Transcript: Webinar - COVID-19 challenges and solutions 6. Unanticipated consequences of COVID-19 | 29 July 2020

Watch the webinar

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

- Evonne Curran NursD, Independent Infection Prevention Nurse Consultant, Honorary Senior Research Fellow School of Health and Life Sciences Glasgow Caledonian University
- Dr Manjula Meda - Consultant Clinical Microbiologist and Infection Control Doctor, Frimley Park Hospital
- Dr Luke Moore, Consultant Infectious Diseases and Clinical Microbiology, Chelsea and Westminster NHS Foundation Trust
- Dr Kate Templeton, Consultant Clinical Scientist, RIE and Honorary Senior Lecturer in Medical Microbiology, Royal Infirmary Edinburgh

Chair: Dr Chris Settle, Infection Control Doctor, South Tyneside & Sunderland Foundation Trust

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Chris Settle 0:00

We are just going to wait a few minutes until sufficient people have actually joined before we actually start the questions. But in the interim it might be useful if I ask the panellists to introduce themselves. So, Evonne?

Evonne Curran 0:13

Thanks for that. I'm Evonne Curran. I've been in infection control an awful long time. I started in '87. I now actually work for myself having latterly worked for Health Protection Scotland, working in outbreaks.

Chris Settle 0:31

Thank you. Luke?

Luke Moore 0:35

Good evening everybody. So my name is Luke Moore. I'm a consultant in infectious diseases and microbiology in London and a senior lecturer at Imperial. I have been particularly focusing on the last six months around the diagnostics of COVID rather than IPC. So, I think that's where I'm going to be answering my questions tonight.

Chris Settle 0:56

Thanks very much, Luke. Manjula?

Manjula Meda 0:59

Hi, everyone. My name is Manjula Meda. I'm a clinical microbiologist and infection control doctor at Frimley Park hospital. So, I've been doing infection control over the pandemic so that will be my expertise today.

Chris Settle 1:15

Thanks very much Manjula. We may also get Kate Templeton, who's a clinical scientist up at The Royal Infirmary in Edinburgh joining us. She's just has a few problems so she's not joined yet. And I'm Chris Settle, I'm a consultant microbiologist infection control doctor up in Sunderland.

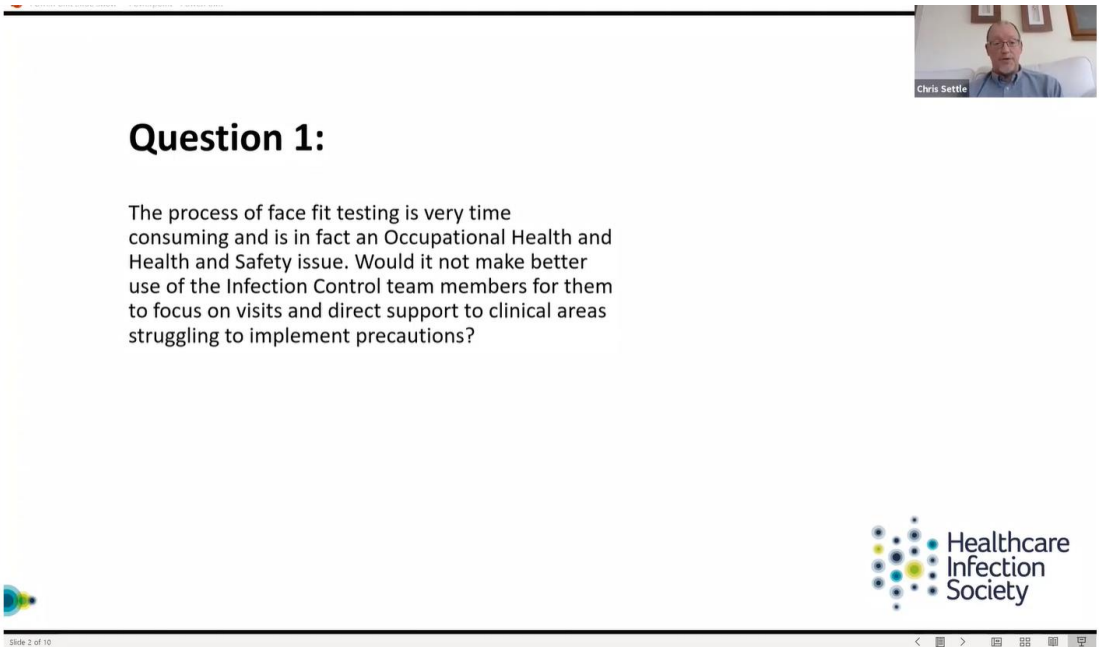
Chris Settle 1:40

Essentially, there were questions submitted by all of you before this webinar. And so some of those questions, about eight of those questions, have been selected - that we will work through and discuss. And that should be taking up the first 40 minutes or so of the of the webinar. And after that, there'll

be some questions that you can submit during the webinar, and we'll select some of those to have a discussion about, live. the way of doing that is using Slido. So if you open the Slido app, you can enter #HIS or you can scan the QR code that's on the screen to use that and by using Slido there may be some polls during the webinar which you can vote using Slido, or you can submit questions during this webinar discussion towards the end, also using Slido. Just going see how many people have joined.

Chris Settle 2:56

It's probably reasonable for us to ..we'll just wait for enough people and then we'll get the first question up. That's it. So the first question is about fit testing.



So that's the question that we're considering. If we perhaps start that one off – Evonne?

Evonne Curran 3:41

Yes - thank you very much. And so the IPCT is calling for help here. Because they've been left without a chair when the music stops, with regard to fit testing. So, there's two parts to this question. First is what are others doing? And there's an assumption in this question that all IPCTs are doing fit testing. And I don't think that's the case. And the second part is really how do you present an argument to get management to change a decision with regard to some aspect of COVID?

So, with regard to part one, I think we've all learned - and are continuing to learn - a tremendous amount and perhaps more in this year than in any other year, or combined in our years of learning. What we haven't learned a great deal about is the collective ways of doing practical IPCT. I think there's a lot of sharing our ways of working, that should come. Particularly as well, not just the good stuff, but when we've made mistakes, we shouldn't all fall into the same mistakes because somebody hasn't shared the mistakes they've made. So, I think a HIS/IPS joint or single evaluation of how we coped and worked and didn't work well, is needed. But in the interim here, I think phone some friends find out how they resolved the issue and what, what they've done.

But the second part is about how to present an argument for change. And one thing I wouldn't do here is assume that you know who should do this. Because throughout my career, everybody seemed to be assuming the IPCT should do absolutely everything and clearly they were wrong. So we might well be wrong in our assumption that it should be Occ. Health or Health and Safety. The tool I think we should use is situational awareness, and that was devised for pilots. And it's to try and understand why pilots, what were they thinking before they press the wrong button that nearly or actually crashed the plane? It can be very useful during outbreaks and it can be useful for any decision making. So, three components to situational awareness, perception what's happening. So, what's happening here is the IPCT is fit testing at a cost of however many whole-time equivalents per week, a month, whatever. The comprehension is, the second point so what, the consequence of this is one of organizational risk because they're doing that they will be unable to take on an outbreak investigation, monitoring of COVID preparedness, all of this and preparation for a winter surge. So the last point is the prediction, what will happen if nothing changes. And so if nothing changes here, if this resource is not returned to the IPCT or made up for you anticipate poor preparedness and an increase in COVID transmission. So, your suggested decision making in this case is that you're advocating a review of how best this vital task is undertaken, so that you don't deplete the IPC resource. So I think in summary, find out what others are doing to solve the problem, and then use this situational awareness to get others to see the impact this is having on your service. I'll stop there.

Chris Settle 7:10

Right, thank you very much Evonne, for that summary. Very useful, and certainly, I think you're right. It's not always been done by infection control at the moment, it historically has been - but that doesn't mean it needs to continue doing so. I wonder if Manjula or Luke have got any different experience of fit testing where they're working. Manjula?

Manjula Meda 7:33

We have tried to, I mean, historically, obviously here, it's been infection control who've been doing it. But we've tried to recruit link nurses and various other members of other teams who are willing and had some spare capacity to help us with fit testing. And we have also been able to invest in the automated fit tester, when we were at the height of the pandemic, so that you could train people very quickly and get them to do the fit testing. So, and it seemed to sort of tide us over the, you know, the very, very acute period. I agree it should be devolved into different groups and not just rely on a very small infection control team to do this massive piece of work.

Chris Settle 8:29

And Luke, did you have anything else different?

