Transcript: Joint webinar – Measles: 2024 update| 14 February 2024

Watch the webinar

During this webinar our audience submitted their questions to our expert panel:

- Vanessa Saliba, Consultant Epidemiologist, Immunisation & Vaccine-Preventable Diseases Division, UKHSA, UK Health Security Agency
- Mark Garvey, Consultant Clinical Scientist and Clinical Director of Infection Prevention and Control, University Hospitals Birmingham
- Catherine Boswell, Senior healthcare scientist, NHS England IPCT
- Val Weston, Nurse consultant, NHS England IPCT

Chair: Steve Hams, Chief Nursing Officer and Director of Infection Prevention and Control, North Bristol NHS Trust

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Joint IPS_HIS measles webinar 14 Feb 2024

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SPEAKERS

Val Weston, Catherine Boswell, Mark Garvey, Steven Hams, Vanessa Saliba

Steven Hams 00:05
Good afternoon, everybody, and a huge welcome and thank you for joining our joint webinar from the Infection Prevention Society and the Healthcare Infection Society. Today's webinar will focus on measles and the current situation here in the UK. Hello, my name is Steve Hands and I'm the chair of the Infection Prevention Society and I was about to say in my spare time, I'm the chief nursing officer and the director of infection control here at North Bristol NHS Trust. So a huge huge welcome. Today we're joined by Dr. Vanessa Saliba from the UKHSA and Dr. Mark Garvey from University Hospitals Birmingham. And we're also joined by colleagues from NHS England Val Western who is nurse consultant and Catherine Boswell, senior healthcare scientist. If I may ask Vanessa to introduce herself.

Vanessa Saliba 01:02
Hello. Thanks so much for having me. My name is Vanessa Saliba. I'm a consultant epidemiologist and based in the immunisation of vaccine preventable diseases of the UK health security agency and measles is one of the areas that I lead on. Nice to see you everybody.

Steven Hams 01:18
Right. Thank you. And Mark, would you like to introduce yourself?

Mark Garvey 01:22
Yes, thank you. So my name is Mark Garvey. I'm a consultant, clinical scientist, and I'm the clinical director of infection prevention and control at University Hospitals Birmingham.

Steven Hams 01:33
Right. Thank you, Val, would you like to introduce yourself?

Val Weston 01:36
Hi, I'm Val Weston. I'm Nurse Consultant for the infection control team for NHS England.

Steven Hams 01:43

Great welcome. And Catherine.

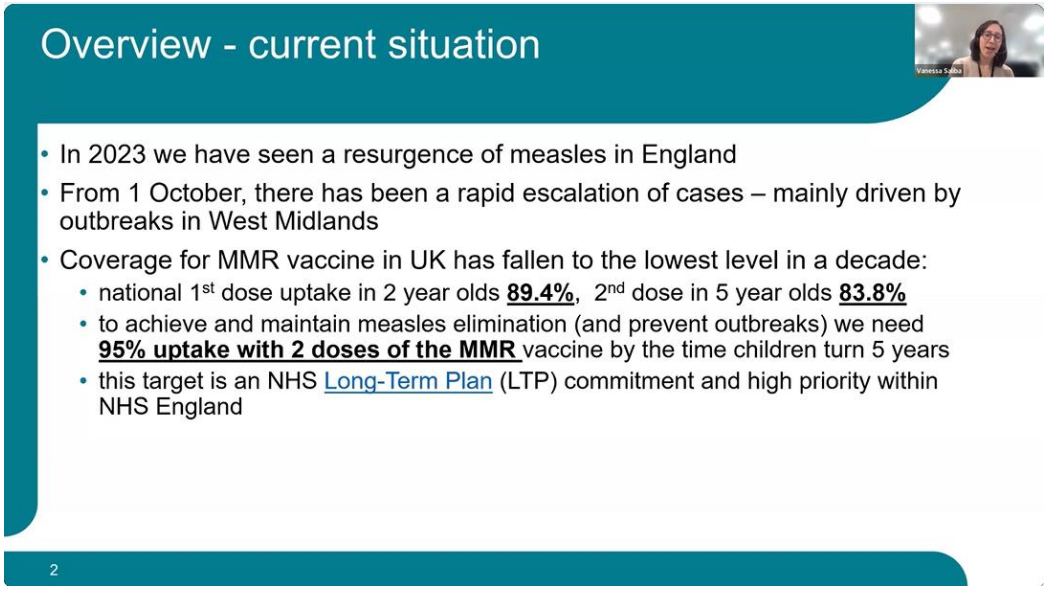
Catherine Boswell 01:46
Afternoon, everyone. I'm Catherine Boswell. I'm senior healthcare scientist in the NHS England national IPC team, largely working on policy and guidance.

Steven Hams 01:54
Great, thank you, and a huge welcome to all of you and thank you for giving up some of your time. So before the webinar, we asked you to submit some questions to put to the panel. During the second half of the webinar, we'll be answering your questions which you will have submitted to Slido. And there's the QR code there. So you can submit some questions they're coming through live on the screen as we speak. Throughout the event, you will also be able to use Slido to post questions and vote on questions you would most like to be answered. And I have to say the one that's most interesting and has the most votes at the moment is around wearing RPE. So I know that that will be something that many of our panelists will cover. So to participate, please open Slido via the link which is in the webinar chat, and on the screen or on the QR code. So let's begin and we're going to start with Vanessa, so over to you.

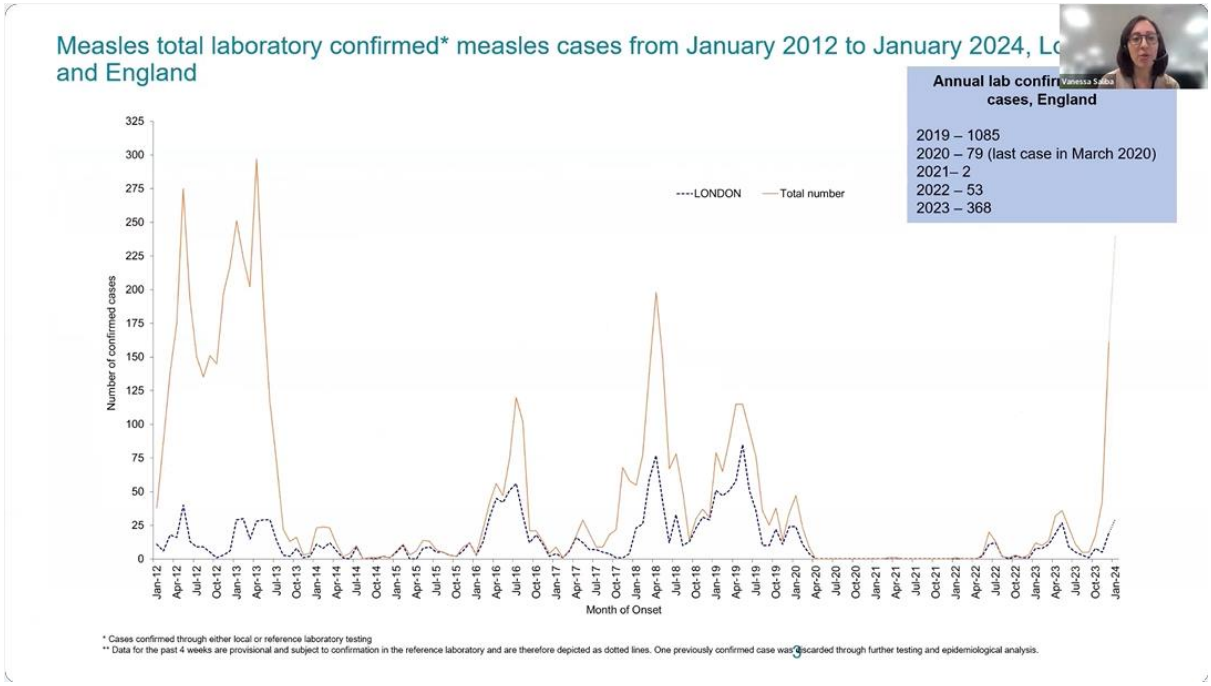
Vanessa Saliba 02:52
Okay, let me try showing my slides. Could you let me know if I am sharing the right view?

Steven Hams 02:58
Brilliant. We've got them.

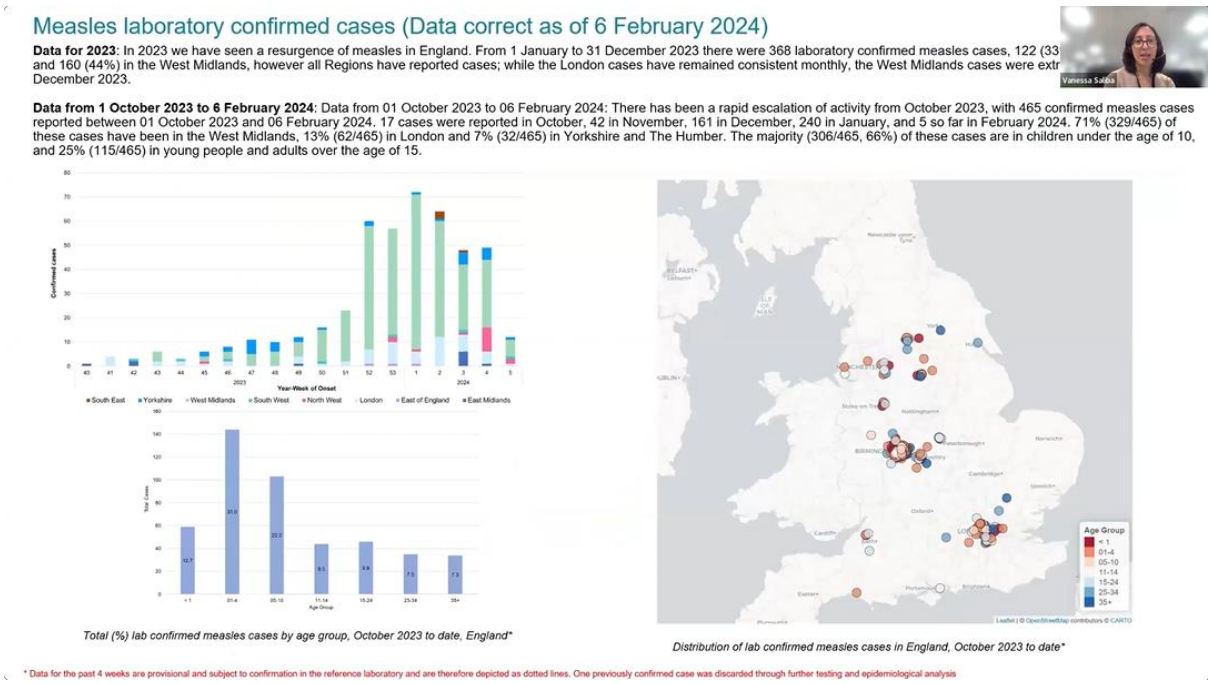
Vanessa Saliba 03:00
Wonderful. Okay, well, hi, everybody. I'm going to try and bring you up to date with what's happening with measles at the moment. So, I'm going to talk to you about the resurgence of measles in England that we started to see in 2023, and particularly the current outbreak which kicked off in October and really the epicenter of this is in the West Midlands and Birmingham in particular.



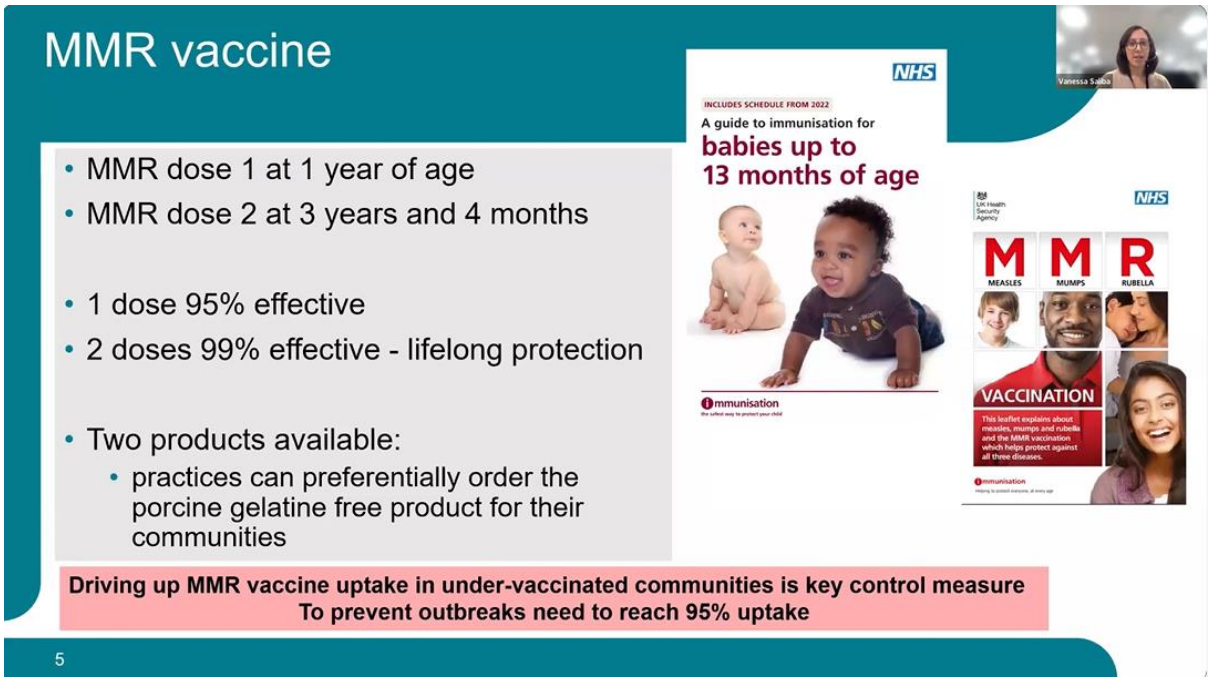
And the context in which we're working, which is, unfortunately, a context where MMR coverage in the UK has fallen to the lowest level in a decade. And that's actually true for all the routine childhood programs. We know that in order to achieve and sustain measles elimination and prevent outbreaks, we need to achieve 95% uptake with two doses of the MMR vaccine by the time children turn five. In the UK, we've never actually met that target, although we have at least come close to it in past years for the first dose. But at the moment, uptake has gone for the first dose which we measure at age two is it's actually dropped below 90%. It's currently at 89.4%. And the second dose measured at five years is currently at 83.8%. So quite a lot of work needs to be done in order to get back to the 95%. And I'm going to start by talking to you to the most recent epidemiology.



