

Transcript: Webinar – Spotlight on guidelines: Management of norovirus outbreaks

11 July 2023

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During this webinar our expert panel answered questions on the guidelines for the management of norovirus outbreaks in acute and community health and social care settings produced by the HIS Working Party.

- **Val Weston**, Infection Prevention Society
- **Eamonn Trainor**, Manchester University NHS Foundation Trust
- **Aggie Bak**, Researcher in Evidence Synthesis, Healthcare Infection Society

Chair: Eimear Brannigan, Antimicrobial Resistance and Infection Control Division, Health Service Executive, Ireland

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Eimear Brannigan 00:02

This is part of our Spotlight on Guidelines webinar series. And today's focus is on is called management of norovirus outbreaks. I'm your chair this evening, I'm Eimear Brannigan and I work in the antimicrobial resistance and infection control team in the National Health Service executive in Ireland. We're really fortunate today we have a panel of people who've worked very hard on writing the Norovirus guidelines and therefore are very well placed to tell us about this topic. So I'd like to invite each of them to introduce themselves. So I'll invite firstly Val Weston.

Val Weston 00:49

Thank you, Eimear. So I'm Val Weston. I've been an infection control nurse for about 18 years now. I'm a former honorary secretary of the Infection Prevention Society. And I represented the IPS on this working party.

Eimear Brannigan 01:09

Thank you, Val, and Eamon Trainor.

Eamonn Trainor 01:14

Thanks, Eimear. I'm Eamonn Trainor. I'm a consultant in medical microbiology and infection prevention and control doctor at Manchester University NHS Foundation Trust. So I've been a member of the HIS norovirus Working Party group. And I also have a research background in norovirus with a focus on molecular epidemiology.

Eimear Brannigan 01:39

Thank you, **Eamonn**. And Aggie Bak.

Aggie Bak 01:45

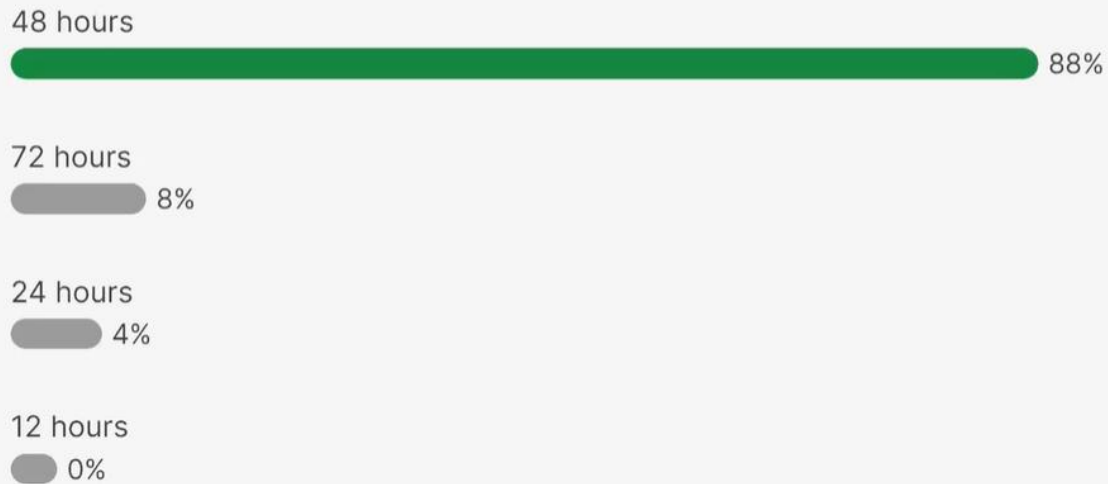
Hi, I'm Aggie, and I'm a researcher in evidence synthesis at Healthcare Infection Society. And I'm responsible for doing evidence synthesis and putting the guideline manuscript together really.

Eimear Brannigan 02:00

Thank you Aggie. Okay, so you have a good sense of the expertise and wealth and depth of knowledge of our panelists today. And so perhaps that might have sparked some ideas for you to ask questions. So, we're going to get started in a moment. But just a little bit of introduction to how it's going to work if that's okay. Before we before we, when we circulated information about the webinar, we asked you to submit questions to put to the panel. And so, we've selected the six most popular questions for the panel to discuss during the first 40 or so minutes of the webinar. During the last 15 minutes or so we will answer live questions well our panelists will answer live questions which you can submit via Slido. You should also through the event be able to see to use Slido to express your opinion by voting on a couple of live polls that we're going to run during the webinar. So to participate in the polls, you've got some information on the screen there. And to submit questions, please open the Slido app or go to Slido.com and enter the code that you see on the screen there. So hashtag HIS. Okay, so we're going to get started now with an audience poll to get your thoughts on this question, which is, 'How long should healthcare workers affected by norovirus be excluded from the workplace after their symptoms of diarrhoea and/or vomiting have resolved?'