Luke Moore 8:33

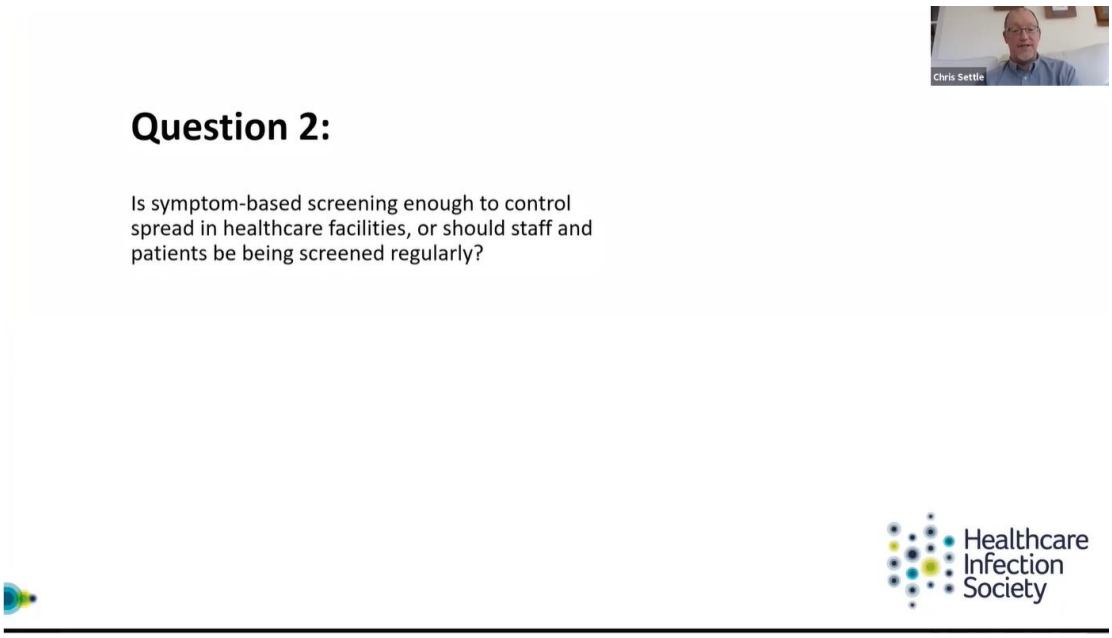
Yes - I'll just chime in with what Evonne and Manjula said. So, I mean, as I'm sure everybody did, we very early on set up an incident control team with infection doctors, infection nurses, and key members of the executive team. And it became very apparent then that our team is small - as I'm sure

infection teams are across the across the country, but also occupational health teams are perhaps smaller. So, we leveraged the of all people actually, we leveraged the executive nursing team who stepped up who were real champions in each clinical area, taking on the role of fit testing for each of the acute areas. And they really contributed, and we couldn't have done it without them. So, I don't think, as my colleagues have said, I don't think needs to be the responsibility of the IPC team. But nor should it be the responsibility of the OH team other than to provide direction and expertise, the actual doing the doing - I think it's reasonable to leverage clinical teams and executive nursing teams.

Chris Settle 9:37

Yeah, excellent. I think that's a similar situation that I've experienced where I'm working in that it's no longer done now by infection control, because of COVID, with the extremely great pressure there was to do so much fit testing, it was obviously impossible for a small team to do that. Similarly with occupational health. They're not involved. It's a separate team of people who are being built to do fit testing and they were purloined initially, a group of people to do it in the acute phases, but now there's going to be a bespoke team built, just to do it for the long term because it's going to be an ongoing requirement. We'd better end on that because I've already run over time.

So, if we look to question two.



I think Evonne might want to start us on that as well.

Evonne Curran 10:47

Thank you. I think we start with this one with a pragmatic approach. I know the Ruth May letter from June, where she said we are minimizing nosocomial infections in the NHS. She didn't say we can eliminate it, and I think that spoke volumes.

I'm going to give you four lines from four reports, but I'll Tweet them afterwards, the links to these papers, I think they have a bearing on the answer.

So, the first one is from Wong and he talked about 35 hours of undiagnosed exposure to COVID in 50 odd people, they did repeated testing but there was no spread to any close contact.

https://www.journalofhospitalinfection.com/article/S0195-6701(20)30174-2/fulltext

To counter that, we've got Zhou who reported on 40 outbreaks of COVID in hospitals where nosocomial infection was round about 44%.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7290630/

We've got the first paper, well I think it's the first paper that I've noted, from the UK from Rickman. 15% of their 435 cases were nosocomial or possibly nosocomial acquired.

https://academic.oup.com/cid/article/doi/10.1093/cid/ciaa816/5860253

And then a bit of hope from Wee, where he said, the reports on the accuracy of clinical screening got better over time. And they extended the clinical screening criteria, and they had no nosocomial transmission.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7262126/

So, I think from all of these, we can say that we are at risk from outbreak still, clinical screening is not 100%, but it can improve over time. Everyone's saying about this high transmissibility, which there obviously is but I think it ranges from low to off the scale. And I don't think we should get too confident if we have no secondary cases from an exposure – it doesn't necessarily mean our practices were brilliant. It might mean this person was not as infectious as some others.

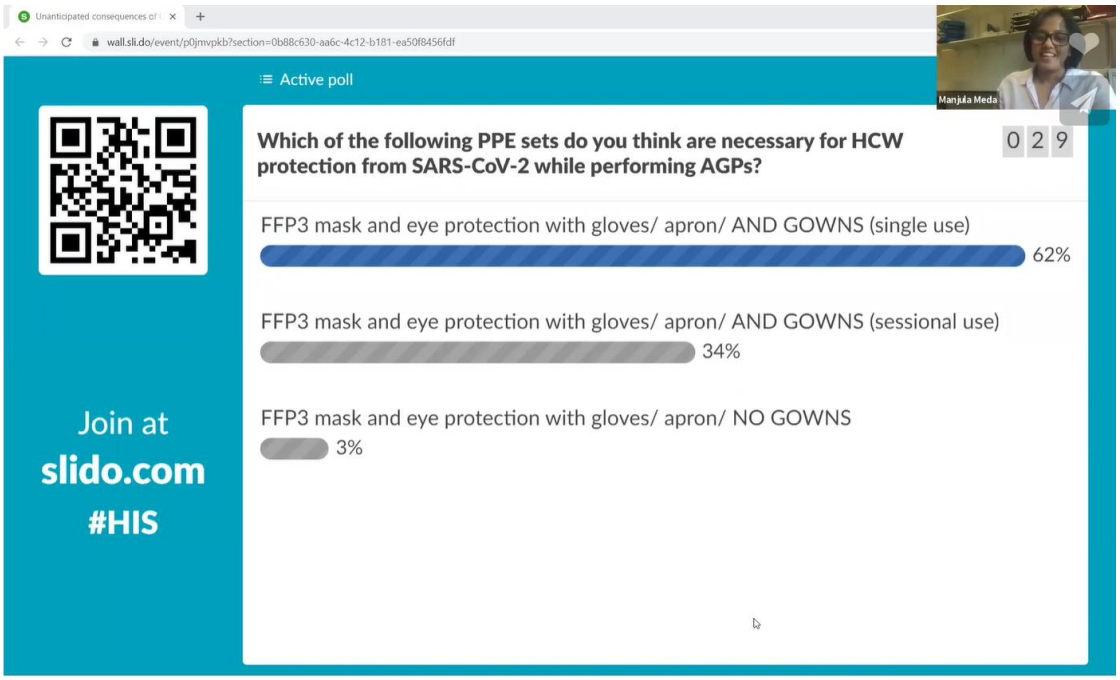
So, if we go back to the question is symptom-based screening enough? I don't think it is but I don't think any kind of bucket of money is going to move from minimizing to eliminating nosocomial transmission. And I think the solution here, very similar to the first one, is being situationally aware of your systems capability and vulnerability in regard to detecting cases. So, are your systems or systems that you think are in place, actually in place, is what you need to find out and one of the phrases I've been using is you got to take your COVID prevention temperature.

So, what's your compliance with all the key prevention factors; the hand hygiene, patient placement, social distancing, etc etc, what's your current accuracy of symptomatic screening? What's the instance of nosocomial transmission and has everyone who needs to have the resources got them? I think we need to remain alert for change; that Wee paper talked about using local intelligence. So, is there anything in the community transmission that your ED department needs to know that can help them ask relevant questions when they're screening? Where are you most likely to have nosocomial transmission? And are they aware they're the biggest risk? Are they getting data and is it being fed back? And obviously thoroughly investigating any identified or possible nosocomial transmission? So I think to summarize this answer, I'd say there is a risk but I don't think money and screening can eliminate it. I think you might get full sense of security, but you need to maintain an accurate situational awareness of your systems and share that awareness with your colleagues. What do you think situation is? And keep taking this COVID prevention temperature of your key areas. And I'll stop there.