So, this is a slide showing lab confirmed measles cases by month going back to 2024. And hopefully this brings the current outbreak into context. The orange line is for England cases and the blue line is London cases. And you'll see that after a very quiet period during the pandemic where basically we had virtually no measles cases detected largely due to the pandemic measures including interruption of travel. So we no longer had importations from endemic countries coming in. So after that, we've seen a resurgence in 2023. A bit of a trickle of cases earlier on in the year mainly in London. And then it's really taken off. As you can see, there's a straight line going up there since October, and you'll see that the London line does not follow that orange line at the moment because this is all well 80% of the cases are in the West Midlands. But you will see that before the pandemic, we did have some good going measles outbreaks at with the largest epidemic you can see back there and 2012/13 in recent in that last decade. That 2012/13 epidemic was driven by cases in teenagers. So the Wakefield cohort had made it to secondary school and we saw quite a few outbreaks linked to secondary school there. But a Catch-Up campaign targeted at teenagers during that period got that under control.

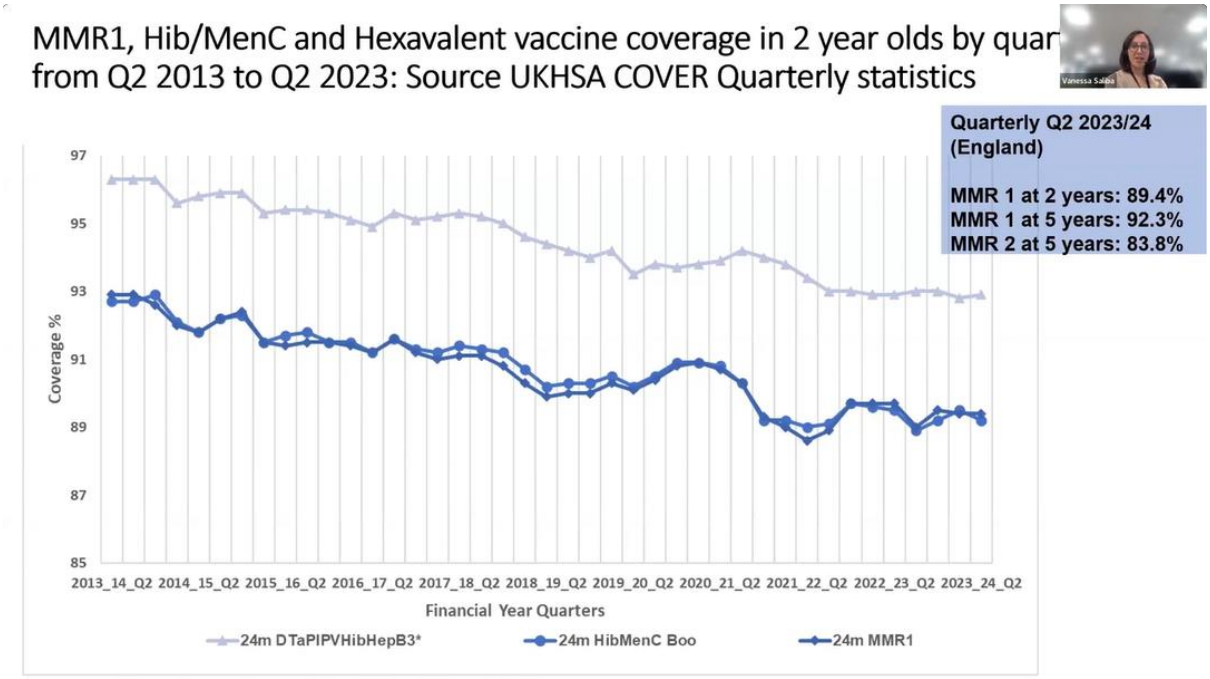


So, delving a bit more into the current outbreak. In the top right-hand corner there, you'll see weekly cases that's the weekly lab confirmed cases and the different colours are different regions in England. So you'll see, as I've said, dominated by cases in the West Midlands. We're running close to 500 cases at the moment, counting from the first of October onwards. Most of the cases have been in children under the age of 10. And actually, the age group most affected are children under the age of five, and you'll see from the map that although the West Midlands dominates, we have cases across the country or regions have had some cases and London is the region that has had the most cases after the West Midlands.

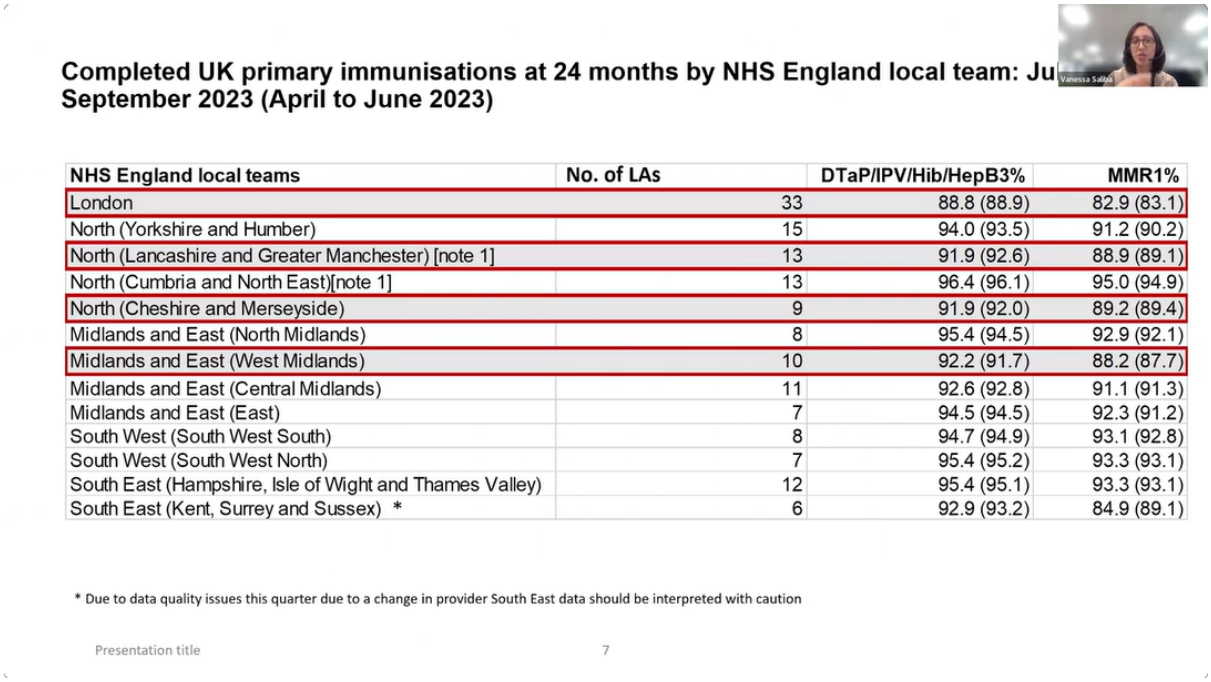


So what can we do about this, I mean, the main way to control Measles is vaccination as you will know. Just a quick reminder that we offer the MMR vaccination as part of the routine

Childhood Program. It’s a two dose schedule. The first dose is given to children when they turn one, the second dose to children at three years and four months. It's an extremely effective vaccine. So the first dose will protect 95% of children who receive it. And the second dose brings that up to 99%. And it gives children lifelong prediction. It's important to note that we have two products used in the national program, one of which does not contain porcine gelatin and therefore services that mainly serve populations that prefer porcine gelatin free products should be preferentially ordering that from using inform.

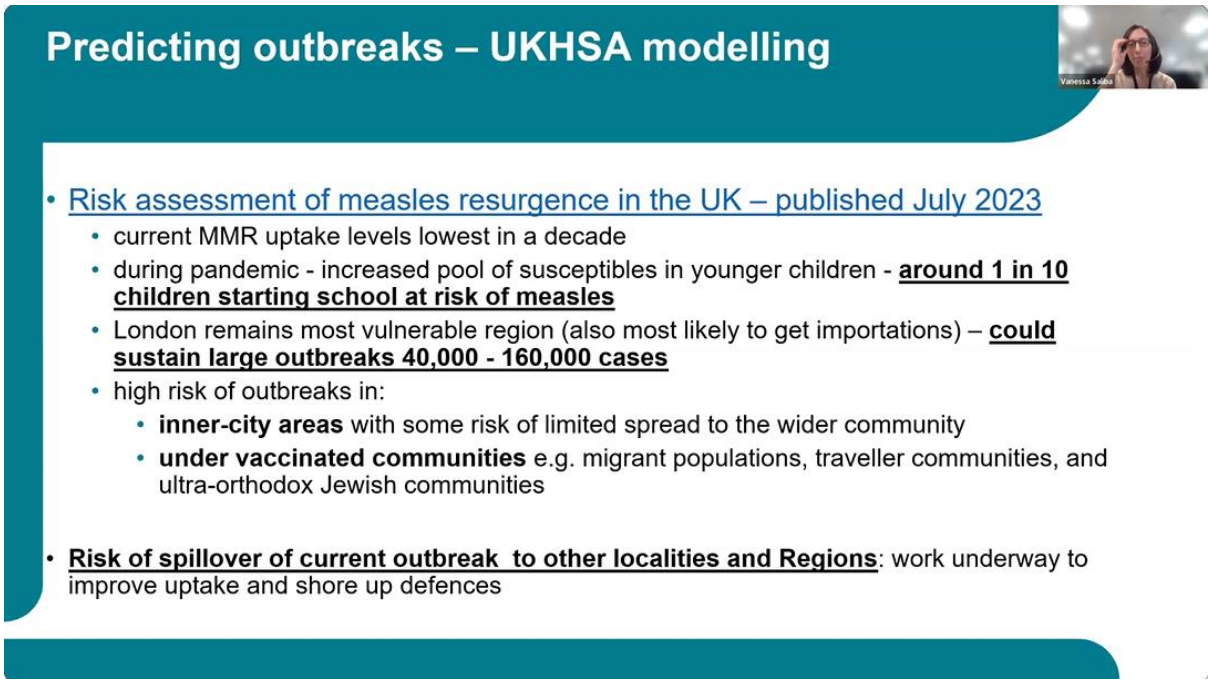


So this is a look at vaccine coverage going back over the last decade and you'll see a slow decline, which was exacerbated during the COVID 19 pandemic. This is uptake year of MMR dose one but also Hib/MenC which is offered at exactly the same time. And the hexavalent vaccine, which as you know, is given as three doses in the first year of life. So you'll see that the uptake for the MMR vaccine tracks exactly on to the Hib/MenC vaccine, which shows us that the fall in uptake is not an MMR specific issue. So this is an issue that is challenging us across the routine Childhood program. And as I said, you can see the figures there uptake is nowhere near what we need to achieve, well below the 95% target. And those were national figures. But if you delve into the regional variation and uptake, there's quite a lot of variation at the regional level, with London fairing the worst out of all the regions.



NHS England local teams	No. of LAs	DTaP/IPV/Hib/HepB3%	MMR1%
London	33	88.8 (88.9)	82.9 (83.1)
North (Yorkshire and Humber)	15	94.0 (93.5)	91.2 (90.2)
North (Lancashire and Greater Manchester) [note 1]	13	91.9 (92.6)	88.9 (89.1)
North (Cumbria and North East)[note 1]	13	96.4 (96.1)	95.0 (94.9)
North (Cheshire and Merseyside)	9	91.9 (92.0)	89.2 (89.4)
Midlands and East (North Midlands)	8	95.4 (94.5)	92.9 (92.1)
Midlands and East (West Midlands)	10	92.2 (91.7)	88.2 (87.7)
Midlands and East (Central Midlands)	11	92.6 (92.8)	91.1 (91.3)
Midlands and East (East)	7	94.5 (94.5)	92.3 (91.2)
South West (South West South)	8	94.7 (94.9)	93.1 (92.8)
South West (South West North)	7	95.4 (95.2)	93.3 (93.1)
South East (Hampshire, Isle of Wight and Thames Valley)	12	95.4 (95.1)	93.3 (93.1)
South East (Kent, Surrey and Sussex) *	6	92.9 (93.2)	84.9 (89.1)

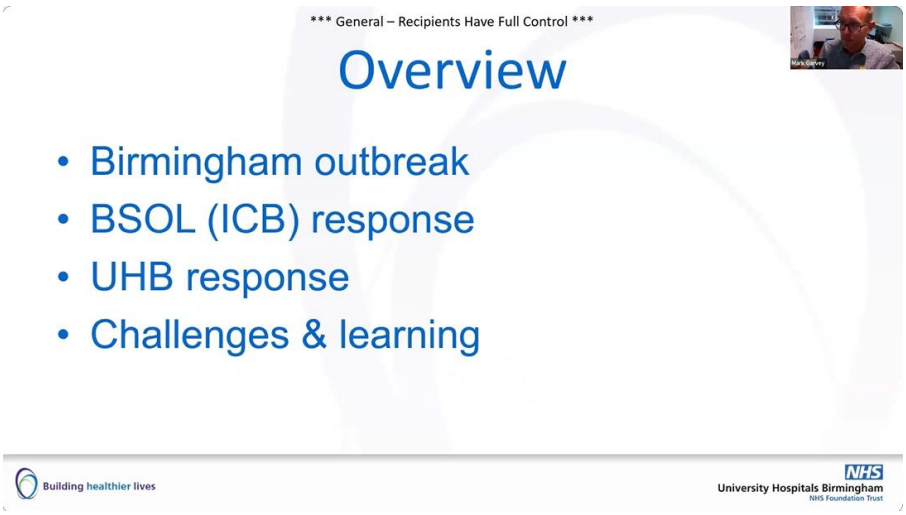
But you can see that the West midlands where we have seen the current outbreaks also having MMR1at h2 below 90% there. And then that regional variation, again hides much greater variation at the lower granular level. Both of that but to your local authority, but communities within that. And so we know that there are inequalities in uptake by geography by ethnicity and deprivation. And that the areas that are most diverse urban and have highest deprivation have the lowest uptake, although there are low deprivation areas, particularly for example, in the Northeast, where there is high uptake. So it doesn't always hold true. But we know that there are inequalities and lots of variation important in order to inform our intervention to understand where those communities are.



