. And so I think that, you know, those, those considerations will need to be taken into account in due course. And I suppose the other thing to say is, is that how schools have managed the impact of positive cases varies in some areas it's been at local discretion to how they manage and how many people, they send home when a case was identified is not necessarily the same approach so I think that there has been some discretion there and I think, you know, it just depends how schools themselves, manage the situation.

Mark Green 54:22

I think we need to get to the point where we think its not just testing, it's a broad range of interventions in particular it's having schools in which we've got a good amount of ventilation in classrooms, ideally some sort of social distancing and face masks as well, which obviously aren't a requirement anymore. So, I think testing is useful, I don't know what will be announced on Friday, there'll be it's useful, but it's only one part of our strategy. Really, and in particular I think we need to be worrying about testing fatigue. So, If you look at the data for school testing. You see, when the schools reopen it shoots up. Most people get tested. And we have the half term break over Easter, and then the number of tests never get anywhere near as high, so people sort of give up on it. Almost and the longer this testing continues, more likely people are either to not think it's for them, or you

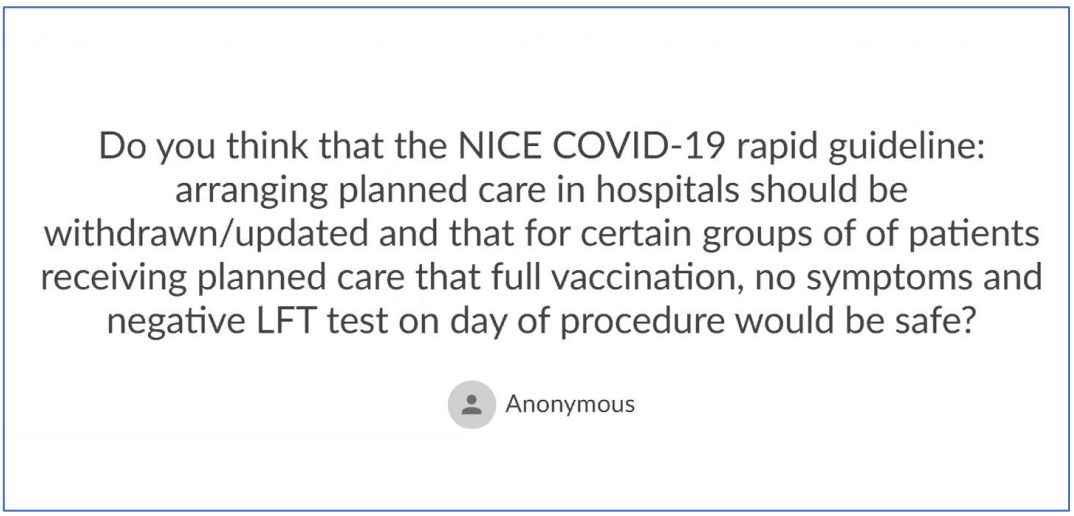
know, as we've seen on Tik Tok and these various platforms I'm not part of people find ways to cheat the system, or you know, get a kind of positive test if they want to miss school. So there's a lot of kind of issues around communication that we need to be leveraging but I think you know the key thing is testing is only one part of a broad range of strategies that can make schools, school settings a bit more safer.

Adam Gordon 55:54

I think, a useful concept which is from the health and safety literature is the idea of the hierarchy of controls and it's in some of the CDC publications on managing COVID and its now appeared in the HSE - Health and Safety Executive -publications in this country, and it's just a way of sort of visualizing where different types of controls fit into hierarchy or a logical hierarchy of how you manage inflation. And within those it testing is just one notch above PPP, which is kind of one of the last lines of defense and there's lots of other things you can do around, for example, ventilation, around buildings and care homes we talked about zoning and similar sort of sort of technologies can be applied in schools. So this idea of testing being just part of a suite of measures is really helpful. I think one of the things that really does seem to affect adherence with testing is frequency. As frequency goes up adherence drops. So there's clearly as a sweet spot, beyond which everybody stops doing as you're told. And just make your own mind up about what the what to do

Surabhi Taori 57:06

Do we have time for another question?



Katie Jeffery 57:49

Oh boy, this one, so I, I think that for certain groups of patients receiving planned care with full vaccination, no symptoms, and negative LFD tests on the day is safe, and those groups of patients that I'd be particularly looking at would be those having non aerosol generating procedures - simple day case procedures, cataract, endoscopy. Simple stuff. At the moment, were putting up all sorts of barriers, and overwhelming PCR testing labs with testing these individuals. We need to bring these patients in already we put in a whole set across the hierarchy of controls by reducing the risk of those patients have COVID. We should be looking after them with in staff with PPE social distancing, hand washing ventilated rooms, and then send them home again. I think it's perfectly safe. This is something

that we've tried to get moving and met a number of barriers and I think these guidance is going to be re-appraised, personal view again. I just want to get my Trust moving.

Adam Gordon 59:03

From a clinician's perspective - we need to do what we can to unstick the system because the system is very very stuck and PCR capacity is rapidly being maxed out, so if unsticking the system depends upon PCR capacity then with a self-defeating prophecy, I think I would absolutely agree Katie on this that we need to look at where the quick, easy and safe wins are and get on and do it.

Katie Jeffery 59:32

In addition, and I'm sure this is widespread, you know on-site testing teams for elective access are really struggling, they're being taken back into, you know their usual work, and there is a proposal they move to home testing. Now if you look at home testing those results are not going to be there when the patients turn up for their surgery. The procedures are going to be cancelled, there's going to be massive massive wasted effort going on and huge resource, empty theatres, so the whole thing does need a huge shake up.

Surabhi Taori 1:00:01

Okay, thank you. Thank you. On that note. We've just past 6pm and so I must thank Mark, Katie, Adam and Isabel for joining us today, and to the audience, for taking the time to attend and of course to Gama Healthcare for supporting us with an educational grant. For the attendees, certificates of attendance will be sent out after the event, our recording and transcript will be available on the website. Previous webinars and other COVID-19 resources are also available on the HIS website and have a look. For now we will take a summer break, and webinars will return in September. In the interim, we would love to hear ideas for future topics from our audience. And these ideas can be submitted by providing feedback on the session. So thank you so much, everybody. Have a good evening.