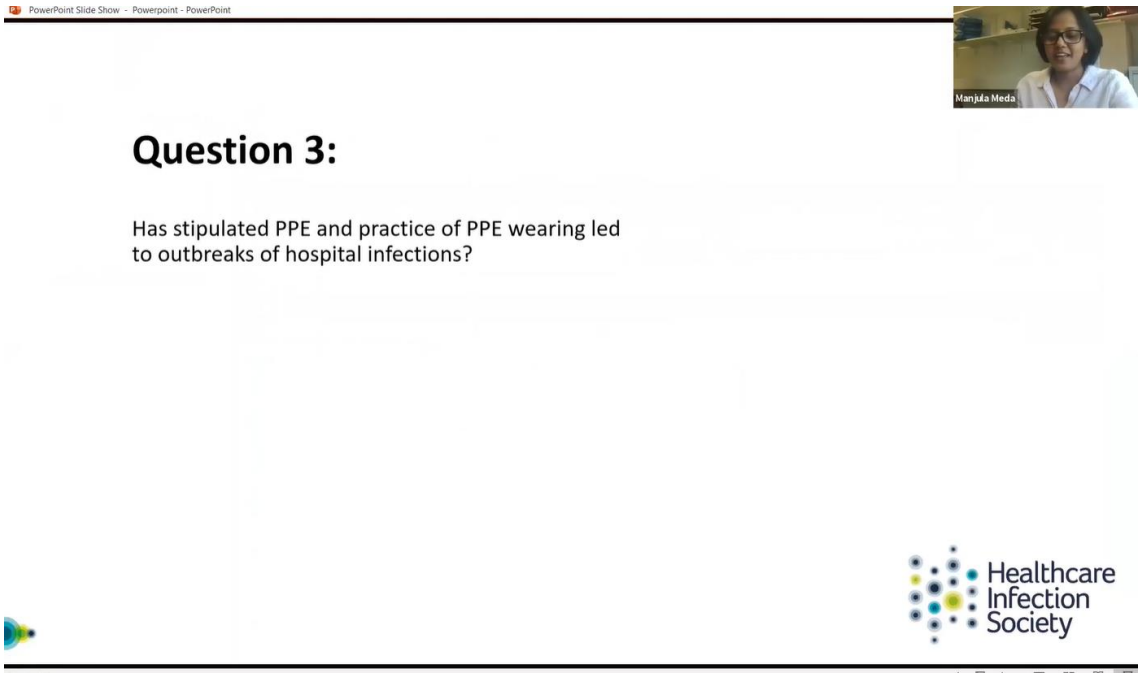
Chris Settle 14:22

Thanks very much. It seems to me that a simple one size fits all solution seldom is the right one. Simply introducing screening of staff on a frequency across the NHS will be likely to waste enormous amounts of money, and divert it from where it could be better used and confuse everybody with results that we're not entirely certain how to interpret, when actually normally in outbreaks we respond to what's happening as you say, Evonne. And if there's a problem in a particular area, we try to say we might want to screen staff if something's happening in a certain place. We don't go and screen the whole hospital. We do it where it seems to be needed. But at the moment, it seems that - I don't know - the response to COVID seems to be all encompassing rather than focusing on where the best use of time and energy might be, so we'll have to wait and see. Thanks very much.

We've probably got to move on to question three. So, I think there's going to be a poll first for the audience to consider. And after that, we will move on to the question. There we go.



We got somebody who's looked into this who is eager to tell us a bit more about it once this poll is stabilized. At the moment it's interesting. I'll let Manjula, interpret from her perspective as well what we've got on our poll, which is that the majority of people feel that single use gowns are preferable to sessional use gowns.



Manjula Meda 16:42

Thanks, Chris. Yes, interesting to note. So, just want to share a little bit of experience that we had in our unit with sessional use of gowns. So during the peak of the pandemic, I mean, or a few weeks into the pandemic, we started off. We've always had gowns obviously for all AGPs but I think what we noticed was with the, especially when the sessional use of gowns were introduced, I think was in the beginning of April, that our hand hygiene compliance in intensive care fell quite considerably.

So, and the second thing we noticed that is we had a cluster of central line infections within a small unit of 12 beds. We had about three central line infections over a very short period of time. And this is sort of unprecedented for our unit, especially and two of which were Gram negative. So there were three infections, two of which were Gram negative. And what we then also saw was a 3x increase in the number of Klebsiellas and other Gram negatives like Enterobacters and Pseudomonas that we isolated from blood cultures, as well as from other sterile sites. So this was, this was something that we had not seen before at all. So, what we did was we did some environmental sampling in intensive care. Just very simple, really straightforward looking for enteric Gram negatives in frequently touched sites.

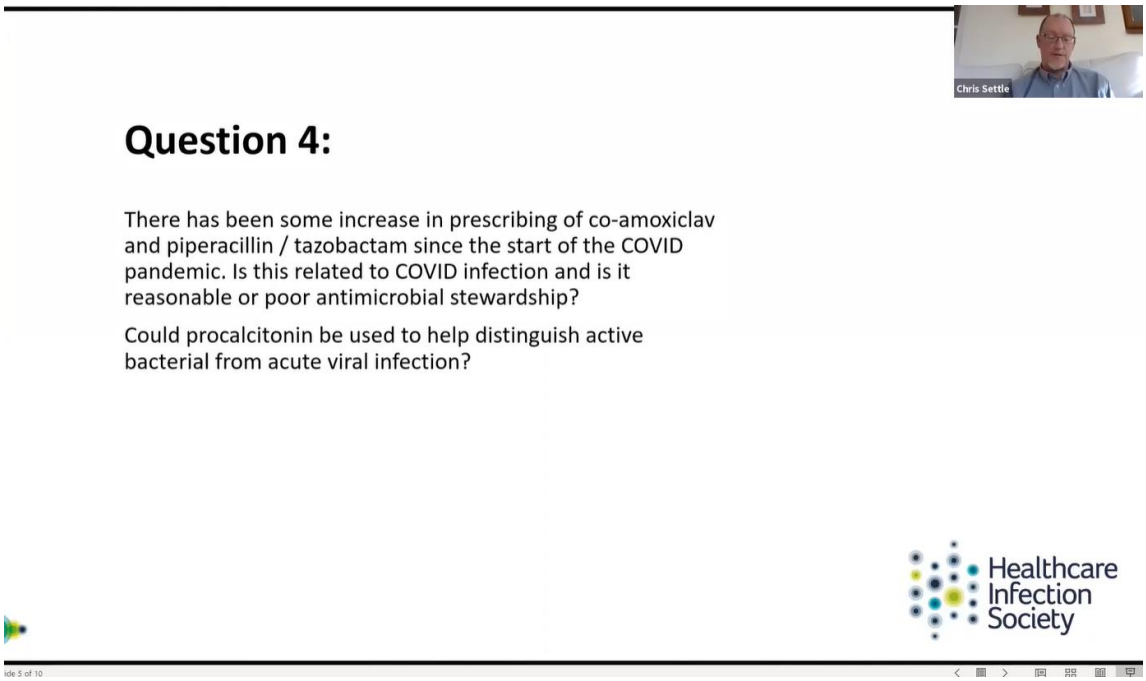
And we compared the same in two of the general wards. One was a COVID ward with COVID patients in it where staff were using obviously masks and aprons and gloves but no gowns. We also, we also sampled a non-COVID medical ward, where it was universal precautions as required. At that time there wasn't universal masking, but we always recommended masking for staff. So, but gowns not used in these general wards. So, it was not as much surprise but in the critical care areas we found at least 12% of the sites colonized or we detected these enteric Gram negatives, whether it was Pseudomonas or Klebsiellas from frequently touch sites. So these were from for example from IV trays, which were clean and ready to use, or whether they were from monitors or bed rails. Whereas in the general wards in similar areas that were sampled, we did not detect any enteric Gram negatives other than obviously, environmental Gram negatives like Acinetobacters or environmental Pseudomonas.

So, we had to put two and two together, especially in view of the high number of infections, the central line infections we had seen and the high number of Gram negatives that we were isolating from sterile sites, we decided to first of all clean the entire, so over a weekend intensive care was cleaned and after long debate with all the staff and other intensive care colleagues, we decided that we go with short sleeved gowns. Okay, so we moved to short sleeved gowns, cleaned the entire unit and then re-swabbed after a week's time. And we haven't detected the same amount of Gram negatives in the environment. And obviously, we don't have any central line infections since. It's just really a surrogate marker. I mean, given that this is a respiratory virus, and given that, you know, this is the gowns, in my opinion at least, impeding hand hygiene quite significantly, I'm not sure we can justify the use of especially sessional use or full sleeved gowns for respiratory virus which is predominantly spread by the respiratory route. If you actually go back and look at all the evidence for using gowns, all I could find was a study from the 1980s which showed that there are from with RSV that there was when you inoculate gowns with RSV, you can still isolate RSV from the gowns onto the hands therefore capable of infection. But the amount of RSV on the gowns reduced rapidly within 30 minutes. So we just need more evidence really for appropriate use of PPE in a pandemic which involves a respiratory virus. I'll stop there.