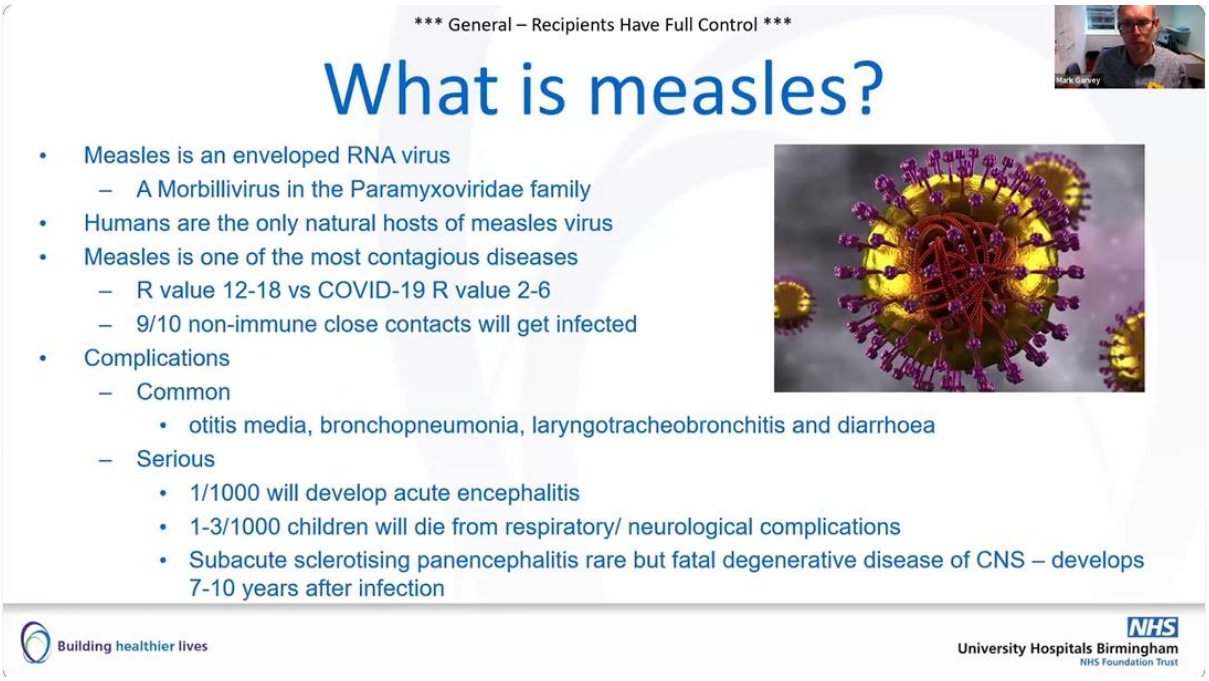
So in summary, I just want to say that at the UKHSA having looked at has used the information from the previous coverage statistics and what we know about measles and how it transmits in communities the generate a risk assessment which we published last year, to essentially ask partners to prepare for a resurgence of measles. Because current MMR uptake levels are the lowest in a decade that was exacerbated during the pandemic, where we saw this increased pool of susceptibles in younger children. And this is really playing out in this current outbreak as I've said, where transmission is being driven very much by children under the age of 10 with many outbreaks linked to nurseries and primary schools. In terms of what might happen next, London still remains the most vulnerable region, also most likely to get importations from other countries around the world where measles is still endemic. And we know in Europe, there's also been a resurgence, although still, numbers are still relatively low. But as that pattern also is likely to replicate itself in Europe, we're likely to be in this for the long haul, I would say. And as outbreaks kick off in Europe we'll continue to get importations, which will seed outbreaks here in the UK. There's a high risk of outbreaks in our inner city areas, with particular under vaccinated communities at risk. And the current outbreak in terms of what might happen next, there's a clear risk of spillover into other localities and regions and so work is underway to try and improve uptake and shore up defenses with the MMR launch, sorry, with the NHS, launching a national MMR Catch Up campaign just last week, that's targeting all children aged six to 11, around the country and in the West Midlands and London, that that will be extended to everyone under the age of 25. And it's starting from age six, because there has already been a Catch Up campaign for children under the age of five, but obviously, efforts ongoing to reach the younger ones as well. Okay, well, thank you very much for listening. That's the end of my presentation. And I'll hand over to my colleagues.

Steven Hams 11:53
Vanessa thank you very much for the presentation. We'll, go to Mark now if that's okay. And to give some of your experience Mark about managing the outbreak in the West Midlands over to you.

Mark Garvey 12:04
Let me see if I can. Is that shared, okay for everyone? Brilliant fab. Thank you. So I'm going to give a very practical talk today around the outbreak that we've had within Birmingham and in the, in our Birmingham Solihull region.

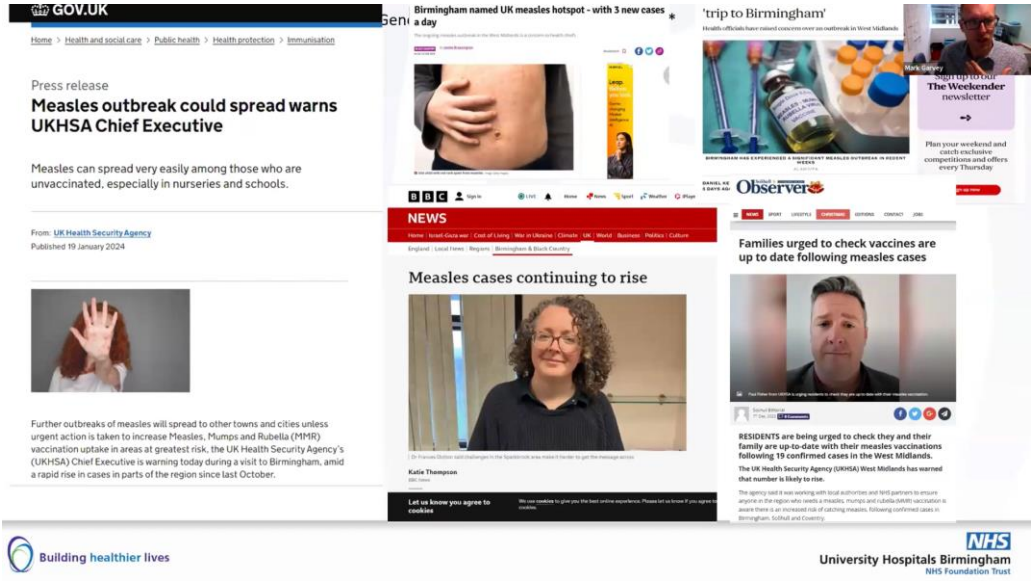


So my overview is literally I'm going to talk a little bit about the Birmingham outbreak, I think it's really important to note for us or what's helped me a lot because obviously I'm very acute focused for those that know me. I'm like the clinical DIPC at University Hospitals, Birmingham. But I think it's really important that you engage your ICBs, your integrated care boards, and the BSOL response is vitally important to how we've managed measles because obviously, I'm talking very much about the front line, you know, what we see day to day, as within an acute trust, you tend to see the after effects of, you know, the public health within the region. So, it's really important to get that that's one of the key things. Then I'm going to talk about a little bit about our response. And mainly I'm going to talk about the challenges that we've had the number of measles cases that we've seen.

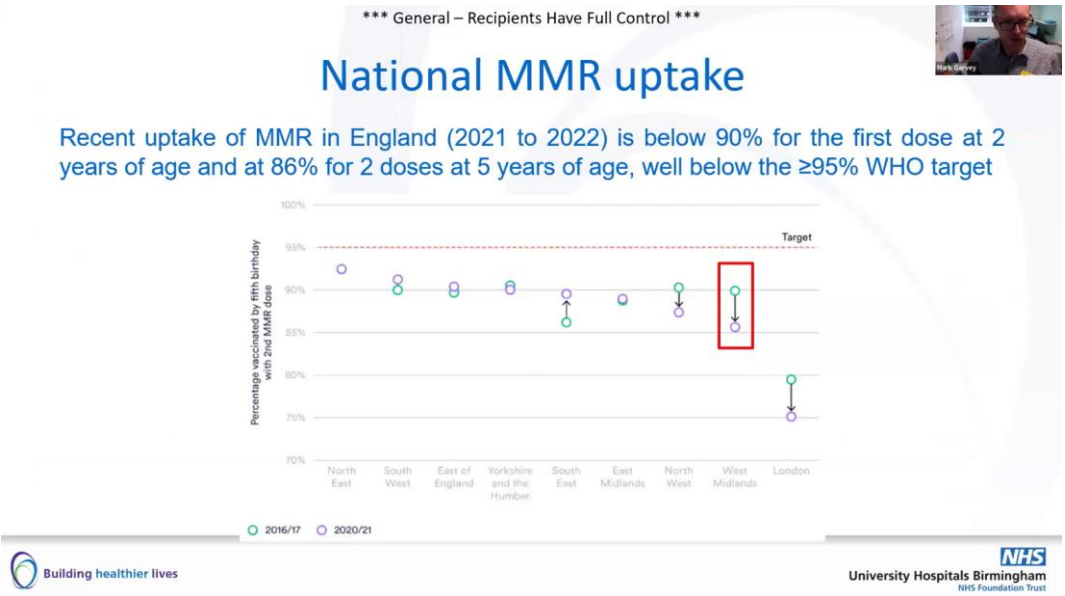


So what is measles? So, I know you probably all know about that as you are all infection control practitioners, medics, clinical scientists, etc. So it's got a quite funky name Morbillivirus, I quite like that, measles is an envelope RNA virus made from our own cells. Humans are the only natural hosts of measles, and it's one of the most contagious diseases that we've got. So in R value, reproductive value, measles has an R value of 12 to 18. And compare that compared to something like COVID obviously, it's evolving around two to six, and that's a lot higher. And what does an R value mean? It just means if one person gets measles, for example, you're likely to infect 12 to 18 other people in that so it's really highly contagious, It's quite a small virus. And for an example, if you've got 10, non-immune contacts in a room, nine of those will get measles from that. So, it's highly contagious and infectious. Has a lot of complications, not that we'll talk about those, but there's some very common ones from middle ear infections to pneumonia, things like that, to other very serious ones that are slightly more rare that you don't see but such as acute encephalitus, children can get respiratory neurological complications, and you can get this really nasty subacute sclerotising panencephalitis. We've actually recently had a case of this, a sad case of this, obviously not from this outbreak but you can see that, so it's important to note all of that. That’s all I'm going to say on the measles virus anyway. So let's talk a little bit around Birmingham.

15:09 Dr Mark Garvey

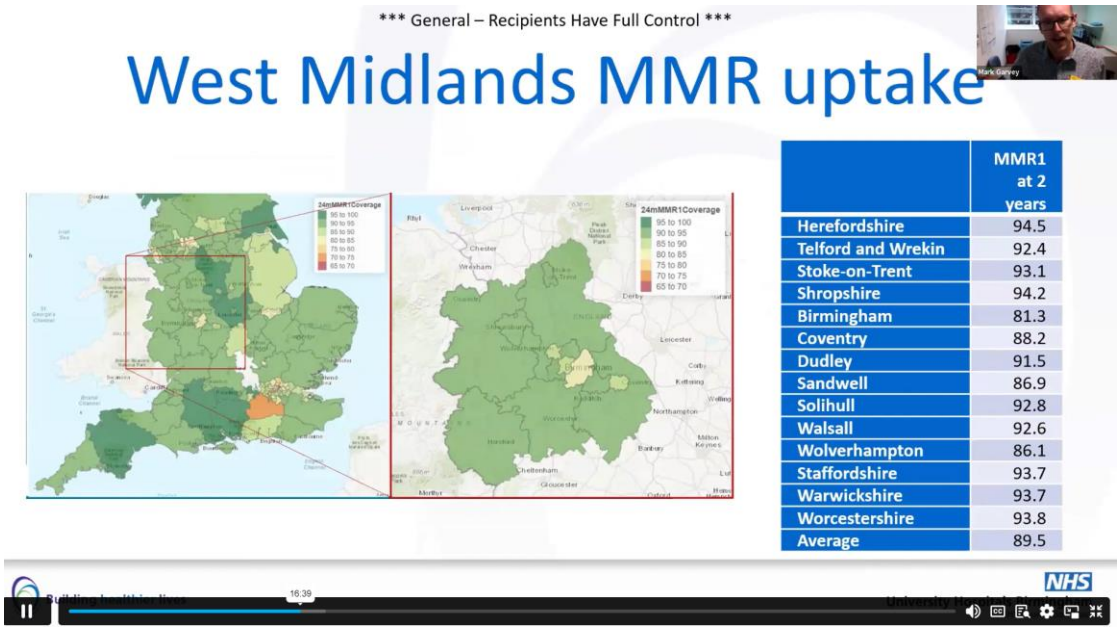


So I don't know if you've seen in the news, there's been a lot of media around measles in the news, I would say this probably taken a while to come come into the, into the news. This is all articles recently in January in February when we first started seeing our measles cases back in November. So that's quite a key intervention as well is to get the media impact of measles and how it's affecting, you know, the hospital, things like that. So that's been quite useful more recently, but at the beginning, we didn't have such media coverage around that, you know, we had Professor Dame Jenny Harris, come and visit us. And that's one of the articles. I know recently, I can't see it on there. But there's a recently there's a patient who, over in Ireland who died from measles and had visited Birmingham, so there's lots in the news around that.



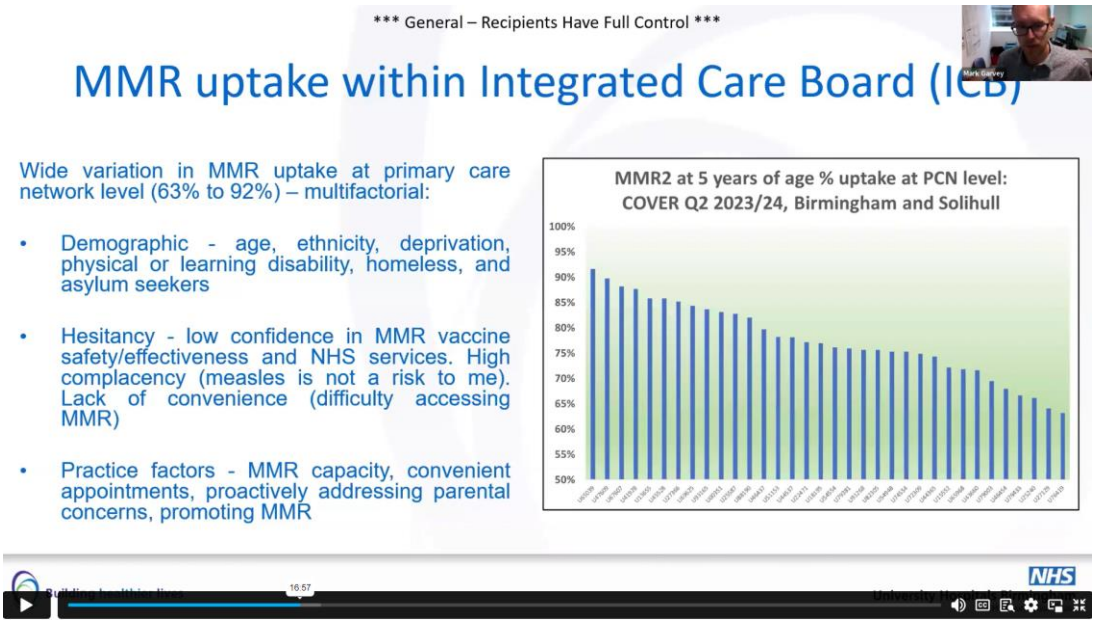
Vanessa has it very eloquently talked about vaccination rates, and how the vaccination rates of MMR uptake since COVID have dropped have dropped down. So I'm not going to delve

into this into huge, huge details. I've just detailed where the West Midlands is on there, and you can see, you know, the dosage of vaccination, and as Vanessa said, is down at 86%.