How long should healthcare workers affected by norovirus be excluded from the work place after their symptoms of diarrhoea and/or vomiting have resolved?



And so I'm going to give you a few moments to respond. And a few of you started to answer which is great. And it's always interesting when you can see what other people have said already. But we've definitely got a preponderance of people saying 48 hours from among those who've responded and a few saying 72 hours so a little bit longer. Small number saying a little bit shorter so 24 hours. Nobody risking return to work a 12 hours. So we have about a quarter of participants have responded now. might just give it another few seconds. And I don't think it's going to materially change now if we need for any longer. So there we are. There's a first question to get you started and get you thinking about and also a little bit of practice with the Slido Poll. So we might just start off and Eamonn and I think you're going to kindly introduce the guidelines and give some context, a little bit about their scope and give our audience a sense of the different healthcare settings and where they apply. Over to you Eamonn.

Eamon Trainor 05:08

Thanks again Eimear. Just to say welcome to everybody who's joined the webinar this evening. So I'm just gonna give a little bit of an overview to the guideline writing process and a bit of background. So, first thing to say is, Norovirus is still a big problem. It remains the most common cause of acute gastroenteritis worldwide, and outbreaks continue to have significant impacts upon health and social care systems. Estimated cost to the NHS annually from norovirus is 100 million pounds. So in the in the absence of continued effective treatment or vaccine options against norovirus, IPC measures remain the primary line of defence against outbreaks. The last UK norovirus guidelines were published over a decade ago. So there has been some delay with these new guidelines coming out. And that has not been helped by pressures arising on the working group during the Coronavirus pandemic as well. So there are now, there's new knowledge and technologies that have emerged in the intervening period. And this has necessitated review and where sufficient quality of evidence exists, updated guidance. So just to talk about the methodology,

so the Healthcare Infection Society adopted a NICE-accredited methodology for guideline development in 2015. The benefit of this is greater rigor and guideline development than before. The Working Party is consisted of a group of multidisciplinary experts. And we've also had representation from lay members so that our patient and public perspective and voice comes through. The scope of these guidelines is to provide recommendations for the control of norovirus in both acute and community health and social care settings. So this includes hospitals, and other closed and semi enclosed facilities, and healthcare and social settings, including but not limited to nursing and residential homes and hospices. A more general point I would like to make, and certainly something I've taken away from my involvement with the working party is the absence of high-quality evidence to inform a lot of IPC interventions. And this is certainly the case for norovirus. So, I predict studies usually involve multiple interventions and are not controlled. The continued inability to cultivate norovirus in the laboratory has really limited our ability to answer a lot of the basic science questions. So, for example, we still don't know what method of disinfection is best for hands and for the environment. And we don't know what the duration of infectious shedding so that's shedding of virus capable of causing infection in other people install following acute infection is. However, saying that and I'm sure Aggie and Val would agree, that the working party are satisfied that these recommendations represent a set of best practice principles around which there is significant consensus.

Eimear Brannigan 08:42

Thank you. Eamon. I think you've set the scene really nicely there for these questions. So I think it's probably timely that we move on to our first question, and I think we're going to see it up on the screen now. And we are and so first question, and that is for you, Eamon. In fact, a follow on 'What proportion of individuals exposed to norovirus will develop symptoms and do those who are asymptomatic shed virus?'



Question 1:

What proportion of individuals exposed to norovirus will develop symptoms, and do those who are asymptomatic shed virus?



Eamon Trainor 09:14

Thanks Eimear. I think this is a nice question for us to start with, as it gives us an opportunity to review the transmission and some of the clinical features of norovirus. So firstly, norovirus occurs in