Chris Settle 21:43

Thanks very much Manjula. It's obviously a significant problem that many trusts have experienced and I think quite a few have adopted the same or come to the same conclusion that you did, which is that really, from an infection prevention control perspective, using a long sleeved item of clothing as a sessional piece of equipment is going to make a problem with hand hygiene. And it's been shown by yourself and others that some of the Gram-negative infection rates have gone right up. And I think when you stop doing that, and they go down again, it really makes you think that's probably the reason. And certainly we're not really recommending sessional gowns anymore.

So if we think about the next question, which is this time going to be about antibiotics to do with antibiotics.



If Luke - would you care to comment on it?

Luke Moore 23:13

And, I mean, I think it's a problem that we've all been addressing, right? So, certainly for myself and my trust when we entered into this in February and March, I was thinking of this as being a flu type thing. And we all have a reasonable idea of the frequency of secondary bacterial and fungal infections post severe flu. And we all have an idea that that number is a reasonably high number. And fairly early on Tim Rawson published the NICE systematic review of other coronaviruses. A few early papers coming out of China on COVID-19, but the majority on MERS and SARS-1 and found certainly less than 10% of patients with those coronavirus pneumonitis' got secondary bacterial infections. We put out some, Stephen Hughes and colleagues here, have put out some local data looking about thousand patients finding similar numbers. So at presentation in 3% of people have secondary bacterial infections rising to 6% percent across patients whole stay, compared to of course, 70 or 80, possibly even higher numbers of patients in the first wave getting an antibacterial agent for this, predominantly as I said, viral pneumonitis picture. So certainly there was in wave one an excess use of antibacterials but I think all of us have grasped that and in wave two, we're going to be a little bit more focused. Part of this question specified two specific antibacterials, Co-amox and Piptaz. We again here in our section of London very early on, moved away from Co-amox, going to Amoxycillian and Doxycycline and it was rewarding to see the NICE guidelines move in that direction when they came out half way through first wave. And then in terms of Piptaz, I mean, I guess we use Piptaz as much as everybody else for the later on healthcare-associated pneumonias, and indeed the frequency with which COVID patients went to ICU, meant we did see an excess of healthcare associated pneumonia. And I think it's reasonable to use Piptaz in these cases.

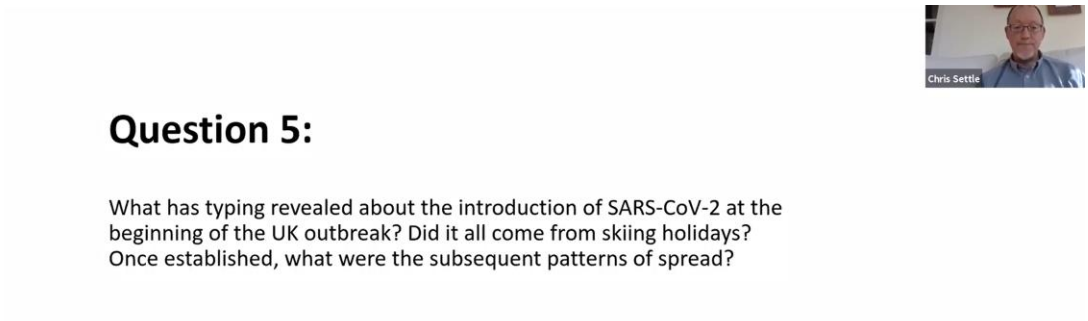
I think it's got to be in the context of all of this antimicrobial suboptimal use, that's got to be put in the context of us as the aforementioned nature of being small infection teams, having repurposed priorities. And certainly a big part of my 2019 job was in antimicrobial stewardship, but I have been unable to focus on that in 2020 because we're all focusing on other things. I think there is an infrastructure issue that we just need to take this breather this July, August breather to just refocus on antimicrobial stewardship as infection teams reprioritize it both within our own groups, but also up the executive hierarchy and our trusts and not lose track of that as a priority area.

Part of the question was specifically on Procalcitonin. So we all know that CRP not up to distinguishing pyogenic from non-pyogenic infections. There is some data that Procalcitonin might be able to but there's all kinds of caveats around that, in that if you do Procalcitonin too early, and our certainly our experience when we're doing time zero, when COVID patients were being admitted, we were getting unexpectedly low results, and then we repeated it 24 hours later. Now, I know you shouldn't repeat 24 hours later, but medics are medics, and then of course on that 24 hour period later then shoots up. So, I think if you're going to use Procalcitonin, my advice would be don't take a time zero Procalcitonin. Take a time 12 hour or 24 hour and perhaps use it to do an early cessation rather than rather than influence time zero prescription.

And the other thing, which I think some organizations now starting to get access to is aisle six serum assays and I think again, I'm not I have no experience on it, but I think none of these biochem tests are going to be a single shot answer. And so I think we've got to put it in the wider context of the patients, but quite what those nuance variables are going to be. We're still learning together, right?

Chris Settle 27:16

Thanks very much for that insight into the issues of antimicrobial stewardship, which I agree everyone's been challenged by. We want to consider there's another question now this time it's going to be slightly different about typing.



What

We've been joined by Kate Templeton from Edinburgh. So Kate "Hi" to you. If you wouldn't mind introducing yourself first and then if you could consider that question, it would be great.

Kate Templeton 28:23

OK. So my name is Kate Templeton and I work at Edinburgh Royal Infirmary in NHS Lothian. For the purposes of answering this question, I'm part of the COG UK consortium, so COG UK was set up by Sanger and PHE under the leadership of Sharon Peacock and as essentially got going to have the wrong number of sites, so 16/17 sites across the UK, all doing the sequencing and the idea is that now we've got these amazing sequencing tools, we can deliver rapid sequencing and that can be done, we're aiming for 48 hours - but I think some are aiming for 24 hours. So which is a huge change to what has been available before. And this is the whole virus being sequenced. And what we can say from I mean, in us who have published on this so, we particularly focused on what happens in Scotland, but it's not actually much different to any other parts of the UK where a lot of introductions of COVID-19 in March and in Scotland, we've had over 100 I think 114 in single introductions, different viral strains coming into Scotland, from travel, mostly from Spain, and from France, and from Italy and those are all common places that people were more likely to be traveling from. The dog's just interrupting me at this point. So we saw a lot of introduction, I think one of the other parts of the question, and that's one of the things that worries us right now, with, you know, are we back in February right now? And are we going to feel these different introductions coming in? I mean, we could even see in the same household, people with two different viruses in the household who've both been in Italy. We have thought about recording sort of the location that came from the idea of calling at the three valleys, so putting a mountainous bit of Italy, France, and Switzerland, Germany together as a region of where lots of introductions came from because certainly skiing was one of the things I think rugby was

probably another of the things that gave us a certain amount of introduction, and, and so but it's kind of what to do with that now.

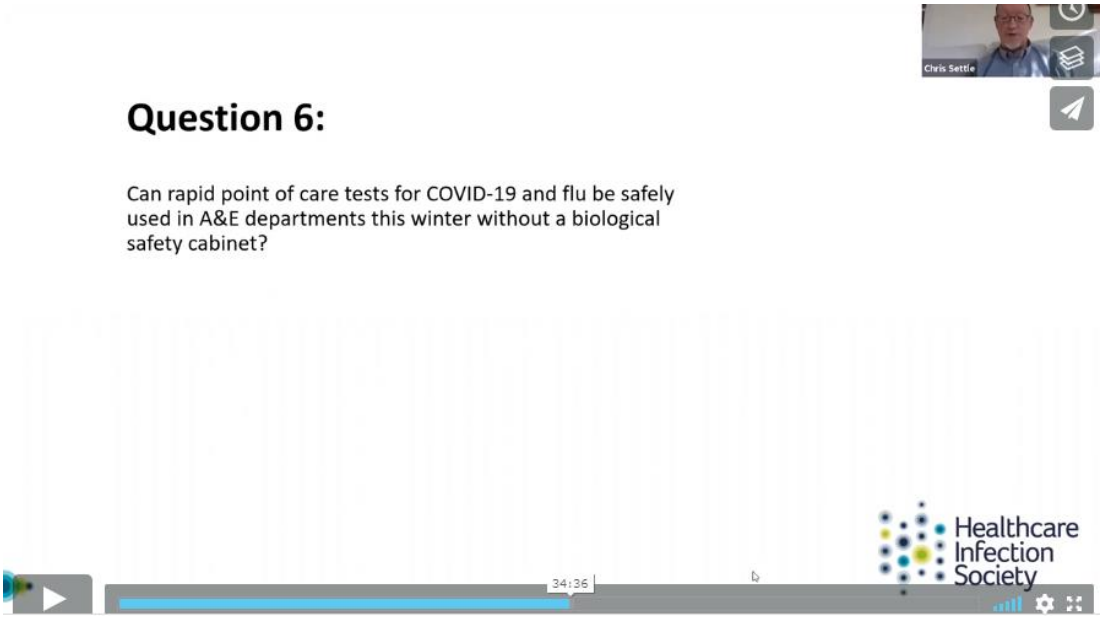
So, we knew we had lots of introductions and we were seeing all of this come in and we saw these multiple different strains. And this meant that we suddenly had all these introductions. And then a few weeks later, we then escalated up in the graphs and saw lots of cases, and how we use that data now. The idea that probably if we can see these introductions happening, that we can isolate them. We certainly had one case in Edinburgh, which was related to what's called the Nike conference, where we, this was very much in early late February, early March, and there we were able to do the public health actions to stop spread from that one conference. And so I think it is possible. And that would be a great way to use the PCR testing alongside sequencing testing.