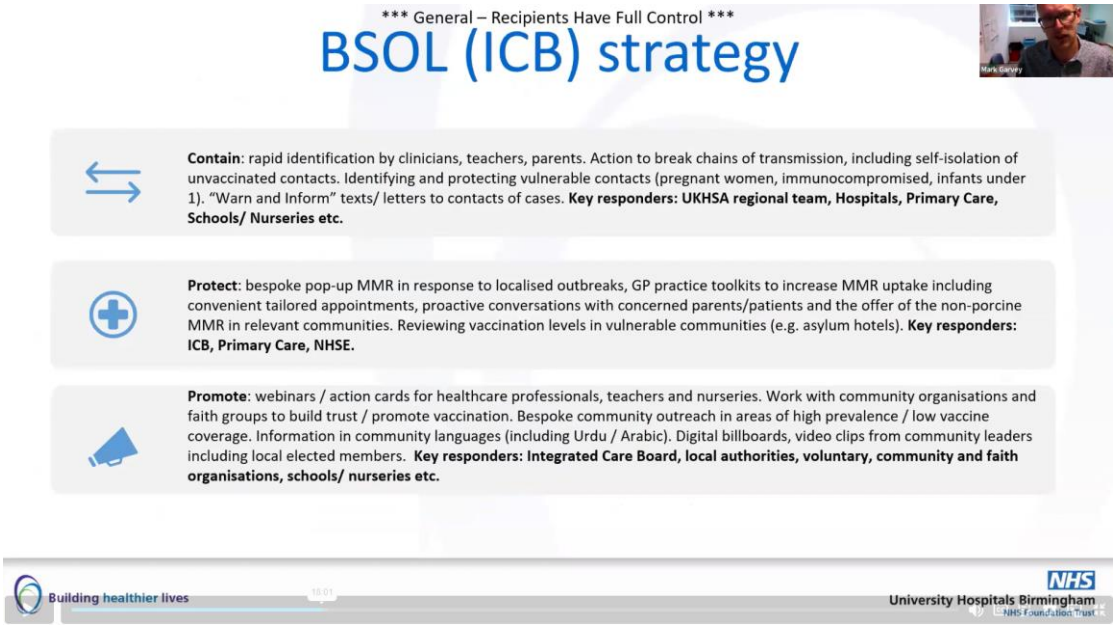
	MMR1 at 2 years
Herefordshire	94.5
Telford and Wrekin	92.4
Stoke-on-Trent	93.1
Shropshire	94.2
Birmingham	81.3
Coventry	88.2
Dudley	91.5
Sandwell	86.9
Solihull	92.8
Walsall	92.6
Wolverhampton	86.1
Staffordshire	93.7
Warwickshire	93.7
Worcestershire	93.8
Average	89.5

But if you delve further into this, you know, if you look at the West Midlands, for example, Birmingham sits at around 81.3%, of vaccination of MMR at two years, so it's quite, it's quite low, you can see other areas around that.

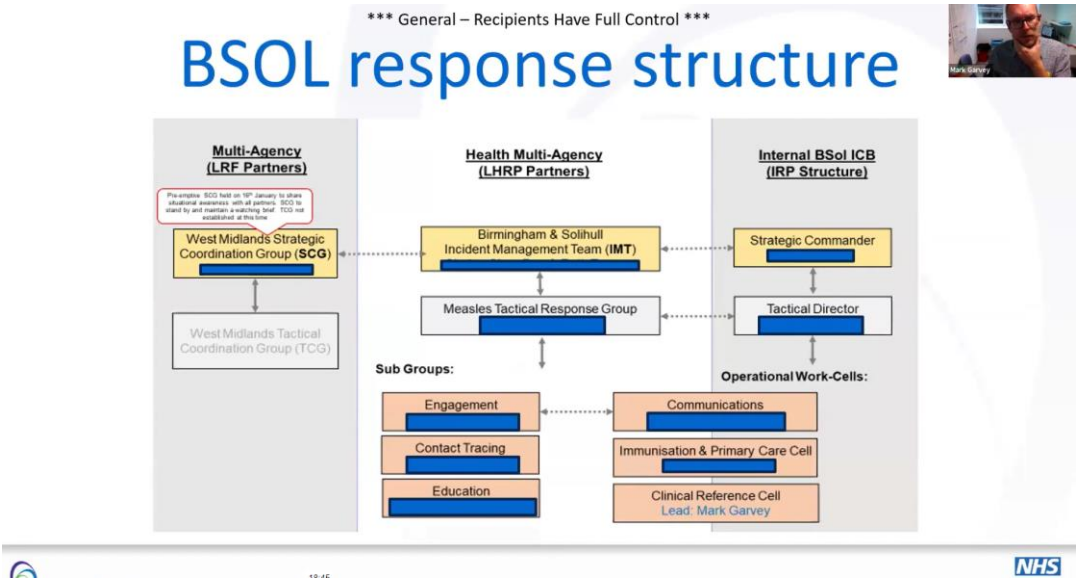


And then when you break this down even further, you, you can get a big variation, as Vanessa was talking about in MMR uptake. So in some parts of Birmingham, you know, we've only got 63% vaccine coverage. So it's very, very, it can be very low. And that's some of the reasons why we're seeing the cases that we're seeing in Birmingham and Selly Hull region is due to the low vaccination rates. People might ask, but this is not uncommon, why we see low vaccination rates, it's very multifactorial, you've got very, you've got demographics, and vaccine hesitancy. And then obviously, you've got GP factors. And I'm not going to go into huge amounts of detail. But there's lots of different reasons why we see

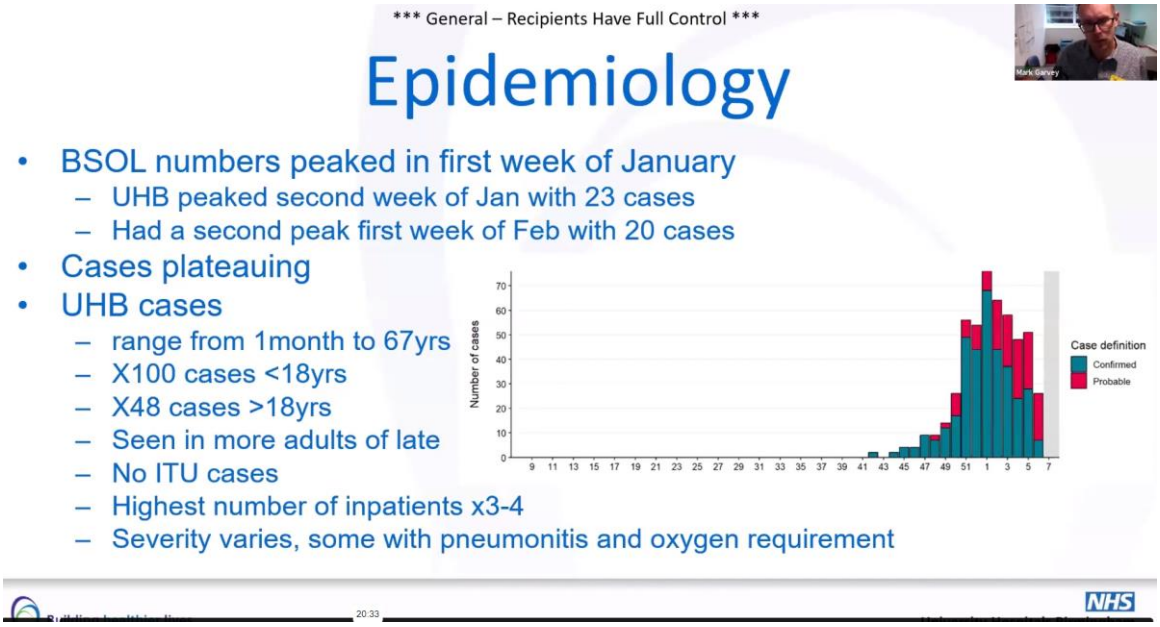
we see, we see the low vaccination rates that we do. We have a very ethnically diverse young population and in the lower percentage, quantile deprivation as well, that affects our vaccination rates as well, why we see quite low down there as well. So that's why we're probably seeing the number of cases that we're seeing in the Birmingham and Selly Hull region.



Like I said, that the BSOL to engage your ICB is really important. So one thing going away from this, if you're not got loads of cases is to try and engage your ICP, there's not loads of money attached for them to set up a set up a strategy around this, but at BSOL so we have got a strategy. Now this probably came into play in around December, you know, we've got very, we've got key players involved in this, we've got our Director of Public Health, Ruth Tennants, and our Chief Medical Officer of the BSOL region, Dr. Tara Day has been integral to set this up, and we've got a strategy, I'm not going to go through this, but very common things, you know, contain, protect, promote around, you know, vaccination, pop up MMR clinics, you know, contain when you know, the right players involved or clinicians aware of that.

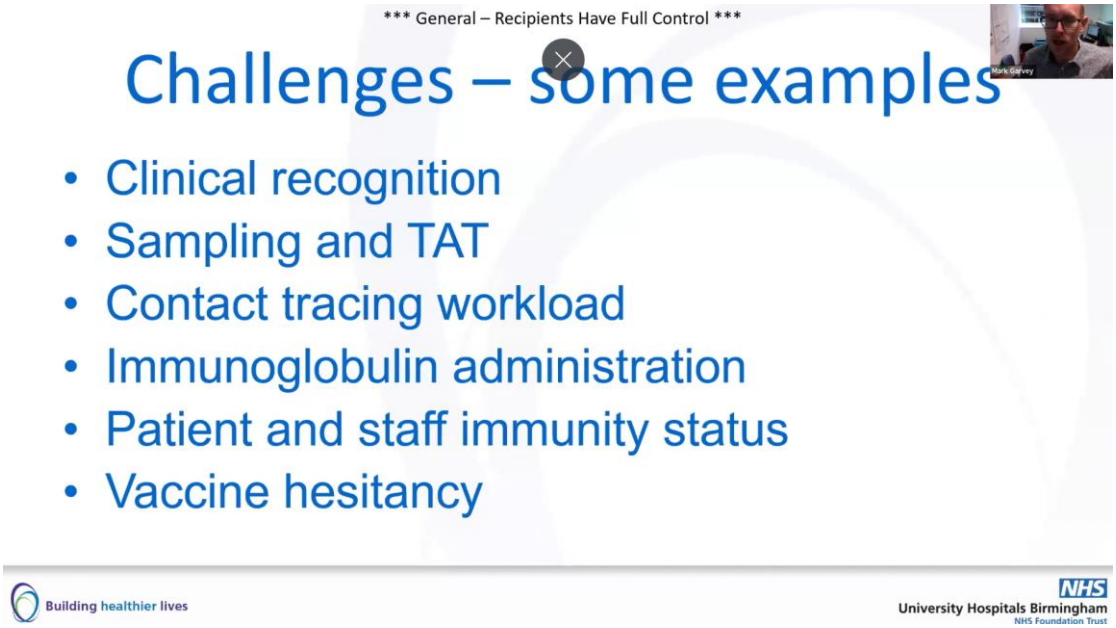


And this next slide is probably the key thing that we took from it is setting up a response structure on that. So obviously, we've got a strategic group that that various different partners from around the region attend. And then we've got subgroups, and these subgroups are probably evolved from the issues that we've seen in the acute setting. So you know, there's lots around engagement and communications, as you saw from the from the news contact, tracing I will touch upon is a big thing in the acute setting, you know, clinical reference group, blanked everybody's name to help her apart from mine, but and then there's, you know, an immunisation cell as well. So it's key that you get all those kinds of things because there's an acute trust, you can't tackle all of those you, you basically see the patients you can deal with, with the patients that are coming coming in. So you need a system wide approach to tackle to tackle this as. As Vanessa mentioned, vaccination is the key thing to reduce measles, measles down really. So what is the current situation? So yes, it's a national incident, as you're all aware and Vanessa's touched upon. And the BSOL outbreak at the moment is currently the largest in the UK. So some scope on numbers since September 23. We've had 508 cases 358 confirmed and 145 a probable of those. And at UHB, we've seen what that is, this is a bit old data from last week, we've seen over 150 of these now within, you know, less than, like 140 confirmed. We see a lot more confirmed, say you would see in the in the community because we've got access to testing. So that's why a lot of our cases are pretty much confirmed measles.