all age groups, and, as I've mentioned a wide variety of settings and is the most important cause of infectious gastroenteritis worldwide. It is a highly infectious virus and transmission is via the fecal oral formite oral routes. So this may occur by direct person to person contact, contact with environmental fomites, or ingestion of contaminated food and water. There's also some evidence to suggest a role for airborne transmission following vomiting. And this is an area that I think we're going to come on to in a later question in more detail. So, if we look at the evidence base - so the clinical observations from volunteer studies and outbreaks have demonstrated that following exposure to norovirus, individuals may experience an acute onset vomiting, and or diarrhoeal illness, and then approximately 1/3 of individuals an asymptomatic infection. So the major clinical features of symptomatic infection include nausea, vomiting, non-bloody diarrhoea, abdominal cramps, and fever, as well as constitutional symptoms like headache and muscle aches. In young infants under a year old, diarrhoea tends to be the predominant feature. And we see from it and typically more in older infants and adults. Studies from healthy adult volunteers who were experimentally infected with norovirus kind of demonstrated that the average incubation period following exposure is about 24 hours on average, and the illness typically lasts 24 to 48 hours. However, in hospitalized patients and young infants, the clinical symptoms may be more prolonged anywhere from four to six days, and the symptoms may be more severe. So most infections are self-limiting. However, mortality has been seen in elderly comorbid hospitalized patients and in childhood diarrhoea in less developed settings. So as I've mentioned, approximately 1/3 of exposed persons don't become ill. So the reason for this observation was initially unclear. As antibody levels in these experimentally infected volunteers didn't correlate with protection against developing illness. What we now understand is that there is a genetically determined mechanism for natural protection, or immunity against norovirus, where some individuals do not express certain receptors in their guts necessary for infection to take place or take hold. We know that viral shedding and still precedes the onset of symptoms in up to 30% of exposed persons. Also, the virus shedding or excretion, and still, albeit at lower levels is common in asymptomatic individuals, especially in children. So what are the implications of all this to IPC? So there's some evidence for transmission from asymptomatic food handlers, who may not be observing good hand hygiene, preparing food, and in paediatric and other childcare settings, where following good hand hygiene is more difficult. However, I think it's worthwhile pointing out that most of the evidence, looking at the transmission of norovirus in healthcare settings suggest that symptomatic individuals are the primary source of person to person transmission. And that is really where we should focus our control efforts. So just to summarize on this question, Norovirus is highly infectious, and person to person transmission is via the fecal oral and formite oral routes. Studies in healthy volunteers have demonstrated that approximately 1/3 of exposed individuals do not become ill following exposure, and that natural genetic immunity plays a role. Sharing of norovirus in the stools of asymptomatic persons is relatively common, especially in children. But it is likely not the most important source of onward secondary transmission in healthcare settings.

Eimear Brannigan 14:14

Thanks very much Eamon. Okay, do either Val or Aggie want to add to that before we move on to our next question? You can pick up some points if you wish in your in your contributions. So we might move on to our second question then. And the second audience question that we've chosen is, 'How would you identify that you might have a norovirus outbreak?' Seems like a simple question, and over to Val.



Question 2:

How would you identify that you may have a norovirus outbreak?



Val Weston 14:42

Thanks Eimear, it is a very broad question and as an infection control nurse we've lived, breathed, slept, norovirus outbreaks. So, when I looked at this question, it was a case of what's the definition of an outbreak in the first place. So, I went to the World Health Organization who actually say that an outbreak is an occurrence of cases of disease in excess of what would normally be expected, to be defined in a community or geographical area. I went and thought, I'm going to come up with an example. An example of this would be that you come onto a shift, wherever it might be, and it's reported to you that you've got two cases of diarrhoea and or vomiting. That can be patients and it can be staff members. These two cases can't be explained away by any other medical reasons. So, it can't be explained away because the patient just had an enema, or some suppositories, or that they are actually on antibiotics and the antibiotic has actually upset the stomach. But this can't be explained away. What I would say in my experience is by the end of that shift, if it is a true norovirus outbreak, you won't just have two patients or two members of staff, you will have a lot more patients or staff. So, it can happen really, really quickly. I think having worked in paediatrics and as Eamonn said before, paediatrics and children don't tend to follow the same, so I would say that in a paediatric environment, that can happen even quicker, because your children are running around, hands everywhere and everything like that. So, in paediatrics it tends to happen quicker, whereas it doesn't tend to in adults in the same way. So, at that particular time where you've got these patients, and you're getting more patients, it would be a good idea, actually to look at an outbreak monitoring tool, and to start to work with an outbreak monitoring tool. That is not only for the cases that you're seeing at the beginning, but also the new cases. This outbreak monitoring tool will be great when you're looking at having meetings and reporting as you go along with an outbreak. You need to look at communication at this time and actually, whether it's suspected, or it actually is a confirmed norovirus outbreak, you need to actually let your infection control team know. And you also need to let patients and families know, because you might need to restrict your patient, your family and your visitors at that particular time. You will need to widen who's involved as it goes on and who needs to know, which stakeholders are invested and where the outbreak is. You also need to consider control measures before any form of laboratory specimen results are available. So, you need to put things in place, and we'll be discussing that a little bit later on. You need to put them in

when you're actually suspecting a norovirus outbreak. Where possible, you should test your patients who have symptoms and I think what I would also say is, it is sometimes very, very difficult to get fecal specimens off patients and it's probably more difficult to get fecal specimens off staff members. You could use, but what you have to be aware that it's probably not as sensitive, but you could use a rectal swab, and you could use some vomit, to be able to diagnose that you actually have a norovirus outbreak. Happy to take a couple of questions?

Eimear Brannigan 19:29

Thank you very much Val, and again, I might just move on to the next question if that's okay, and again Aggie or Eamonn, if you have other comments that you want to add, you might include them in your next comments if that's okay. So, the next question that we're going to consider is this one, which came in from again our audience - is there any benefit to acquiring norovirus other than weight loss? And has vaccination been considered for such a short acute illness. And Aggie, you're going to attempt to answer some of these points and tell us some of your thoughts on this. Thank you.