And so the next question I think was around what's happened now, or what's happened during lockdown with the viral strains. And what we've seen in Scotland is because of lockdown, and the virus the way it mutates, usually, we get about two mutations a month, we'd started to see, you now have a border strain, a Fife strain, an Edinburgh strain. I mean, obviously, there's some movements around, but you can see specific locations because of the impact of lockdown. And which is if you have a really good baseline, it means that as people start to move around more, we'll be able to say, well, you've been in Edinburgh, you've got this Edinburgh strain. So, I think that that's, and that's interesting. And the other thing that we have obviously seen of, in in the UK, we're looking at the impact of that because we've got been able to look and see some transmission markers in the virus or some morbidity markers in the virus. And certainly there's a mutation D614G, which potentially makes the virus more transmissible but maybe not quite as pathogenic. And, and we're doing more work on that to try and understand whether that but it's very widespread. It's almost really the dominant marker of that virus. So there are lots more things to understand, have I answered all the bits?

Chris Settle 34:03

That's very interesting and certainly throws an insight into the, you know, the work at a molecular, molecular level and what, how useful potentially a tool might be in tracking outbreaks and saying, you know, what cases are linked to each other. So, I think that's very helpful.

If we just move on to another question which is plaguing some people thinking about the winter coming, and that is, obviously we we've used flu PCR point of care extremely effectively to help us in infection control, and manage and reduce transmission of flu and the suspicion would therefore be that perhaps if we did the same with COVID it might be extremely helpful however there are various concerns. So this is the question:



Would you want to answer that one as well Kate?

Kate Templeton 35:12

Okay so we've been doing some work on this is all around inactivation of the virus, and what we've been working on is developing or looking at manufacturing the Lysis buffer which essentially is used by was published by Rene Boom whom I worked with in Leiden all those years ago. And that has then been used in the bioMerieux Lysis buffer for a long time, but it means that the recipe was out there so I think quite a few labs have made this. And then we've worked with the Roslyn Centre in Edinburgh, and who've cultured the virus, and then looked at how this inactivates the virus and effectively inactivates it very well along with other Lysis buffers that means we're also able to compare heating and other things that maybe don't work quite as well. And from the work on looking at the Lysis buffer, we were able to then think about adding Lysis buffer to a viral transport medium so to make a medium *inaudiable* would kill the virus, and then would mean that it could be done on the point of care you know in A&E because it's such so then we've been worked with in Scotland, we've worked with a company whose then manufacturing this, what we call VP SS so viral, transport medium and with Lysis buffer. And, and then this is then able to be put in your hospital, and the swab is then taken directly into this and then as long as you wait 10 minutes it is then inactivated, killed and then you can then put on your point of care testing devices. The only problem with that so we've shown, and then you have to show that that then is compatible with your point of care devices so we've shown that this works fine, so far with Cepheid and with *inaudible* and we've got some others on the, on the go. But ultimately, there's probably not going to be very many Cepheid kits for us because they're all going to South Africa and South America. So, we have got a solution, which will work nicely, but I'm not sure we're actually have any, any cartridges to be able to do this with.

Chris Settle 38:07

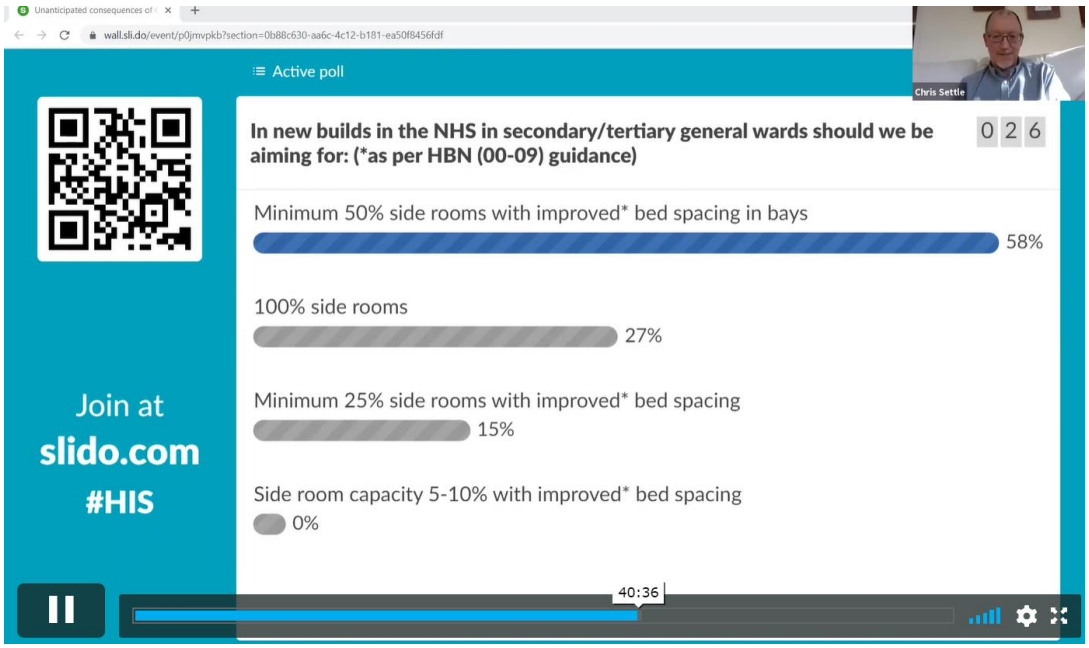
Yes, that certainly could be a problem we'll have to see but if there are maybe that can give people a little bit of reassurance and allow them to consider using such things. Luke, if you would.

Luke Moore 38:20

Yeah, thanks so much. So I'm in awe of all the work that Kate and the team have been putting into this. For those of you south of the border who subscribe to PHE and I'll read this off the screen so I get it verbatim right off the Gov.uk website there's the COVID-19: PhD laboratory assessments of inactivation methods, and it's got lovely documents all in there for those of you south of the border that want to dive in. The other thing I would just mention is that there are now of course some platforms coming online that are viral transport medium free, and our inoculation of cartridge, directly with a swab at point of care. And certainly for those of you in the southern half of England who have heard of the nudge system that is such a system, my trust our neighbouring trust and the JRL up in Oxford have all been trialling this and it's a nasal pharynx swab straight into the cartridge, no safety cabinet needed no aerosol generating procedure in the laboratory there, and then you put that cartridge with its bung in, and you can take it to where your machines are and put that sealed cartridge in there. So, I think as these, as all the work, Kate and the team are doing and as these VTM free devices come online, there will be a point of care answer for the Autumn I hope or else we're all in trouble.