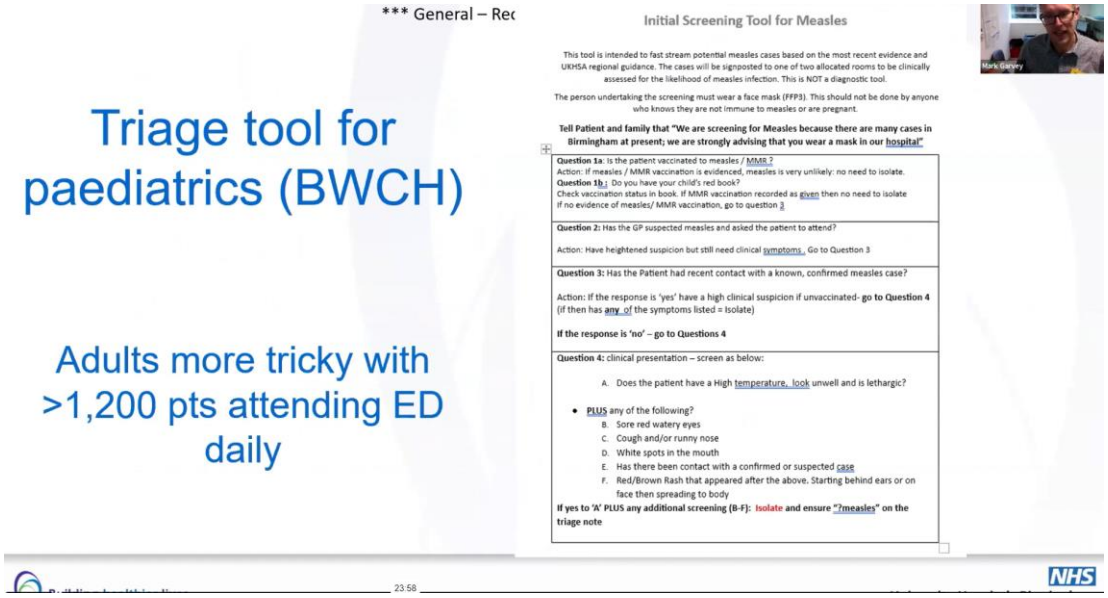


So I'll do a little bit of epidemiology around this. So as you can see from the graph, a B cell numbers peaked in the first week of January. And we probably had a peak number of cases in a week seeing around 23 cases, the second week of January The numbers do fluctuate, I wouldn't say the numbers are going down per se, they've probably plateaued, it doesn't seem to be going away. And the numbers like I say, can fluctuate. So you can see, you know, we get families who are positive, and that can cause an increase in the numbers of cases that we saw. So only just last week, we had 20 cases in the first week of February, what's a lot really are cases from UHB themselves. The range, we've got, you know, we have got pediatrics and mainly adult care. We've got, you know four hospitals that cover the majority of Birmingham, from the north, south east, etc. So we've seen a range of cases from one month, year old to 67 year olds. And what surprised me when I was going through

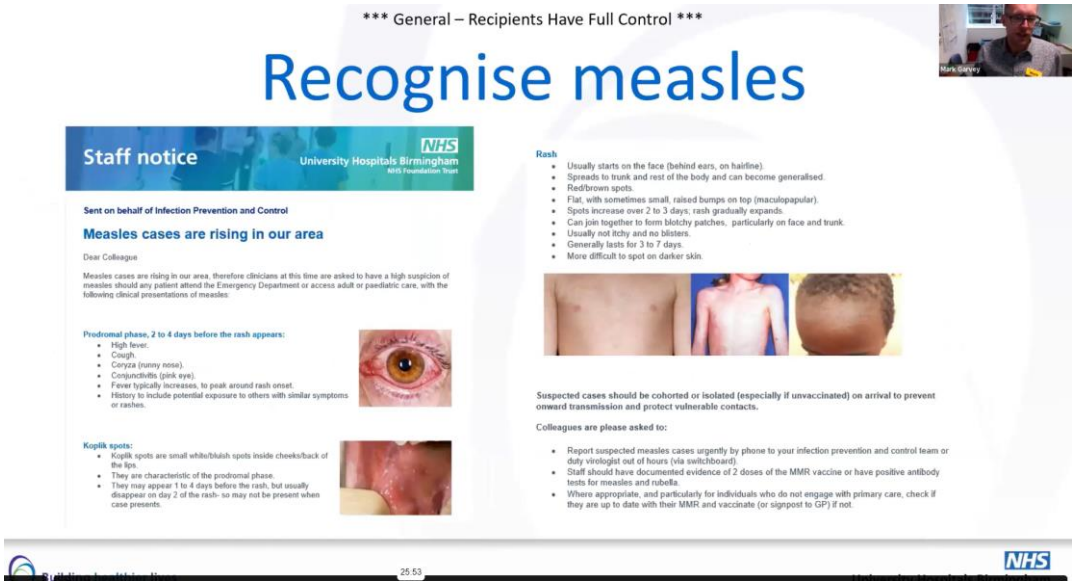
the data, a third of our cases are adults actually over 18 years of age. So that that surprised me. It surprised me when I was looking at the data that's a little bit different compared to the community where it's all in younger population, but it's not, you know, unsurprising that we see a lot of the, you know, chunk of adults that are positive for, for measles. It's quite interesting of late, we've seen it more in the adults. So we've had more in the youngsters at the beginning. And then then it's gone into the adults. We've also seen a couple of cases that we've late complication that measles come in, as well. Fortunately, we've not had in any ITU cases of measles, I think, I think over at Leicester I think they might might have one in ITU. So yesterday, I gave a bit of a talk to Sheffield. And some of these are the Sheffield University Hospitals. And these are some of the questions they asked me from a clinical point of view. We haven't seen many ITU cases. And the highest number of inpatients that we've seen is probably around three or four, you know, within our infectious disease wards, or PAU. So one of the questions I got asked was around cohorting. And do you need wards? You know, specific wards with measles? No, we haven't had had that either. The severity is varied. So we've had some with pneumonitis, requiring oxygen requirements as well. Some scope on numbers as well, around of the of the cases we've seen in the BSOL region, we've had 35% that had been admitted to hospital 56 of those are adults. So we've seen the majority of adults, there's a chunk of those adults around nine who have worked in health and social care settings, you know, we've had 87, we've had about 88 educational outbreaks as well. And the majority of cases are in the unvaccinated. We are seeing cases increase in the Roma traveling community as well. And like I said, a lot of the cases that we see are in the most deprived quintile of deprivation. So that's some epidemiology.



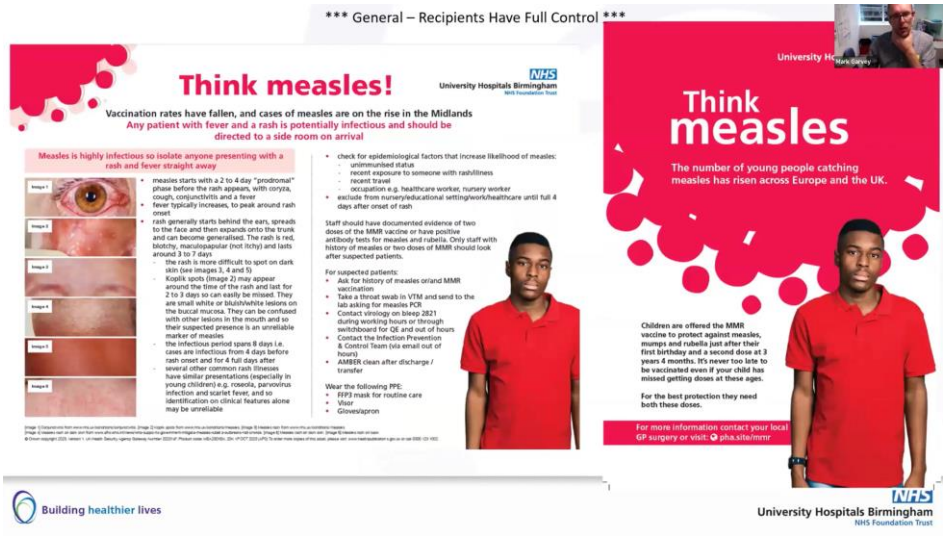
So finally, I say finally, the next chunk of the talk, I'm just going to talk about some of the challenges that are that we faced from a hospital point of point of view. So this is very practical. And I wouldn't say we've solved it, but these are some of the challenges that we've had. And I'll try and go through some of the things that we've tried to put in place to, to make it a little bit easier for ourselves.



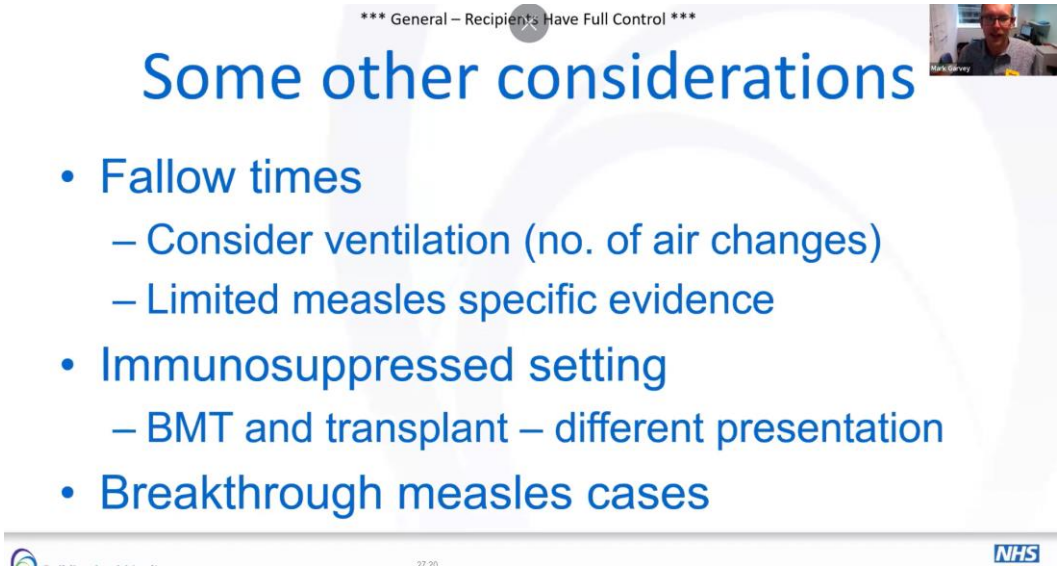
So number one, I've talked about clinical recognition. So clinical recognition is key. I wouldn't say we've solved it and but you know, when we first had our cases and they came into pediatrics, a lot of the cases were missed, you know, we didn't recognize measles. It's not something we'd seen for a period of time. And a lot of the cases would get missed, we wouldn't ask immunization status, patients would come in, they'd come into the waiting rooms and we'd generate contacts. We'd have outbreak meetings around that. But as you've seen, we've had a lot of a lot of a lot of cases. You know, I've pinched this from Mittel Patel's team at the Birmingham Women's and Children's Hospital but they had a very good triage tool for pediatrics as you can see certain questions if you've vaccinated etc. Have you been in contact and have you got certain clinical presentations and this was quite useful to stop, pick up the cases when they came in and I wouldn't say we've solved it straightaway it probably took about two to three weeks to get the triage better and now pediatrics setting and how did we get that better? It was probably through constant education and reinforcement me we know from education. You know, when you do education for anything from an infection control, it takes repeated exposures to try and build up. You know, we had regular comms that I'll show you as well, and banners on the front door, etc. It is important to note, even with pediatrics, we have lots of different admission routes in areas so you can come into our GP come into our GP clinic, you can go into our PAU pediatric assessment unit and you can go into our EDU. as adults is a lot more tricky. So I would say we probably cracked it a little bit within within paeds but adults, as you can see, we have greater than 1200 patients attend our all of our EDS on any one day. And there's so many different routes in there. It's really tricky to get, you know, triage the patients within that it's pretty much impossible to do that.



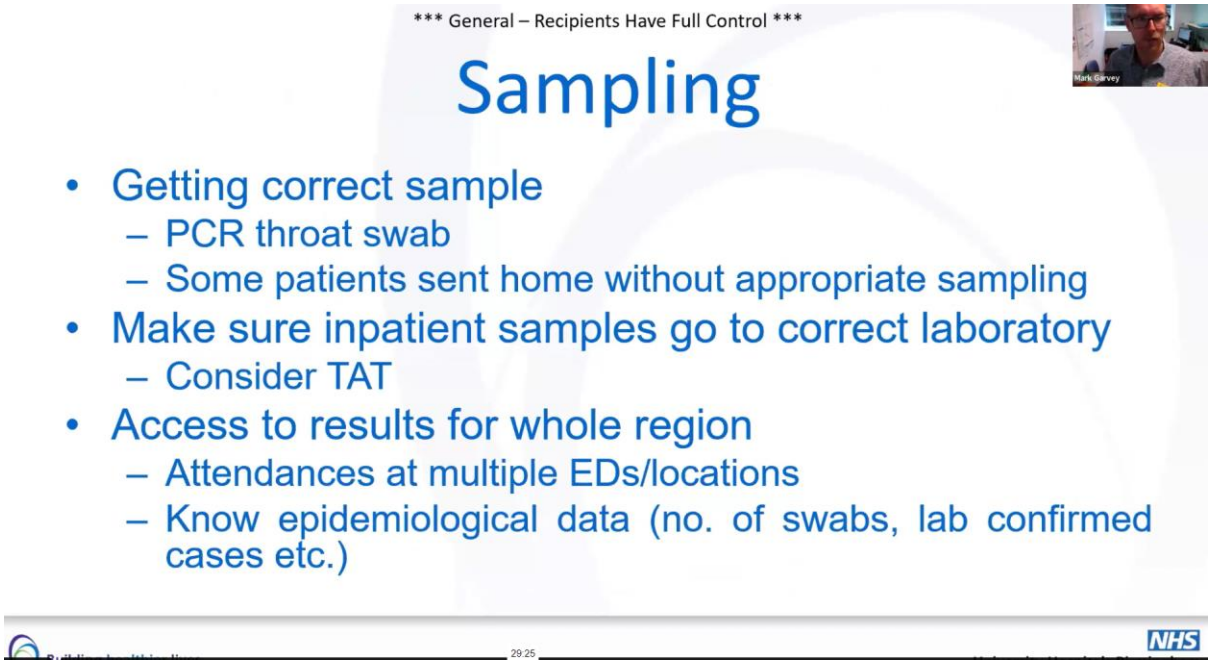
So what have we done, we've done lots of different things to recognize the symptoms of measles. So we've sent out these types of comms to all of our staff multiple times, you know, concentrating on what the common symptoms that you see for measles, such as you know, for day fever, then you've got coryza conjunctivitis and cough, followed by your maculopapular rash as well. It's important to note, like I said, we've got a very ethnically diverse population that we serve, so you can get different skin types and different reactions to measles. So it's important to note to note that as well. So that's what we've done is constant education and reinforcement, you know, I've presented on my CO connect lots of different things that we've done within, within the trust to build that up Grand Rounds, things like that, and just constant education and reinforcement of that.



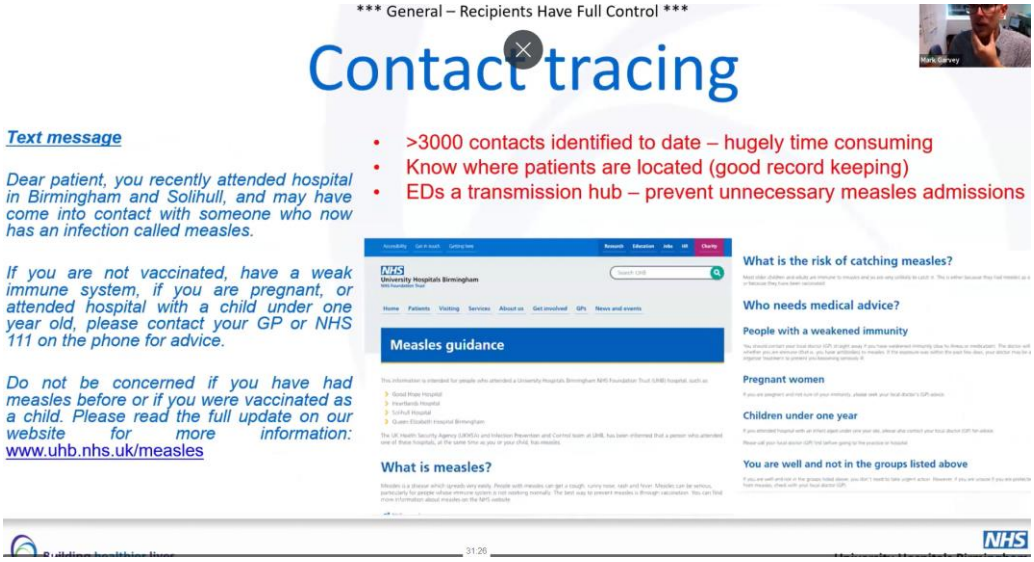
You know, we've got pop up banners and posters with pinch days and from you know, UKHSA and obviously placed those them into a UHB style for the front doors, but there's lots of different things that we've done to try and improve their communication on that, and most people will have done that, but we've redesigned it and with educational packages around that.