Question 3:

Is there any benefit to acquiring norovirus (other than weight loss!)? Has vaccination been considered for such a short acute illness?



Aggie Bak 20:12

Thank you. So, I think the only benefit I can think about is that it is actually for most people a limiting disease, and you will eventually get better. And that's probably the only benefit really, because even the weight loss is probably going to be very temporary, because you just lose lots of water and nothing else. I think for most people, the obvious benefit would be the immunity. But unfortunately, if you look at the literature, it doesn't really last for a very long time, there was only one study, which was a mathematical model, which suggested that some people might have immunity for up to six years, but this is probably very rare. And if it does happen at all, for most people, it's usually a few months, and the experts would suggest that three months is probably the threshold and after that you can expect that human immunity to norovirus is lost. This is only for one type of norovirus, so you technically could get infected with another type very, very soon. So, you don't really have much benefit for that. And this is the reason why it's so challenging to find any vaccines for norovirus as well, because getting a vaccine that would cover so many different types would be very

challenging. We definitely looked at the literature for vaccines, and there have been some trials, but nothing has been published at the time we were publishing the guidelines. As far as I'm aware, nothing has been published since. So, I think some protocols are available, but I don't think the data suggests that any of the vaccines have been successful at any point just yet.

Eimear Brannigan 22:26

Thank you, Aggie, do Eamonn or Val, want to add any comments to that?

Eamonn Trainor 22:33

Thanks. Yeah, just to kind of echo Aggie's points around the difficulty in developing vaccines for norovirus. So, a lot of this comes back to a point I mentioned earlier about inability to cultivate the virus in the laboratory. And that has held back a lot of the more basic science research for norovirus and that includes vaccine development, because it really limits the development of wholesale vaccines for norovirus. So, I think that has really held back a lot of things with norovirus. Also, I guess another thing is the immune correlates of protection or the immune response that would be indicative of an infection, isn't completely understood for norovirus either. So that is another difficulty with vaccine development. There are some vaccines that have gone through early-stage development, but certainly there are no currently licensed vaccines that exist or any that have gone through trials that have proven to be effective. And another point just to make is norovirus is a bit like flu, so it's an RNA virus, and you know, it will mutate over time, and you will have different strains every few years. So, if we did get to the point of developing a vaccine, it would likely be in the form of a flu vaccine where, you know, you would have to have your vaccine, every winter just before norovirus season kind of peaks.

Val Weston 24:19

I think from my point of view, as well, I'd say if anyone has ever had norovirus, it is a very drastic way of trying to lose any weight, and I agree with Aggie, it'll just be fluid that you'll be losing and it's not a very nice virus anyway. I think we don't need to diminish what effect it has on a patient because actually, it is quite debilitating for that patient and obviously, they run the risk of dehydration and that as well, especially in the elderly people and young children, it can be quite devastating for them.

Eimear Brannigan 25:09

Thank you all. So, no real upsides to this pretty nasty virus for most people, and certainly not hearing much about immunological benefits, or that vaccine is successful to date. So, thanks so much, everyone for your comments. I think we will move on to our next audience question, please. And Eamonn, you might help us address this, which is what are the clinical features associated with long term norovirus infection? And how long can individuals remain infected? Thanks, Eamonn.



Question 4:

What are the clinical features associated with long-term norovirus infection, and how long can individuals remain infected?



Eamonn Trainor 25:45

Thanks Eimear. So, I think this is an interesting question, because it's actually a new area that we examined and addressed in these guidelines, so it hasn't previously been included. I think it is a useful question to ask because this is increasingly being recognized as an emerging problem as the population of immunocompromised patients, certainly in developed settings, increases with better health care. So, we did review the available evidence to see what best strategies there are for prevention and management of norovirus and immunocompromised patients and that included chronic norovirus infection. So, as I previously mentioned, norovirus is often a self-limiting short-lived illness, in otherwise fit and well people. The symptoms usually resolve within one to two days but can be more prolonged in hospitalized patients. However, it is recognized in individuals with suppressed immune systems, they are at increased risk of more prolonged, more severe and even life-threatening infection. So, I guess this brings us to the question, what is chronic norovirus infection? So, there is no clear definition in the literature about this. But I guess we could say it is the persistence of clinical symptoms, usually diarrhoea, alongside detection of norovirus RNA in stools and faeces. So given that most cases of gastroenteritis with norovirus settle within a week, I guess we could say symptoms and viral shedding lasting longer than this, those things may indicate a chronic infection. So, we know that the virus can be shed in stools in low levels for up to eight weeks in previously healthy people and for even longer in more immunosuppressed patients. So, there are some case reports of immunosuppressed people and patients, who have undergone organ transplantation, where norovirus has been detected for several years following an acute infection. So, as I said, we did review the evidence base around this and preventative measures and management for immunosuppressed people. I think the first thing to say is the evidence base was weak, and mainly came from case reports and small case series. When we looked at preventative measures, there was no good evidence to recommend any clear strategy or approach. So, I guess the key point here is that good adherence to IPC measures, especially hand hygiene, and the other measures described in these guidelines, is really of vital importance in preventing transmission of norovirus to immunocompromised people. In terms of management of immunocompromised patients with norovirus, again insufficient evidence to make clear recommendation. However, there was some evidence of benefit for some of the therapeutic interventions that we looked at. However,