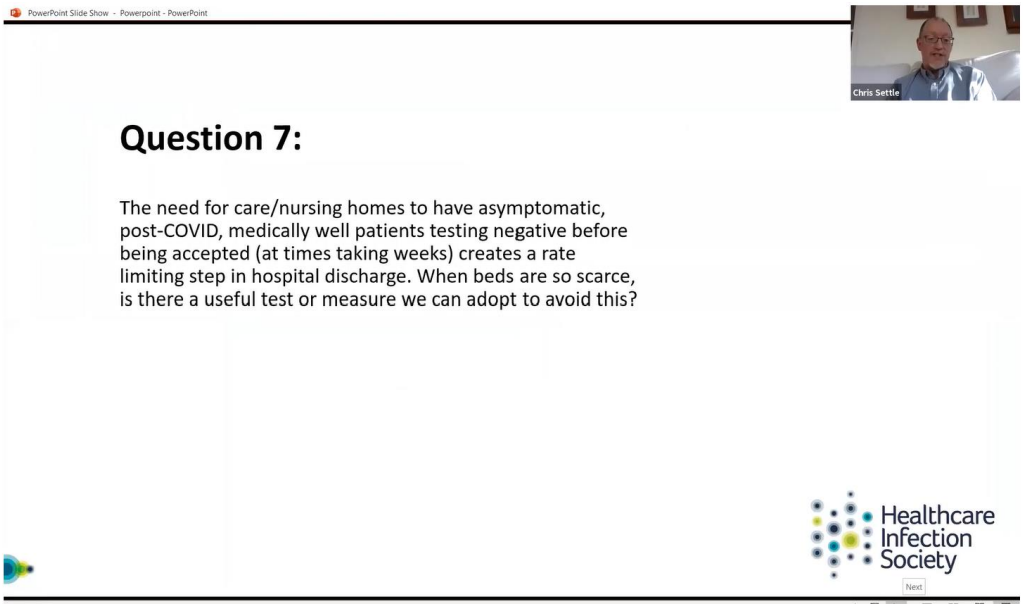
Chris Settle 39:44

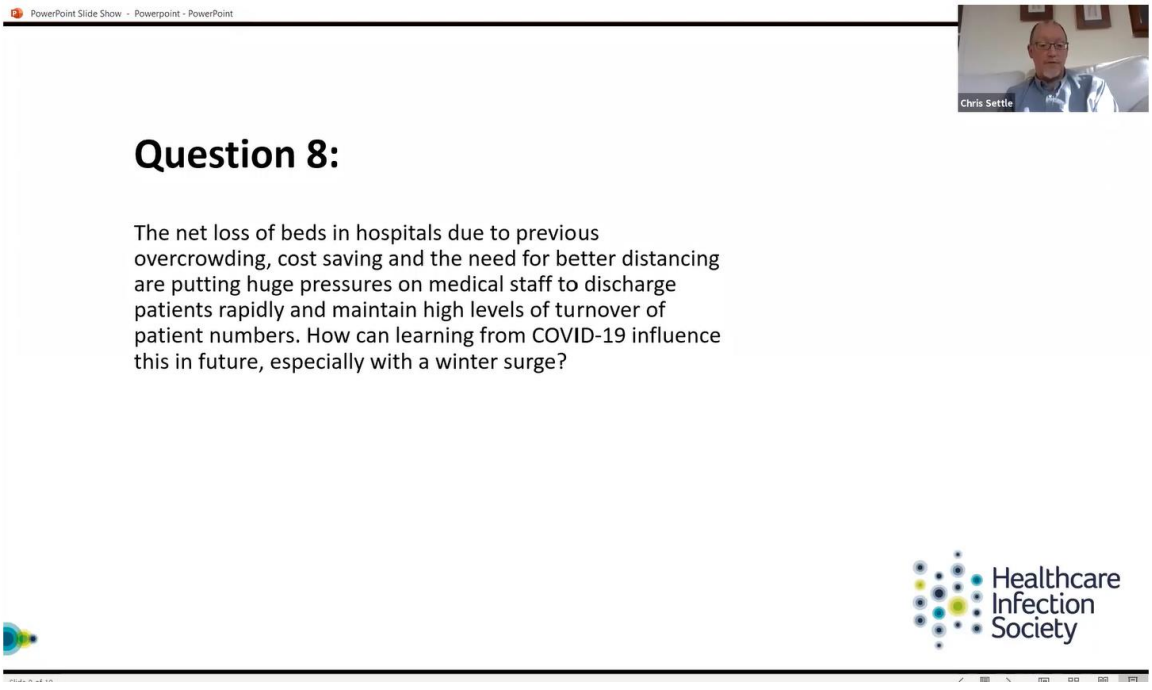
Right thank you. So, we've got another poll for everyone to consider before we move to the next question. This time about, you know, NHS estates and what how it should look and its about how many side rooms do we think we ought to be having in our in our estates ranging from 100% to 5% to 10% with improved bed spacing, which I think a lot of hospitals now that are built will have improved bed spacing anyway.



Interesting that the majority haven't plumped for that potentially inaccessible 100% side rooms so how many we got votes 26 - so middle of the road for most people.

The majority, suggesting 50% which obviously is a significant improvement on what most hospitals currently will have I think many are probably below 25% so there are a couple of questions we will maybe consider both of them because we've gone a bit short of time together. So the first of the two is about essentially nursing and care homes, insisting on asymptomatic patients with a negative test before they will take them, creating a backlog in hospitals, and what measures might we be able to use to avoid that. Maybe if we get a look at question eight, which is also in this same area about loss of beds due to the current situation like increased distance and discharge pressure being so high. What can we learn from COVID influence? What can we, what how can learning from COVID-19 influence in the future, especially with a winter surge to try and permit the patients to flow correctly, from secondary to sort of care home accommodation? Now, if we move to Manjula.





Manjula Meda 42:09

Thanks Chris. I'll take the second question first – about bed spacing. I mean I think what we have seen across all hospitals, what we certainly saw here was that the spread of COVID within wards within hospitals it was the same whether it was C. diff it was the same wards which had more higher incidences where we knew C. diff was higher or MRSA spread was higher, transmission was higher or VRE – those kinds of organisms. The so call high risk wards within the hospital - those were the same wards that had a higher risk of transmission of COVID - is what at least we saw in our hospital. So this is not something I disagree with really - We all know that you need more beds, the better the bed spacing, the more side room capacity, you lessen the risk of healthcare associated infections, not just COVID - everything else as well.

And it's not just the bed spacing and side rooms as well, it is a how many sluices you have, how many clean utilities you have. How big is your storage, how's your storage, is the ward decluttered enough to enable efficient cleaning, and all of those factors, and how many toilets are there per patient? So, all of those factors, I think, sort of play a role in infection transmission. And that's why I suspect, we see the same wards having outbreaks. Whether it is MRSA, C. diff or whether it's COVID, over and over again. So I think I mean there's no magic obviously one that we can fix this overnight. It just needs a long, long plan on how we can fix this. In the new builds perhaps or whether it's decluttering wards, or making use of these wards in a more efficient manner. So perhaps not having these high-risk wards for use, for vulnerable patients who we know maybe a very high risk of acquiring COVID infections during the winter months.

And I think what I would love to see some kind of legislation, which would say that this is the minimum amount of bed spacing that you need, in more areas. It's all there in health building notes, but we don't see that in 100% of the hospitals still, although they've been there in these documents for several years now, or mandate these in the CDC inspections. That's about the bed spacing - and I'll keep that short.

Within the second question about the nursing homes and testing. And I think Chris has already said this and Evonne probably as well. The testing, in my opinion I think has to be focused. We just can't test anybody everybody at anytime. So, a negative test may not be truly negative. But are we testing at the right times? Does it mean a negative test means that it's fine, and they don't need any further quarantining or risk assessment when they reach the nursing home. So, I think better than having a negative test alone to discharge patients into nursing home would be would be a risk assessment to assess what is actually the risk of this patient having COVID. And having plans in place to manage that when they are transported to nursing homes - for example - the same things what we do in hospitals: having side rooms and isolating for a time period, or seeing what the prevalence is in the hospital, have they had any outbreaks? Those kinds of things, rather than this blanket screening of everyone all the asymptomatics especially during the time, whether it's low prevalence or high prevalence. So, I think I'll stop there, in view of time.

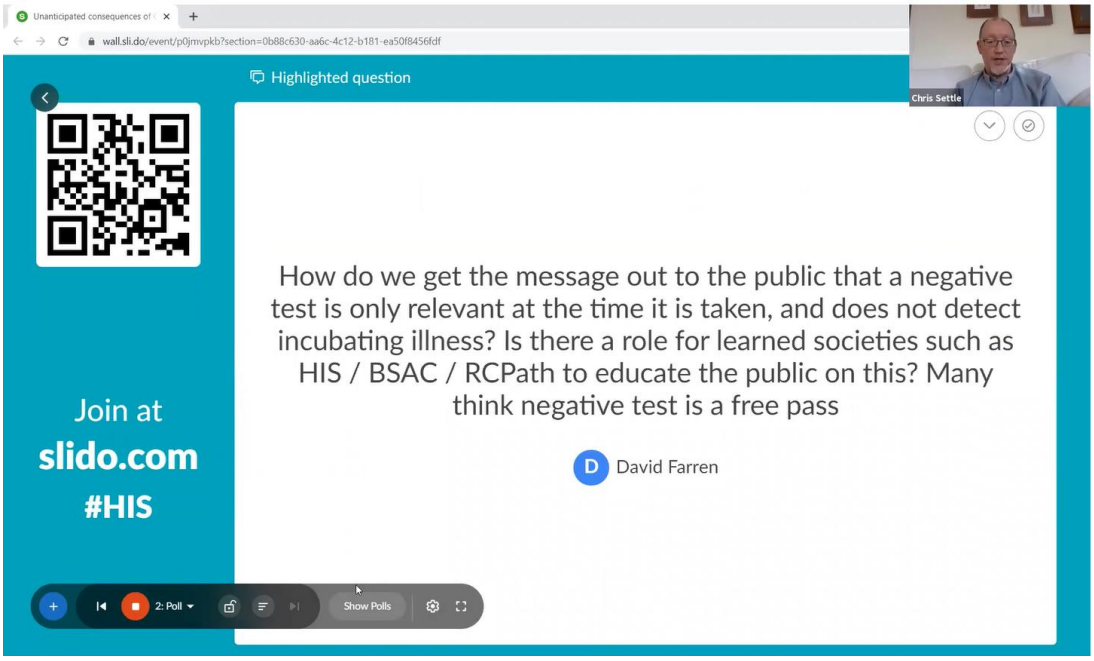
Chris Settle 42:26

Thank you very much, Manjula. Certainly, it does seem to cause a problem, and trying to explain to a nursing home that a patient, from a clinical perspective, is not infectious. Without doing a test seems to be very difficult. And I don't know if that means that there's got to be some additional pressure