There's some other considerations to consider. Fallow times is one that we've got challenged on. That's basically when we have a patient with measles and we put them into a side room how long do you leave that side room before another patient goes into that? That's there's limited musical specific evidence on that. So don't ask me huge amounts of details around fallow times. But that's one thing we did get challenged on, you know, you know, in our pediatric ED, we put them into a cubicle you know, put measles into a cubicle and we tend to leave that cubicle for a couple of hours based on the number of air change rates that we have. You need to consider your ventilation we're quite lucky at the Queen Elizabeth our newer hospital and since COVID, we've got like negative pressure research suites so that the changes rates are a lot quicker within within that but that's something that we got challenged on around fallow times when you cohort patients together how long do you leave them? Measles is quite a small virus and stays in the air for a while. Other considerations is our immunosuppressed sitting so we have a lot of immunosuppressed patients that come to the Queen Elizabeth Hospital. So we've got solid organ transplants and bone marrow transplants and you can get different presentations on there. So a lot of like you know, BMT patients can come in and they have chemo and they will have a rash because of the chemo. So, you know, is that measles and they've got bit of coryza you know, they can have different atypical presentations or we'll touch upon that but it's important to set up and go and to speak to those clinicians and promote raise awareness of, of measles. That's what we've done. And we've got different things in place for those for those for those setting or go through. And I've noticed a couple of questions in Slido as well. We've seen a couple of breakthrough measles cases as well. And what I mean by breakthrough measles cases in is in we've seen a couple of double vaccinated patients that are that have had measles. So predominantly seen that in a couple of health care workers on the on the on the you know, on the front door, both had vaccines, MMR vaccines and had measles, you will see that as the vaccination levels are so low and then you know, the huge amounts of cases you know, you we saw it through COVID You do see that. So you do get a bit of breakthrough measles. So it's important to note that as well.



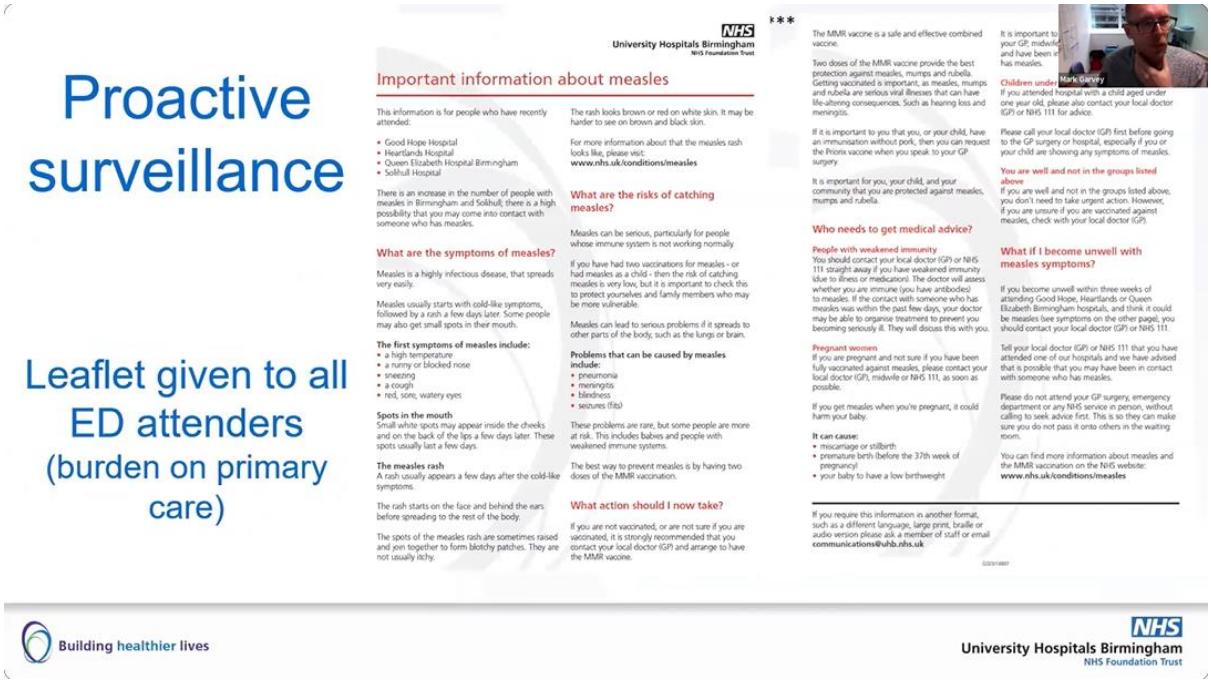
Sampling is a key thing. So I'd urge everybody to go around, go away and make sure you know where your swabs get sent to and what labs process it. We're quite lucky as much as we've got a UKHSA Lab, our Heartlands site. But it's quite interesting, we recommend getting a PCR throat swab for that for measles, but sometimes what we found especially in our adult setting is some of the patients that sometimes got sent home and we haven't got a swab, so then you're reliant on getting a swab sent to them in the post and processed at Colindale you know, often they've been at they've had a serology test and but it's only for IgG, things like that. So it's important to get the appropriate swab as well. And also, you know, making sure they go to the correct laboratory know where the laboratory where they, where they process them, we've lucky which to the UKHSA lab, you might have your own internal labs to do that. But consider turnaround times as well, especially in our, you know, from a pediatric point of view, if you get exposure for kids who are six months or less, you have to give, you have to give an immunoglobulin. So if you turn around times are slow, and by the time you've done the contact tracing, you can you can miss that six days. So speed is of the essence. So it's important to make sure you get your turnaround times, you know, fairly, fairly quick, and that's all streamlined, I'd have liked access to all the results for the region. I know that's tricky. But from a public health point of view, I think that would have been quite useful. So what I found at the very beginning, or what we found is we found a tendency to went to like the Birmingham Children's Hospital, and then they came to us then back to the Birmingham Children's Hospital. So it'd be useful to know all the positives within the region. So you could pick those up when they came in. So we've had a couple of exposures where they've been positive at the Children's and we didn't know about and maybe they've come into it to us. So again, that's why you know, you need your system response from GPS to make you aware of when patients come in and obviously know the epidemiological data as well. Because that's quite useful to map the trends.



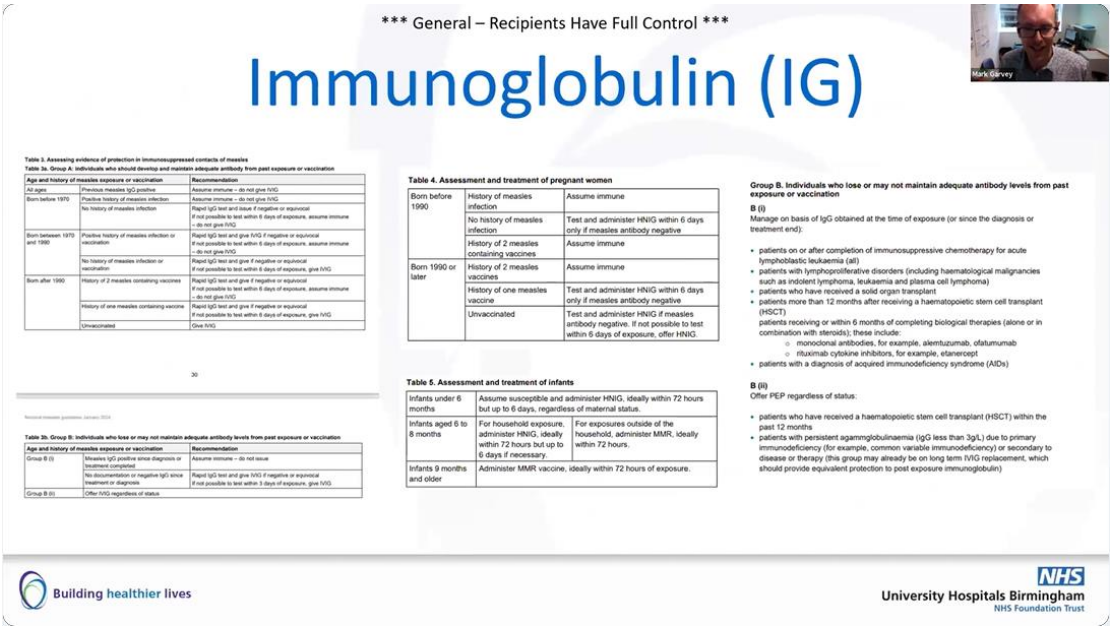
For all the infection control teams out there, this is probably been the biggest bugbear of from the measles outbreak that we've seen is the volume of contact tracing to so to give some scope, my I've got fortunate enough to have three lead nurses for infection control, but it's pretty much take them taking them out of action for a couple of months doing the contact tracing, it's hugely time consuming, you know, had well over 3000 contacts identified contacts identified to date. So it's massively time consuming, you know, originally had meetings and sent out letters, but that's not sustainable to do that. So how we've tried to approach it is, you know, we've tried to send out contacts text messaging service, just to say you've had a bit of contact and link to it. As you can see a website here on our trust in, you know, trust internet page to say you've had measles what to do, you know, a lot of things around like having good records of where patients have been. So, you know, that's, again, important to pick up and have a look at that. So to try and trace some of the contacts can be quite tricky. If they've been in waiting areas, say for example, our PAU, the record keeping is not exactly brilliant in that area.

Mark Garvey 32:40

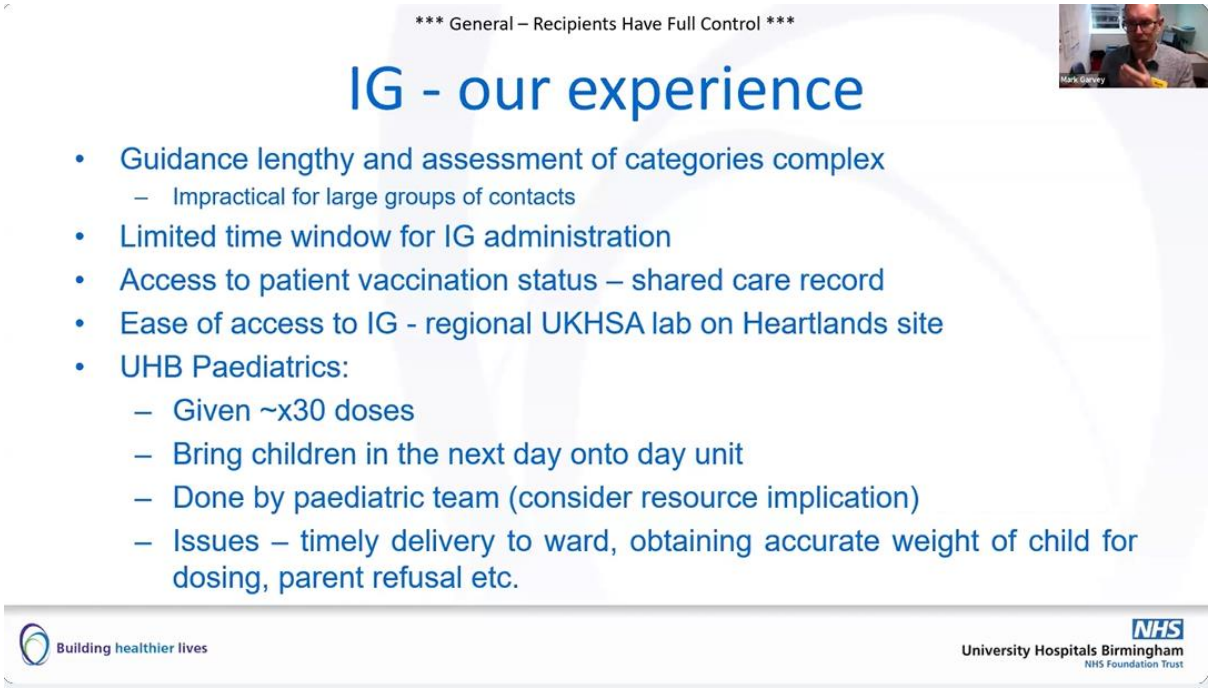
So we've made that a bit tighter within that. So we know who the contacts are there. And what I found during erm, or what we found in in the end of December, beginning of January, that the EDs were pretty much like a transmission hub. As you said, as I mentioned at the beginning we have so many patients who come into our EDs, there's a lot but what we would have definitely had is transmission within the emergency departments with cases coming in. Do all the measles cases need to come into the acute trust? Maybe not. So prevent unnecessary measles admissions. One example is we had a whole family that came in, all five with measles into the different sites. One at Heartlands a couple of Good Hope all came in to the area did they need to come in there? That creates unnecessary exposure. So you do get a lot of exposure within the EDs. I saw that was another question on the Slido subset. So EDs, yes, you do get a bit of transmission there and the asymptomatic carriage as well. So it's trying to have good communications with the GPs and stop unnecessary admissions coming into the hospital. From our population over on the east side of Birmingham there is, we've got very scanty GP care. So then, obviously, Heartlands is used ‘as like a GP service’ in the emergency department. So that doesn't help that affects that to a certain effect.



So what do we do? We went over to more of a proactive surveillance. So, this is a leaflet that we gave out to all of our patients when they came in. And it's basically saying, there's measles in the environment. There's a high risk that you probably come to our emergency department, you might have acquired measles, look out for it if you're an immunosuppressed contact. So we went more to a proactive method of surveillance you know, preemptively looking at that. It would have been quite nice to set up vaccination clinics as well. So that's something that Children's Hospital looking at doing is setting up their own vaccination clinic. We've explored that but not gone exactly down that route, as of yet. The leaflet is given to all patients. One thing to note this can be a burden on your primary care. So I'm telling everyone to contact the GP when they've come in there could have been a measles contact. So that's where you need to get your VSOL and engagement within that otherwise you'll know. That's, why you need those kinds of key links.