it is important to note that some of these therapies resulted in harm and that harm may outweigh the benefits. So, it's important to note, to take account of individual risk assessment. So, considering the weakness of the available evidence, and the rarity of this clinical entity, we were only able to make any clear recommendations in this area, as I've said, kind of apart from to say or to acknowledge that the clinical and infection control management of patients with chronic norovirus presents significant challenges. Just to finish with two points really, I think if you're faced with a situation where you've got, an immunosuppressed patient with chronic norovirus infection, I think it's important to consider an MDT approach really for the management of these patients. So that would maybe include infection specialists, immunologist, dieticians. There are some things that can be looked at, like reduction of immunosuppressive therapy, optimizing nutrition and in some cases use of a novel or emerging therapeutics. For IPC, the duration of infectious shedding in stool, so that's where you continue to shed the virus that is capable of infecting another person, that's unknown, so we don't know how long that occurs for. The available diagnostics, detect the genetic material of the virus, but they're not able to tell us if that virus is alive or dead, if that's the right word to use, or if it's capable of infecting another individual. And again, that comes back to the lack of culture system for norovirus. We also don't fully understand the role of these kinds of chronic norovirus shedders and what role they play in the emergence of new strains of norovirus, or of their contribution to onward transmission. I think though, however, just to come back on a point that I did make recently, looking at the evidence for transmission of norovirus in healthcare settings, that does suggest that it's actually symptomatic individuals who are the primary source of person to person transmission. So that's individuals with acute norovirus infection. And that's really where our control efforts should be focused.

Eimear Brannigan 31:56

Thank you very much. I'm aware of the time and that we've got a couple of pre-submitted questions to get through before we get to audience questions, so if you're all comfortable we'll move on to our next question, which Aggie I think you're going to help us with. This is to do with the use of personal protective equipment. What are your thoughts on recommending masks or general personal protective equipment to nurse norovirus patients, given the high transmissibility and particle spread during vomiting and/or diarrhoea?



Question 5:

What are your thoughts on recommending masks or general PPE to nurse norovirus patients given the high transmissibility and particle spread during vomiting/diarrhoea?



Aggie Bak 32:39

I think I'm going to start with masks in general and the same rules essential are going to apply for other PPE as well.

So, unfortunately, most of the evidence for PPE comes from very poor study designs – essentially the majority are outbreak studies. With outbreak studies, you don't have a control group so you can't really compare it to anything. You usually have more than one control measure introduced at the same time, because obviously if you have an outbreak anything goes – anything which is going to be working, you just have to introduce that.

Another problem is, being a self-limiting disease, it may just get better on its own so you don't really know that, whatever you introduced, whether it really worked or whether, you know, your norovirus outbreak just stopped on its own. Another problem, especially with masks, was that with so many different ways that masks were recommended as well, it could have been a universal precaution for every single healthcare worker, it could have been just for clearing vomitus and diarrhea, it could have been for caring for patients with norovirus, it could have been introduced for all the staff or only for some staff, or even for residents or visitors. So it's really difficult to actually untangle and see what works and in which situation it has worked. So the only thing that can be said about this is that in about half of the outbreak studies, when they introduced masks, masks themselves didn't work or with other control measures. So they definitely are not the only option that are going to stop the outbreak.

There was one cross-sectional study that we found as well, which in general said that for healthcare workers, there was less incidence of norovirus infection if nursing homes were using masks for clearing vomitus and diarrhea, however there was no difference for outbreak outcomes as such, because the residents were still getting sick. So it might be protective for healthcare workers but not for the outbreak in general. There was only one outbreak where they used the respirator masks, and even though they said that introduced with other control measures, it was successful in stopping the outbreaks, they also changed their guidelines soon after the outbreak and recommended using masks

instead of the respirators. So even though they never really said why, presumably respirators were not a very good idea for outbreak control as well.

This is just for masks. Gloves, probably even more hazy because everybody's just essentially using them so it's really difficult not to. The only thing that came out from one outbreak was that – and we know this from the literature as well – that people were less likely to wash their hands. They were thinking they were protected by the gloves, so obviously they were making things worse. So it could be gloves are making things better, or it could be that they're making things worse, and we really don't know anything about the setting of the particular place where the outbreaks were taking place, I guess.