from, you know, governmental source or somewhere else to help reassure them that it's not crucial to get a negative test. Some patients are positive for an awful long time when we don't think they're infectious and there's no point there's patients sitting in a hospital bed, whilst there are a lot of other people needing to come in for various reasons. But obviously there's a disconnect between what's understood in that care home setting. And what we think we understand. And then it's trying to resolve that disconnect that's probably the biggest challenge.

I think we've probably more than expired our time for the questions that were already submitted. And I think we're going to look to see what other questions might have been submitted during this webinar.

So more while on the live questions. So, if I just go through this one, and then we'll see which panellists might be able to assist us.



Though obviously recently in the media politicians and other people have been talking about this, and reporters on news programs have been making these sorts of comments about "Well, why don't you test them on as they come off a plane?" as though that's going to help. And how do we get the message out? Does anyone have any ideas?

Evonne Curran 48:35

I'm just going to say that in Scotland that there's just been one voice. Well two voices: Nicola Sturgeon and Jason Leach. And having one voice that everyone has trusted and served - big, and large - in the community. So, you know, if Jason Leach says it, people are believing it, I think we lost that one scientist that one voice, and I would recommend you get one, quick.

Luke Moore 49:18

Just, just to answer that. I think it may not just be one individual person's voice but it may be one organization's voice, and although amongst us all as professionals we recognize the Learned Societies

– HIS, BSAC, BIA - I think there is a possibility of there being slightly different slightly mixed messages if each Learned Society started putting out, public consumption data, or public information. Talking to non-clinical friends - they know - for better or worse - they know PHE - they know Public Health England. And so I think it's, it's got to come from them and DHSC, rather than from the Learned Societies. That's not to say the Learned Societies can't support, but they need to support in a different way that's in my mind, not public information.

Chris Settle 50:15

Yeah, I agree. It does seem its more how those Societies can help influence PHE. As we've seen with Learned Societies of every College in medicine and surgery, what damage it does when they decide to just publish their own stuff, which is totally different to the national picture, and that's created a lot of the anxiety that you mentioned earlier, Luke, that we are trying to resolve. Staff in the hospitals that want to do things that are not what we want to advise them as safe because there are lots of competing voices, with different advice. And so, Evonne's correct - one voice, one advice is definitely better. And I hope we've learned that, and we don't fall into the same pitfall by ourselves all shouting and screaming different advice to people.

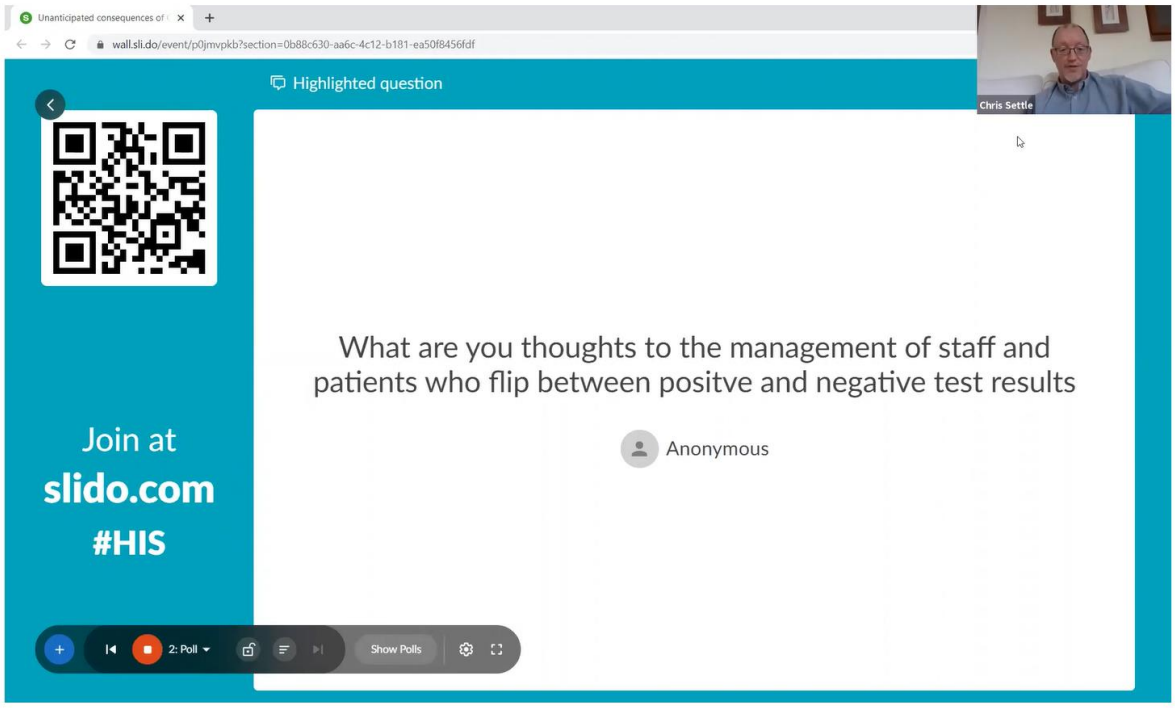
Kate Templeton 51:09

I think it would also be good if we were better at being part of the media. I mean, most of us have been on the TV once, but it's not something that we're all jumping up and down to be out there. But I think some of the examples when a group of people wrote about antibody testing and said this is the BMJ - that got good coverage around, they got the message right there. I think if there was a group that wrote and got an article and got that right media message around it "This is what PCR means" that actually then did feed into the mainstream media, in a way that was well understood I think that would be good, but we're all busy with just trying to fire fight - certainly in the NHS. You just find yourself doing reactive messages, and certainly our Lothian comms, anytime I'm speaking outside to anybody else I'm suddenly the University of Edinburgh, I'm not NHS anymore, because it's much easier for the NHS to only deal with reactive stuff rather than proactive. We are a little bit of our own worst enemy. We could be better at getting our message out there.

Chris Settle 52:51

Yes, we ought to try and learn these things - hopefully in time.

Adel, any other questions?



Luke Moore 53:20

I can pick up half of it.

So, I'm assuming here we are talking about people are flicking between positive and negative PCR tests rather than anything more technical. There was a wonderful paper early on in one of the nature portfolio by Wölfel, and the German group who looked at 10 Germans and sampled every single bodily fluid you can imagine, every day until day 28, and they both PCRed and cell cultured it. And it showed by about day, 8 ish, you are unable to cell culture secretions certainly from respiratory samples. But the PCR positivity amongst their cohort died down after that, but not to zero - so you could detect these people episodically equally with presumably fragments of RNA. And that is that was an early, small sample size, replicated in the scientific literature and replicated in all of our general clinical experience I imagine.

And until we are clear, that that is the truth, and that these are fragments of dead RNA, certainly we're adopting a precautionary approach and treating them as if they're infective, because we know no better. And it may be that once we enter the autumn crush and have side room capacity issues we have to tail back on that, and that's certainly our approach at the moment.

I think the other half to this - and that's why I was slightly cagey about what the question actually refers to start with - is of course antibody positivity. And whilst most assays out there measure anti nucleocapsid - which we suspect from animal models is non neutralizing. Some assays out there are now starting to measure anti RBD antibodies which, in animal models is suggestive of being neutralizing and confer some degree of immunity, whilst you have them, how long they last for and whether there's a change in antigen means that they are no longer avid after several months, so we don't know. But I think we we've certainly adopted the approach for these prolonged intermittent PCR positive patients of looking at their serology, not just their anti-nucleocapsid perhaps because we have the ability to also looking at their anti RBD and working that into the mesh.