Immunoglobulin, so there's lots of challenges, don’t know if anyone's had the pleasure of reading, the guidance, it's quite a lengthy guidance. And to know who or what your different categories are within the guidance of your immunosuppressed, your ‘Group A’, ‘Group B’ your pregnant and your infants, it's quite big when you look at look at it. So I've taken some screenshots and snippets, like the salient points.

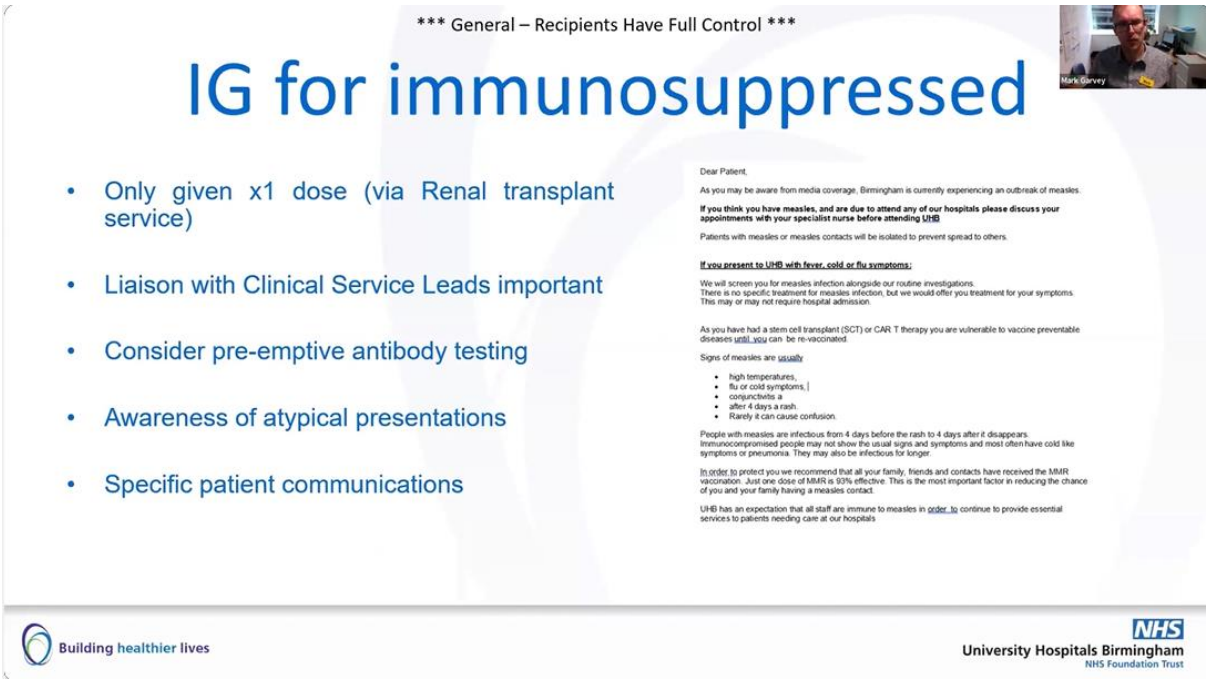


So immune immunoglobulin, I’m really talking about our experience. So the guidance is, like I said, is lengthy. And it's really quite tricky to assess all of your categories. So when we have an exposure in our emergency department of an adult one, when you can have 200-300 contacts, that's pretty much impractical to go through 300 contacts to see if they're immunosuppressed or not. Hence, we went over to more of a proactive method of surveillance, it's really quite tricky. You also got a limited time window for your immunoglobulin, especially within your kids. So remember, I said you've got six days to give under six months immunoglobulin. So if you haven't got good speed of results, you've not got long to contact tracing lists to do, you can hit this six days very, very quickly to do that.

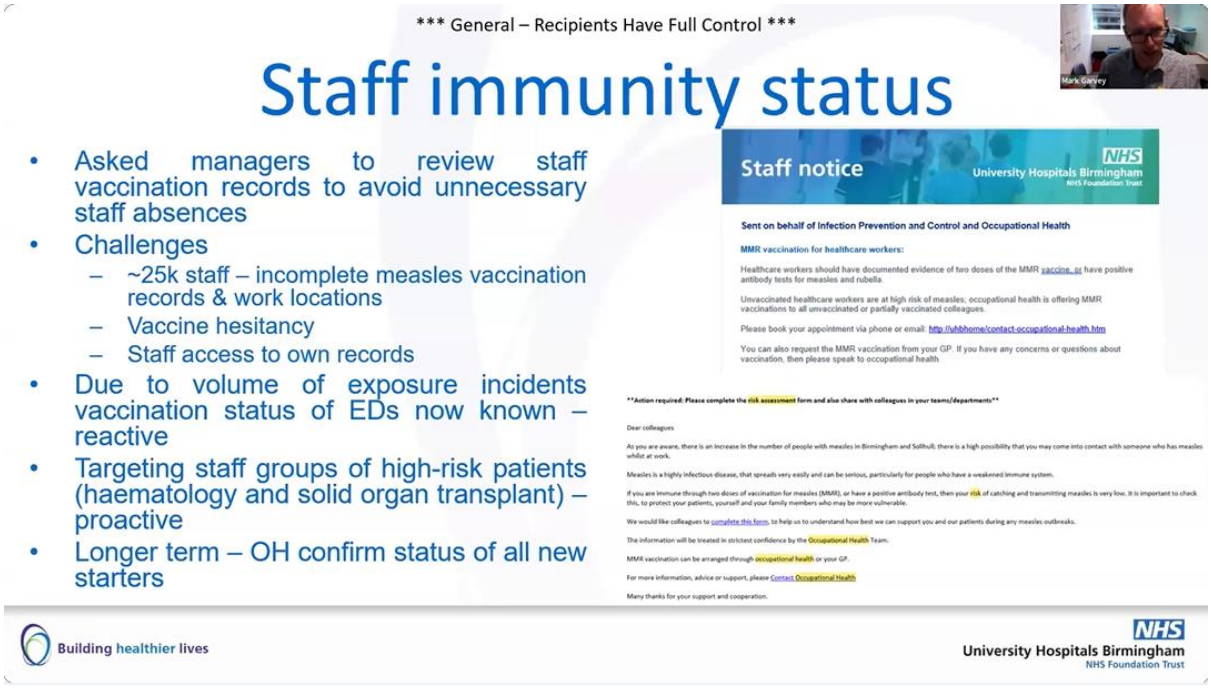
We found the patient shared care records quite useful to get the vaccination status of our children. Less so for adults, it's quite difficult to get your vaccination status for adults. I don't know if anyone's actually tried to go on the NHS app, I have, to look at your own vaccine status. It's not on there. So I had to phone up my GP to make sure I'm fully vaccinated on that. So again, it is quite tricky to get that.

We're quite lucky. Like I say the immunoglobulin is based on our Heartland Site a UKHSA lab. But I had a lot of questions about whether we should set up an immunoglobulin, you know, regionally immunoglobulin service. I don't think from our experience, we haven't done that. We haven't had to give huge amounts of immunoglobulin out either. So we've probably given it around 30 doses into our pediatric setting. And what we found is that it was easier to do it ourselves in the pediatric setting. So we brought them into the day unit the next day, is a bit of a resource implication, but it was easy to be done by the pediatric team, so we could

phone them up the day before, ask them whether they would want the immunoglobulin and a lot say no, so we find 50% probably say no to the immunoglobulin, and then it was easier just to bring them in, I would do a dry run, when you bring them in, because first time we did it, we found that the patients had to wait around for a long period of time. So there's issues and making sure you get the immunoglobulin into the ward. So how we solved that was basically send it up the night before, Getting accurate rates the children to know the dosing, so we've given like a start dose, like one gram doses, such within that, and just having a bit more of a streamline process, but we found it easier to do it for our pediatric setting than having a regional hub or like with COVID, we were talking about the CMDUs, we found it easier within that so I wouldn't change that to be perfectly honest. Others might feel differently, but that's worked quite well for us and not huge amounts of people have done it. Immunosuppressed setting, it might change if there's a load more cases.

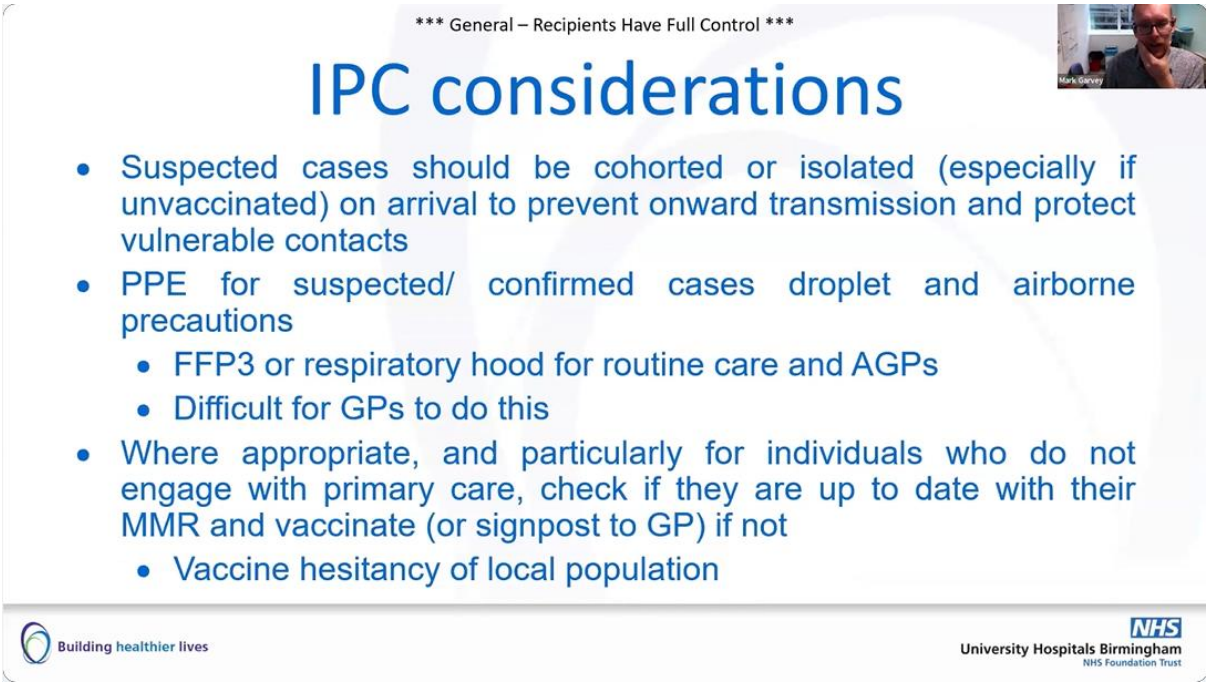


Immunosuppressed setting, we've only had to give it to one patient, a renal transplant patient and that was done by our renal transplant service. So again, we brought them in and gave it. It's important to liaise with these clinical service leads, if you've got BMT setting solid organ transplant settings. We've sent out letters to out to our transplant patients as well. It's quite interesting with BMT patients, what we're going to do is we're going to screen them up because of their atypical presentation. So we're going to screen them up even if they've just got a fever or cold because it can be very atypical. So we're going to do a bit more testing of that. Other things that we're going to think about is looking at pre emptive antibody screening for our patients to make it easier if we do get contacts. I know that Children's Hospital have done that in their immunosuppressed setting. That's something we're doing as well and obviously specific patient communications as you can see what we've done. So that's a bit of our experience with Immunoglobulin. Like I said, we've dealt with it ourselves.



Another big bit of a challenge for us, and we got a lot of challenge around this when UKHSA came in to see us, was about our stuff immunity status. Now that is tricky. You know, looking at the workforce at UHB. We have 25,000 staff who've got incomplete measles vaccination records and work like records you guys might, you know, the trust might have a much better records than us but that has been a challenge. Also knowing where the staff members work as well. So that can be quite tricky. So they don't all work where we think they work either. You know, again, thinking about the population, we serve a lot of our staff, a part of that population. So we see a bit of vaccine hesitancy. And like I mentioned before, getting your own records is trickier if you try it yourself. It is tricky. So what have we done to try and tackle this, we've asked managers to review our stuff vaccination records, again, big coms have gone out from occupational department interest, trust wide level comms. We know all of our vaccination status of the staff in our EDs, but that's not proactive, that's more reactive just due to the volume of exposures that we've had in our emergency departments. And the amount of contact tracing that we've done, we pretty much know everybody now because they've either been, you know, they've been exposed. So we know their vaccination status, or they've been exposed or had it. So that's pretty much reactive. We have had to send off staff for 21 days. You know, from day five to day 21.

Hematology patients, we're going to do targeted staff, you know, targets, looking at vaccination and getting their immunization records in the high risk groups for hematology and solid organ transplant, because that's why we're targeting that one first is because if you get measles in that population, the severity can be a lot worse on that as well. In the longer term, I think it'd be quite nice on every, when you employ staff, you have, we have new starters when they come in, (I'm nearly finished Steve, don't worry). And now I've jumped on. Some examples of staff, occupational health, we've sent out a risk assessment is an example of me filled in, and we'll just wait and get feedback on that to know the vaccine status of our staff members as well.



I can't not finish off without talking about IPC considerations, but there are IPC considerations, and we've got Cat and Val on there. It's all in the NHS, manual around isolation. You know, PPE for confirmed or suspected case is easy in the acute setting, because we use FFP three respirators. But one of the challenges we've had from a B cell point of view is the difficulties for GPs to achieve that. Again, that's been tricky, okay. It's okay in an acute setting, but for a GP setting, it's difficult. Again, it would be nice when patients come in to check their vaccination status, get back records, signposted to the GP on to vaccination clinics, that's not something we've done. But there is vaccine hesitancy in that population. So my key points from it is early clinical recognition and reiterate that in the comms around that, knowledge of your local epidemiology. No strong communication, leadership and system wide working because as an acute side, you only see a part of it. And like Vanessa said, the key to all of this is your vaccination strategy. From there from a system point of view, there's loads of people to acknowledge that I've probably forgotten. The three main people are at the top Doctor Clara Day, Dr. Ruth Tennant and our lead infection control doctor at UHB, Elizabeth Holden, there's loads of different people. So thank you for listening.