For some studies that looked into aprons and gowns, we didn't really find any convincing evidence that any of this worked. It didn't work for the aprons themselves that they use in nursing homes – that didn't really make a difference for any residents or for the staff. So it didn't really change anything for the norovirus, there is even less evidence for the gowns. Again, just used for outbreak studies without any control group so it's really difficult to say anything. I am aware that there were some guidelines that were introduced a few years ago. I think that it was the CDC who recommended respirator masks. But based on the evidence, it doesn't really look like there is much point, and we really don't know.

So, the bottom line, and I think this is what was discussed by the working party quite extensively, is that we can't really recommend for or against any of the PPE items, unfortunately. And we just essentially decided to stay with the same recommendations that have always been recommended. These are mostly based on good practice points and they are essentially up to individual institutions what they do want and don't want to introduce for their outbreaks.

Eimear Brannigan 38:21

Thank you very much Aggie. And I'm sure it's an area that Val might well have some comments on, but I know Val is about to tell us about the next question. So perhaps Val, if you want to, you can add in some points during your question if that's okay, thank you so much Aggie.

And our last audience pre-submitted question – I believe there are a few live questions for us after this. Our last submitted one: What are the environmental measures that need to be considered if you do suspect a norovirus outbreak? And neatly linking to her comments earlier, Val is going to help us address this one. Thanks, Val.



Question 6:

What are the environmental measures that need to be considered if you suspect a norovirus outbreak?



Val Weston 39:01

Thanks Eimear. This is a great question. As Eamonn alluded to at one point in his answers, a lot of this is about IPC practice, and infection control practice and what we do. So from that point of view – from a cleaning point of view – you probably, if you're suspecting a norovirus outbreak, you want to introduce a more high frequency of manual cleaning as soon as possible. And that's cleaning and disinfection. And you need to keep that going not just at the beginning but during your outbreak. You need to take into account a particular emphasis on high-touch points where people's hands will be, and also on toileting equipment like your toilets and your commodes.

So that's where you need to go. You need to make sure that your staff are appropriately trained, and that they know what good cleaning means, of the environment. You need to use a 0.1% 1000 PPM hydrochloride for disinfection, at these particular times, and also make sure that if there is any soiling you remove that before you even start with your disinfection. You need to avoid your soft furnishings – and this is like bread and butter to infection control nurses – that those soft furnishings actually can't be cleaned properly. And, you need something that's wipeable, that's non permeable, that you're able to clean and disinfect at a particular time.

When it comes to the terminal cleans, you should conduct them as per your local policy. And that might mean that you use an enhanced cleaning like your HPV or your ultraviolet light, but you should also ensure that, actually, it's a minimum of 72 hours after the symptoms of your last case of norovirus has been resolved. You need to appropriately decontaminate any reusable cleaning equipment that you might use, but preferably actually you would look at having single use items, if you can, and ensure your staff are trained also in how they did the appropriate sequence of cleaning, because there's no point in cleaning a dirty utility area and then going out onto a ward and cleaning in those areas so you need to make sure that they know what the priorities will be or which order to do them.

From a medical equipment point of view, you need to make sure that you read the manufacturer's instructions on how to decontaminate and that you use that, and as part of that use local policy. But you need to also be aware that some of these disinfectants might corrode some of that equipment so

you need to have taken that into account, conversations need to have happened and local guidelines need to be there so that you're aware if that is the case. And if possible you would look at different pieces of medical equipment. If you can possibly use single use use it because actually that could be discarded and replaced rather than you going in and cleaning the pieces of equipment. From an aluminum point of view, just ensure that all linen is handled and segregated according to national guidance.

Food and drink: you need to reduce the potential transmission of your food. You need to make sure that food is covered, or it's individually wrapped, or it's not exposed to the environment. You need to remove all exposed foods and utensils. And this probably is one of the things I would probably say, because it's a common thing that affects control, sort of cancel Christmas. When there's loads of chocolates about, when there's biscuits about and they're on the wards and they're on the ward office areas, and then you have an infection control team that will come round suspecting a norovirus and dispose of these things, they will go into the bin because they're nicely exposed to everything – all the norovirus going around those areas. So that's where 'infection control and canceling Christmas' comes in I think!

You need to remove any drinks or food that's been exposed if someone's just vomited, or has just had explosive diarrhea, you need to move it straight away from that area and also ensure you support their... you maintain... I alluded to that before, that you actually need to make sure that your patients have adequate nutrition and also hydration at this particular time because that is really important, because norovirus can cause rapid deterioration in hydration.

So that's really the answer to the question to do with the environment. What Eamonn alluded to with hand hygiene is actually, we couldn't really find that much evidence with regards to the fact that historically, infection control will say 'don't use alcohol gel at these particular times, you need to wash your hands'. Not that much evidence out there, but it will be something I will be advocating at those particular times. Having good hand washing is what you need when you think you'll have a norovirus outbreak, or you do have norovirus outbreak. So hopefully that covers most of it.


Eimear Brannigan 45:21

Thank you very much, Val, great.