Yeah, that's my two pence worth.

Kate Templeton 55:49

I mean, I can say that we've we we've certainly seen the same in Lothian, and where we have people who tested positive in April, March, and they are still positive now in July, and they may have been sometimes negative in between or they might have been positive, and sometime in between that. It is a real challenge when they come up with positive again. You know, if somebody needs surgery or something like that, you'll feel they're then pushed back into this positive cycle of they've got to be managed as a positive patient and they can't have their surgery, even though they really need it for their health. This is now something that's 3 months down the line is difficult to justify why we're taking that approach. But it is positive, and then you know earlier on the outbreak we wanted anything to be positive. So, it's almost like the PCR. In the beginning we wanted it to be super sensitive and now we kind of want it to be a little bit less sensitive.

would love the idea of having antibody testing and using the neutralization results as to say that they've got neutralizing antibody and therefore they're not infectious. I think the one good paper that really focused was the one published by the ERASMUS group, which followed up a lot of patients and did culture, PCR and antibody and did show that whenever antibody was there - missing a neutralizing antibody - the virus didn't grow. And if you say that virus in culture is the parameter of what's infectious. I mean, it's not perfect but to some parameter, then you could say that when someone has a neutralizing antibody, they are not infectious.

And so, that would be great. And we are starting to see, potentially, to have some neutralizing antibody approaches in there but I don't think this is anywhere near guidance, yet. So we're slightly left in this.

Luke Moore 58:13

I agree. Not guidance.

Kate Templeton 58:17

Not guidance, but it would be great. I think there's also some very interesting work from the sequencing side, looking at RNA structure. And, I mean, we were fully aware that some RNA viruses, you know, can reactivate. In Scotland we dealt with a very interesting cases of Ebola which re-emerged although a completely different virus, but is there something about RNA structure, and that there is some pathology going on here. Not infectious but there's some element of pathology so I think we shouldn't discount these as being completely red herrings have RNA hanging around. It just makes it, what we would really like to know is, this is an infectious result, and this is RNA that's hanging around that we don't quite know the meaning of yet.

Chris Settle 59:17

That's great. Thank you.

Manjula Meda 59:19

I don't know if any of you have a comment on, you know, a specificity of the cost of false positives, given that you know you've got such low problems. This time, at least in this in this region where we are at. And what that would you know how that would not not for patients, not, not for patients or staff we're going from positive to negative. But generally, when we are testing asymptomatics.

Kate Templeton 59:46

I can say that what we've done in Scotland is in the NHS labs, we've introduced the two to two tests processes in low prevalence and PHE has, I think, has introduced a very similar protocol we certainly had. I don't, I don't actually know when they've introduced it. We've been doing it, three weeks so far and from the first of July, in Lothian, and it essentially removes all of the uncertainty around the PCR, and the issue I think that a lot of people will have is that they're probably getting results from labs, or Lighthouse Labs and, at the moment they don't have the mechanism to do the repeat tests within their system. And so you get a result that's positive, and you look at it and you don't think that's right and then get another positive and you feel that one's right, but you're not getting the level of granularity that you can from the NHS labs,

With that I think what we've seen quite a lot of calls around the Lighthouse Lab results and they are now starting to provide CT values, if it's only a single gene positive – so the N gene particularly are the one that comes up, then get that data, then you can start to understand which ones are the false ones.

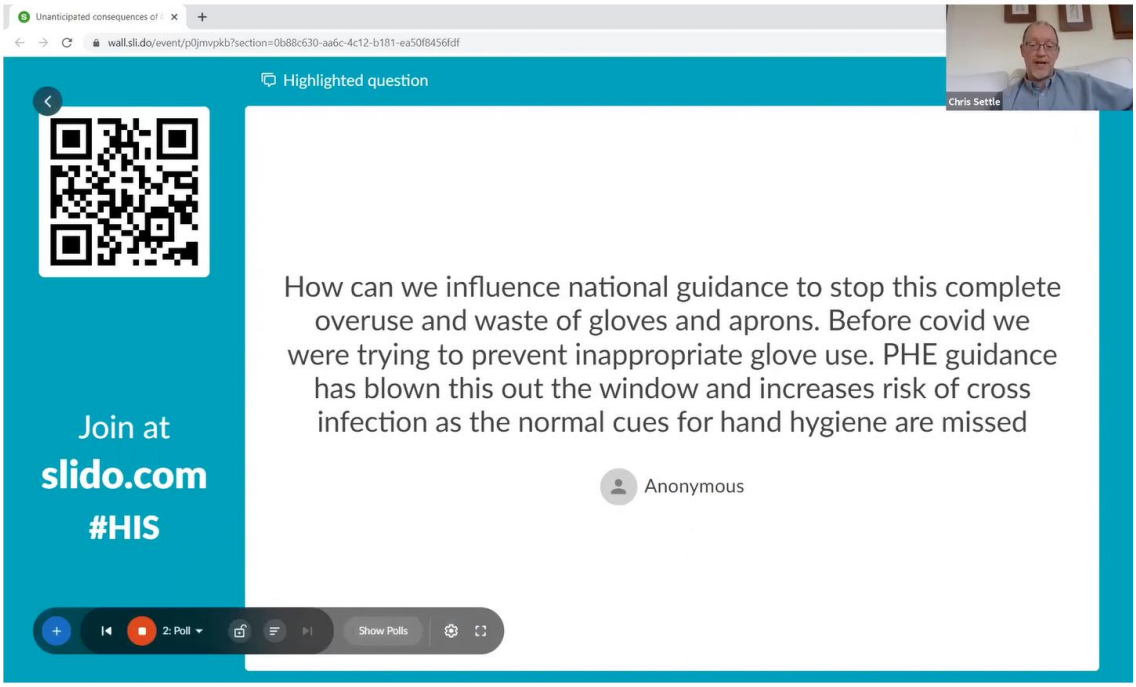
You need to have the lab number in order to then get the CT value out of the Lighthouse but that's we've started to do in Scotland.

Manjula Meda 59:24

Yes, that's exactly what we've started to do so perhaps that should be rolled out everywhere else, especially to the Lighthouse Labs now I suppose.

Chris Settle 1:01:40

Superb. Thank you so much. Well, we might just try one more question. I know we are running slightly over but we'll try one more and then finish up to this one.



So, yeah, I think, essentially, glove use has certainly spiralled upwards. And does this lead to a lot more instances where the gloves are used incorrectly, using extra gloves, and we're using the budget as well.

Manjula Meda 1:02:30

Yeah. Completely agree - especially at the beginning of the pandemic. When there was the fear - to understand the virus there was overuse of gloves. I think at least in our unit we have tried to tackle that, as we've got to learn more about the virus and as we have more evidence now on transmission routes and infectivity, I think, staff have got more confidence so and as we already discussed you know with intensive care, especially combined with, with the gowns you know the glove use was contributed quite significantly to Gram negatives. So, yeah, it has to be appropriate and we have to minimize it and we have to go back to the basics and think about appropriate glove use as with any other infection and COVID as well.

Evonne Curran 1:03:24

I would just say that I think there's something to be said about having kind of sentinel centres, that will review guidance before it is sent out to everyone. Maybe they can test it maybe they can just, just give practical on the ground, opinions, so rather than sending out guidance to everyone to comment I don't think that's a good idea. I think we get approved three or four centres or the heads up, like maybe five just to say, it will go through a fine tooth comb, we'll test it or find out what's wrong with it, and we'll get back to you and we'll get back to you very quickly. I think that would help.

Chris Settle 1:04:00

I think some sense checking would not go amiss.

The recent piece of guidance from PHE about the flu vaccination program, which leads Trusts to be instructed to use gloves for every single vaccination that is given - when that's not a practice that was previously adopted for vaccinations. You can clean your hands or decontaminate them without using a pair of gloves for every single patient. So things like that do seem to be somewhat ill thought through, and maybe as you say Evonne - if there was a process for passing this past some real life practitioners, they might flag up one or two potential hazards, and they therefore review that before it's actually released. Whereas now it's released - our Trust (and we discussed it this morning between all the north east Trusts) no-one's going to do that - because it's just crazy.

Luke Moore 1:05:05

But we can always hope that somebody from PHE is on the attendee list and takes it on board. I couldn't agree with you more.

Chris Settle 1:05:10

Well, that's great. I mean, thank you very much to everybody on the panel for having taken part. Thank you to all of the participants. It's been a very interesting and slightly overrun meeting but I think it's been enjoyable. It's the last one of this series but we'll be returning with some further webinars from September. Certificates of attendance will get sent out after this. And also, a recording and a transcript will be available later. So, thanks again to everyone for taking the time out of their busy lives.