Steven Hams 43:19
Thank you, Mark for I'll use the word, fulsome presentation, but clearly outlines some of the impressive work you've been doing in Birmingham to manage the incident. I'm gonna ask my colleagues to come on screen. So we've got about 15 minutes or so for questions. I think it's fair to say that both Vanessa's presentation and Mark's has probably answered many of the questions. We've got just under 100 questions. So we're gonna get through as many as we can. And I'm gonna ask my colleagues to be as concise as they possibly can. With their answers. That'd be very helpful.

It seems like looking at the questions there are probably several areas which relates to testing PPE and RPE, vaccination, ventilation in the environment, public health awareness, treatment of measles contact tracing, and epidemiology. So they're the kind of broad areas where we're getting questions from.

You can see on the on the screen now, the Slido, QR code, if you want to ask a question, we'll do our best to answer them. But let's go to some of the most popular that have been ranked here. So what's the panel's view about the NHSE guidance for fully vaccinated staff to wear RPE when caring for patients with suspected or confirmed measles and Val and Catherine, I was going to come to you both if that's right.

Val Weston 44:45
Okay, shall I make a start Catherine? So the NHS guidance requires staff to have to be fully vaccinated and to wear RPE when they're dealing with suspected or confirmed cases. It's a requirement is based on the fact that actually we know Measles is airborne. And that also the fact that vaccine, although really highly effective, and as Mark and Vanessa have said, but it isn't no vaccine is 100% effective. So we need to take that into account. And from a HSE point of view, if a risk assessment identifies that you need to put those FFP, three masks on, we need to make sure that the control work at risk of exposure to that measles, then we must be properly what they must be properly worn as required. And that's

irrespective of whether they have fully vaccinated or not. And what it also says from a cost point of view is immunization should be seen only as a useful supplement to reinforce physical and procedural control measures. It's not a sole protective measure. So that's where we'll come from.

Steven Hams 46:14
Great. Thank you, Val. Catherine, anything else you'd like to add?

Catherine Boswell 46:16
Yeah, I think most of that has been covered. But I would say certainly, we've seen from Vanessa's presentations. 99% of people respond to the MMR vaccine. It's highly effective. But it does leave that 1%. Mark's also mentioned they've already seen some breakthrough cases in staff in certain areas of their hospital. I'm not quite sure what their vaccination status was, but it's something we've been looking at in the literature as well. But certainly our studies, mostly outbreak reports, case control studies that report healthcare workers with evidence of two vaccines that haven't won RPE that have been developed measles infection, and not only that, but they've spread it on to other healthcare workers and patients. So combined with the health and safety legislation that says there's a strong recommendation rationale for all staff to be waiting, RPE if they're caring for patients with measles.

Steven Hams 47:08
Great, thank you. I, let's go to the next question. Which again, is an IPC question, but relates to the range of cleaning products and regimes required and health care and community settings, following measles exposure in the environment. And Mark did kind of touch on this in terms of the fallow period? But again, Catherine, can I come back to you in Val for that one?

Catherine Boswell 47:33
Yeah, of course. So yeah, obviously, the valid time is important. I think there have been other questions on the Slido about this and we might go into this in more detail later. But as well this has two parts to it that's healthcare settings and community. And I would say like from an NHS England perspective, the community's not quite within our remit. And given the number of different settings, you might have childcare, education, patient's own homes, there might be quite a bit of variation and how you might manage decontamination in those areas. So that would be probably for local health protection teams to advice, but certainly in healthcare settings, we will be recommending something called the terminal cleaning and inpatient setting where you would leave the required fallow time, and then you would remove any wastes, linen, etc. From that clinical area. All equipment will be decontaminated using the detergent and disinfectant and the same thing would happen to the environment. Now, in terms of specific products, we typically recommend 1000 parts per million of hypochlorite that might be a sort of a sodium hypochlorite solution. But we're aware that certainly in lots of different healthcare settings, alternative products aren't being used. Measles is susceptible to a wide range of different disinfectants that includes sodium hypochlorite, but also alcohols, phenols, and glutaraldehyde. The most important thing that you can do when determining what product to use is to look at the manufacturer's specifications and see, if there evidence that this meets the standard that it would be effective against measles, check

the evidence and make sure that you're using that product in accordance with the manufacturer's instructions.

Steven Hams 49:00
Right. Thank you. I'm going to come on to sort of a general question about the environment and ventilation. Brand new hospitals, Mark, like yours and mine, generally have ventilation sort of fixed. But of course, there are many colleagues online who will be working in secure settings and GP practices and other environments where the air changes aren't quite as we would enjoy here in an acute organization. And just wondering, just the terms of environment and ventilation particularly, what some of the recommendations might be. Mark, I just go back to you just in terms of how you've managed in Birmingham then maybe to again back to Val and Catherine about a wider view.

Mark Garvey 49:46
Yeah, like I said how we how we managed it is, you know, we did get pushback on that ,you know, from COVID we pretty much know our air changes in certain rooms but it is a bit of an unknown. Like I said, there's a lack of evidence around that. So there are different things you can do from air scrubbers, from COVID, things, things like that. So how we, like I say, how we manage that is how I said in the presentation, but it is tricky for that. That's just some of the challenges that we've got. We don't know like how long lots of this has been out there about AGPS, not so much around like measles specific patients on their own.

Steven Hams 50:26
Okay, thanks, Mark. Val or Catherine?

Catherine Boswell 50:33
Jumping on this, I think most of the questions we probably received on this are not in inpatient settings, but primary care. It's very difficult for us, or impossible to give really, prescriptive advice on how long a fallow resting time might be for a room. Because it depends on the number of air changes you have, a lot of the time that might be unknown. And usually with natural ventilation, and there are calculators, free calculators online, usually from dentistry, that you can use to try and calculate your air changes and what a fallow time might be. RHI Scotland also have some really useful resources, that could be helpful. But for a naturally ventilated area, you might see it's sort of one to two year changes per hour. And I think Mark, you spoke about in your presentation about sort of pragmatic decisions around about two hours, I think, is that maybe related to the sort of survival of measles?

Mark Garvey 51:24
Yeah, we worked with our estates team. So again, we're looking in as much as acute settings, we worked with our estates teams on that so they can give you those kinds of calculations. But you are right, outside of the acute setting that is a little bit more tricky.

Catherine Boswell 51:40
I think we're trying to figure out some sort of generic advice that we might be able to give to support that local decision making. But given that measles survival in the air is, probably depending on what source, you look at one to two hours, I would say probably a minimum

two hours if you don't know what your ventilation is, but you would, again, need to think about that locally, and that may will have an impact on your service as well.

Steven Hams 52:00
Right, thank you. Vanessa, we've got a range of questions about vaccination generally and I was wondering could I come to you to, if I can try and wrap some of that up? So there's something about if you're unsure of your vaccination status or your dates of your vaccine, can you just get vaccinated again? Right the way through to thinking about the break through cases and to what extent have the cases been break throughs? So what's the general view about vaccination?

Vanessa Saliba 52:34
Well, the very short quick answer is that there's no harm receiving an extra dose of the MMR vaccine, so that's fine. However, obviously, we don't want to spend a lot of resource vaccinating people who are already up to date. And so first thing to do is check your record. And obviously, in the context of being a healthcare worker, that's a clear occupational health responsibility for occupational health services to have up to date records of their staff. And as per Green Book guidance, you can also use evidence of past immunity. This is obviously not for the general population and the general population, we don't test, we just say if there's no record, go ahead and vaccinate. But for healthcare workers, there is obviously that option as well. And I think really, really important for the systems to be in place and resourced adequately to be able to do this, obviously, proactively as new staff come on. But I think there are significant challenges with doing it retrospectively, for staff who may have been onboarded before, maybe systems were in place and so on and so forth. But as Mark has very eloquently described, it's really challenging to do it in the middle of an outbreak. So this is the time to get your house in order. And to sort that out before, you know, you get an exposure in your setting. In terms of breakthrough infections, we have information on it in our national measles guidelines. As you know, what's been explained, no vaccine is 100% effective. So it does happen. Most of them. I think Mark touched on it. Many of the breakthrough infections we pick up are in health care workers, because when they've had an exposure, they're very aware of that. And obviously, as soon as they have symptoms, they would report and be tested. And you will pick them up on PCR. In the community obviously they arise but because often it's very mild presentations, they may not seek care, they may never be tested, and we probably don't find out about them. I think with my public health hat on, and from a kind of global elimination perspective hat on, they're not a particular concern because the evidence of onward transmission is very limited. So although you can get a mild presentation, and you can be positive on PCR, the evidence of onward transmission really is only in household settings. So I think obviously, and I have to couch everything I say in that everything that my colleagues in NHS England have said about your duty to not, obviously, put patients at risk and so on, and all the infection prevention control advice that was given still holds. But overall, they're not a significant public health concern, because onward transmission generally occurs in the household setting, rather than a healthcare setting. Having said that, obviously, there is also that, again, it's rare, but it does happen, you can get primary vaccine failure. And it's sometimes hard to distinguish in the acute setting, is this a breakthrough infection or is this a primary vaccine failure? And if it's a primary vaccine failure, you clearly can then infect others. And so that may be a challenge. But overall, this is this is going to be very small numbers. And as I said, as long as we have high uptake with

two doses of the vaccine, we will be able to interrupt transmission and stop outbreaks. Does that cover it?

Steven Hams 55:56
Yeah, brilliant. I'm just wondering, just in terms of vaccine uptake in the West Midlands, Mark, have you seen an increase in vaccinations as a result of the outbreak?

Mark Garvey 56:04
Yeah, again that's a very good question. So again, it's tricky with the population. So I'll give one example of that. You know, we did an educational campaign in a school and then we ended up with having five students who had a vaccination, so it is tricky within that, so I think we've done, can you remember, is it 2000? Yeah 2000 have had the vaccination. So again, it's a multi-pronged approach, from an education and a comms point of point of view, you know, everything from Tik Tok to social media to Instagram, that kind of stuff. So, you know, it is challenging. Like I said, around that school, you know, you go in and do lots of stuff around that, it is challenging.

Steven Hams 56:53
Great, thank you. Another question about treatments - has much IVIG and HNIG been used during these current outbreaks in the West Midlands and London? And have you found any supply issues? And how, if you have, has it been managed?

Mark Garvey 57:08
I mentioned that through the through the talk, so no is the answer from a supply issue and we haven't had huge amounts, as you saw from the presentation, we've, you know, we've only given 30 doses in pediatrics, a lot of people say no, actually, to it. And then in haematology, solid organ transplant, we've only had like, one in that. So we just manage that in-house.

Steven Hams 57:33
And Mark just in terms of maternity, and neonates, what's any specific work you've done around that in Birmingham?

Mark Garvey 57:43
Again, that's around, like, similar to what I mentioned in the presentation on that is around, you know, education triage recognition. Similar to what we've done before, with all of that. So, you know, it's, again, similar to all of it really. So, a general comms basically.

Steven Hams 58:07
Okay, thank you. We are horribly running out of time. But we've got one more question, Vanessa, I was wondering if I'd come to the whole panel for this last one, which is: what proactively can be taken to prevent future measles outbreak or indeed, other similar VPD, taking advantage of available data and knowledge, and not being reactive? Vanessa, to you first.

Vanessa Saliba 58:30

I think it's really important question. And we're trying to push that nationally as much as possible to work with our system partners regionally and locally that yes, we need to respond to the outbreak, of course we do. But really, the key is getting sustainable, embedded approaches to getting our data available and sorted so that people know their status, and so that systems know their population status. And then catching people. One, strengthening our routine childhood program to get back on track, and then two, embedding routine sustainable approaches to catch up, including, I would argue, you know, using schools for kind of key checks, for key milestones. So I think it has to be- you know, the reasons for the fallen uptake are multiple and complex. So it's no one size fits all or one intervention that's going to do it. But there needs to be, I would say long term sustainable funding, one, for local teams to work with communities to build that trust and engagement in peacetime, not when we have an outbreak and then have tailored approaches to be able to reach those communities. So getting the basics right with our core recall, in primary care and strengthening that and then having tailored approaches to reach under vaccinated communities and building trust. Yeah, that is it in a nutshell. Thanks.

Steven Hams 59:53
Brilliant. Thank you, Mark briefly from you.

Mark Garvey 59:55
Yeah, I think it's obviously vaccination is the key, you know, I sound like a scratched record. But as soon as we had our first couple of cases in October, November, I pretty much saw that this would occur and we weren't set up as a system to do that. So you know, I knew the vaccination was low. So again, it's like vaccination, or immunisation. And then clinical recognition as well. Those are the key things. There's obviously inherent problems that you pick up that, you know, I've picked up through them. Inherent problems like the staff vaccination as well. Other things probably from an acute point of view, it's really important to link in with your informatics teams, because they've been massively supportive, with like the text messaging service, and you know, knowing where all our patients are, that's made our lives a lot easier. And then, you know, comms with the messaging.

Steven Hams 1:00:53
Brilliant, thank you. And Val and Catherine, finally to you. And briefly if you may.

Val Weston 1:00:59
If I go first, I think from the point of view of what Mark has been saying, especially around knowing the status of your staff, because if you're in an outbreak situation, and you're running around trying to find that when you actually need to be doing other things. So to be more proactive, with our occupational health colleagues, that actually we know the status of our staff and that they're protected. And I think the other thing is to make sure that those pathways are there. So that the - and in an acute setting, it might be that actually, it's a lot easier to do it, but in GP settings and outpatient settings, how would you go about doing it? Doing a risk assessment, so that actually those plans are in place, that your staff know what they're doing at those particular times, prior to going into an outbreak situation.

Steven Hams 1:01:57
Brilliant. Thanks, Val. And Catherine, finally, to you,

Catherine Boswell 1:02:01
Val's just stolen most of what I was going to say. But probably one thing to add would be familiarity with the guidance. We've had quite a lot of questions around essential things like do I need to wear RPE? What sort of things like disinfectants would I use? And I think having a clear understanding of, as Val said, things like the pathways, but also how are you going to implement that IPC guidance? And what are your current processes? And do you need to do anything different? And thinking about that in advance?

Steven Hams 1:02:28
Great, brilliant. Thank you. Colleagues, thank you very much for joining us today. There've been over 900 at its peak colleagues joining us so huge thank you to you. I'd like to say a special thanks to Vanessa, Mark, Val and Catherine for joining us, hugely appreciate it. And thank you for giving up a bit of your time, certificates of attendance will be sent out after the event. A recording and transcript will also be available after the event. And we will email those links to attendees. And of course, your feedback is really, really important. So please, feedback. There's a QR code there to give us your feedback on the event. I know that we haven't been able to answer the close to 150 questions we've had. But we'll do our best perhaps to answer some of those and email those around. But for now, colleagues, thank you very much. Thank you for all that you do to keep our communities, patients, population safe. It's hugely, hugely appreciated. Thank you.