I think we've had a good go of addressing the pre-submitted questions so thank you to all three of you. I understand we have some questions here that have come in during your presentations. The challenge now is for the team behind the scenes to choose some that we can then send in your direction. So what we might do is do a quick poll first – I think we have a poll for the audience, just to make sure that there are still people out there! And do you have that ready to show now Ros? So for those of you who are still with us, we have a question about testing. We'll have some quick comments, and then we'll move on to the live questions.


So what do you think in your view is the best available test to diagnose norovirus outbreaks?

☰ Active poll



Join at
slido.com
#HIS

What is the best available test to diagnose norovirus outbreaks?



PCR 92%

Kaplan's criteria 4%

Enzyme immunoassay 4%

Antibody test from serum blood 0%

We've some early entries for PCR, we've a little bit of enzyme immunoassays, nothing at all for Kaplan. Oh, we have a little bit of a vote for Kaplan's...

Val Weston 46:31

Nobody wants to do some serology.

Eimear Brannigan 46:50

Right, so as those settle into final answers, it looks like we have just coming up to 60 participants. Do we have any comments on these findings before I move on to the live questions? Eamonn very briefly, maybe?

Eamonn Trainor 47:12

Thanks, Eimear. Just to say I mean, we've reviewed the evidence and it was clear that PCR offers the most sensitive specific tests really. The enzyme immunoassays may have a role in settings where PCR isn't as readily available. It's just worth noting that for some of these enzyme immunoassays, although the specificity is acceptable, the sensitivity isn't. So what that means is, although they're good rule-in tests in that you could say, 'well, if it's positive in your patient they likely have norovirus', if they are negative, they're not good rule-out tests. So you would need to follow up a negative enzyme immunoassay with a PCR result to confirm that.

Eimear Brannigan 47:59

Thank you, Eamonn. Okay, I might move straight on to the first of our live questions.

Val Weston 48:08


And here we go.

Eimear Brannigan 48:09

Drumroll, please. The first one, okay. During busy winter periods with Noro, COVID, flu and RSV at the same time, how do you decide who to prioritize for isolation of a limited number of side rooms?

Who would like to come in? On that question? Feels a little bit like perhaps a Val question. But anyone else is welcome to jump in. And we might get through three or four of these depending on how extensive your answers are folks.

Q&A



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K Katherine Watson
During busy winter periods with Noro, Covid, Flu and RSV at the same time, how do you decide who to prioritise for isolation in a limited no. of side rooms?

Anonymous 5

How many types of noro are there? Would you advise against cohorting noro cases if they're not from the same outbreak?


Anonymous 4

Should more investment be made in making rapid testing more available : quicker diagnostics and decision making?

Latest question

Anonymous 3

Is there evidence of the effectiveness of air purifiers (scrubbers) in reducing the transmission of Niro virus?



Val Weston 48:35

OK. It's a very difficult question. And I think it's the priorities that those particular times and what you have and what exactly, you know, sort of like what flu circulating? What are your COVID numbers? We all know that, you know, some and each of them will cause patients harm in some ways. And I think it's more... that's a clinical decision with a multidisciplinary team to actually make those calls at that particular time. And it might be that if you've got something with bays, you could cohort certain different one different viruses in different places. Or I think that is a decision to make as a multidisciplinary team as you go forward, and it really depends on what numbers you've got of each.

Eimear Brannigan 49:43

Thanks about so it's kind of a tricky one. We all face it each season. And don't make a decision alone, I think.

Val Weston 49:50

No, no, no. It depends on how many side rooms, what bays you got, and what pods you got or whatever. And I... I think it's a very... and you can't use... it's specific to the area where you will actually looking. That's it.

Eimear Brannigan 50:09

Thank you, we might move on to see if we can get through a few more before the end of the session. I saw a nice looking question there about how many different types of Noro are there. But it's been beaten into a second place by "Should there be more investment in making rapid testing more available for quicker diagnostics and decision making?". Who would like to come in on this one, please? Eamonn or Aggie...

Eamonn Trainor 50:32

Um, yeah, I can come in. Yeah. So that I mean that I guess this sounds like point of care testing really doesn't it? And I think, you know, reflecting on experiences from Coronavirus, I mean, you know, we saw a point of care testing and roll out more to acute settings with PCR platforms being available. We did, we did review some evidence around this, I'm sure Aggie would remember as well. Some studies looking at using point of care use of platforms for norovirus and in acute settings, but that was very small studies. And I think probably the point to make is, I think, yes, potentially, it is a good thing. It would allow for quicker turnaround time of tests, because you have, you're reducing your transport time to laboratory. And you can have healthcare staff as operators. But I guess the converse of that is, is just to note that it is really important that you have involvement of your laboratory services in the implementation of those kinds of points of care tests. And also that you have adequate training of... of healthcare staff. I mean, I think with PCR tests, as it can be very easy to get contamination of areas where the tests are placed. And, you know, that increases your chances of things like false positives, so I think yes, a good thing but I think needs to be followed carefully. Rather than, for example, just buying a machine and you know, you're gonna plug in and play I guess.

Eimear Brannigan 52:16

Thank you very much. Aggie, do you want to add anything? Not at the moment. Okay, great. We can just move on to the next question, if that's okay. So the usual answer to that is of course there's no good such thing as a good test at all depends on how you use it really doesn't it? Okay, there was a question there about how many different types of Noro so perhaps if we get to that somebody might address that. "How can we promote samples when care homes feel that they will get in trouble if they're positive for norovirus?" This feels a little bit like a culture question. Val, have you come off mute specifically to volunteer for this question or does anyone else want to jump in?

Val Weston 52:53

No, no, no. That was that, I didn't take myself off. So, it's my fault, isn't it? I think we, we really have to get off the blame culture. Norovirus isn't something that you could turn around and go, you know, this is because, you know, it's not you're not doing what you should be doing. Norovirus is there. Norovir... anybody can get norovirus. And, and when it comes to care homes, I think I would want to know, if I have a norovirus outbreak. And so what I would say is people, people need to be feel free that they should be sending in noro, they should be sending in samples, because actually, it might, it might influence what the management is going forward in those areas. So, I would say feel free to put more people specimens in and we need to get over this blame culture because actually, it's nothing to do with blame. It's to do with norovirus.

Eimear Brannigan

Thanks very much, Val.

Val Weston

I'll come off mute... I'll get back on mute now.

Eimear Brannigan 54:14

Otherwise, you're... Apologies, I didn't mean to...

Val Weston

No, no... it's fine.

Eimear Brannigan

Okay. Let's have a look at some more questions. We go for a couple more and then we can wrap up. So and there is that question. So how many types of norovirus are there? Would you advise against cohorting noro cases if they're not from the same outbreak? Aggie, would you like to take this one? Eamonn?

Aggie Bak 54:37

I can take first part, I think. And I think second part is probably for Val as well. The studies that I looked at suggested there are at least seven or eight types, but they also have different strains. So there are about 50 strains that have been, recognized up to now which is quite a lot and I'm assuming that 50 strains and I am assuming that we have immunity to one but not the other one. But I'm not sure about this, maybe Eamonn knows a bit more. But as for cohorting, that's probably a question for Val again.

Eimear Brannigan 55:22

Val or Eamonn. Do you want to comment on that?

Val Weston 55:27

Eamonn, do you want to take the first bit or...?

Eamonn Trainor 55:29

Yeah, I'm happy to explain.

Val Weston 55:34

OK and I'll carry on after that.

Eamonn Trainor 55:37

Yeah, so I mean, Norovirus is classified, according to genogroup, and then genotype. So, genogroup two genotype four you'll see in the literature the letters GII4, is the... it's the strain that is responsible for the majority of outbreaks in healthcare settings. So, diagnostic laboratories, when we undertake norovirus testing, will tend to look for genogroup one and genogroup two, and you can't differentiate any more than that. And in terms of cohorting, I can't say that it's been an issue that I faced or a one that I'm familiar from the literature. Umm... As I said, most... the vast majority of outbreaks are this GII4, umm... strain or variant. Umm.. and umm..., yeah, obviously, it's the same variant that we are dealing with. There shouldn't be concern if you're cohorting patients with that particular isolate.

Eimear Brannigan 56:39

Thanks Eamonn. And Val, do you want to add anything?

Val Weston 56:42

I think from my point of view... it's actually... we talked about suspected norovirus outbreaks. And before you even get the results back, so as an infection control nurse, I'd be looking at if I could add cohort at that particular time. And as Eamonn alluded to, even after the fact that the results come back, the majority of them are the same genotype. So actually, it shouldn't make as much difference.

It's slightly different with flu. And I think that's probably where this question's come from. But I think from a norovirus outbreak, if you're suspecting it, you need to do something about it straightaway.

Eimear Brannigan 57:25

Thank you very much. Now I'm just looking at the time and think... I think it's probably best that we wrap up now, because we're due to finish at six. So let me just... thank everyone in the panel for participating and for your knowledgeable and expert contributions and for bringing in your experiences of developing the guidelines and to our audience. Thank you to our audience for attending and for participating both in the polls and submitting such great questions both before and during the session. I have a couple of bits to tell you which are that the feedback survey link is going to be on the screen in a moment. And I think it's going to be added to the chat box as well. And we encourage you to complete the feedback survey for us because we'd love to learn what we did well today and what we could do better for future sessions that that we will be hosting. Certificates of attendance will be sent out after the event and you will have a certificate that reveals accreditation with one CPD point. The event has been recorded today and the transcript will be available after the event and previous webinars, and in due course this one, will be available on the Healthcare Infection Society website, HIS website. So, thank you all again, and in particular to our panellists. Val Weston, Eamonn Trainor and Aggie Bak. And thank you to HIS for hosting.