How to Prevent, Identify and Track Infections

Learning and Action Network Event

May 28, 2019

Good afternoon. Welcome to today's presentation, *How to Prevent, Identify, and Track Infections*.

Today's audio lines are muted to protect sound quality. If you have a question, I would like to share something, please use the question area of the go to webinar control panel.

Thank you for being with us today. Before we start the program, on behalf of atom Alliance nursing home team, we would like to acknowledge a cohort of nursing homes who participated in the QIN-QIO, CMS, CDC, Resident and Safety Initiative to report C. Difficile infections in nursing homes by enrolling in the CDC's National Healthcare Safety Network, or NHSN. One of the CMS goals of this project was to increase the number of long-term care providers reporting in NHSN across the nation. At the start of the project approximately 200 nursing homes were reporting in NHSN. As we concluded the project in December of 2019, there are now over 3000 nursing homes enrolled in NHSN across the nation. atom Alliance continues to work with our cohort to track infections and utilize NHSN to identify opportunities and monitor progress towards stopping infections. I now want to introduce to you Travis Redford, who is their project analyst for this initiative. Travis works for Alabama Quality Assurance Foundation and he is part of our QIN-QIO. Travis I will let you share with the audience the great work that our cohort has done.

I've put together some data for the amount of nursing homes that were submitting NHSN data. This was specifically C. Difficile data. As you can see, the red line is the goal submission that the QIN-QIO had to meet to exceed our goals. And this is the first example of Alabama's data, but we will go through all five states. The nursing homes were able to exceed this data and help us to meet our goals. Also, this data went to helping to form a baseline for C. Difficile reporting in the future. They were able to some of the first data and have some of that data to really make it generalizable to their own nursing home and to other nursing homes throughout the regions. We have included a green line which is timely submissions. That is submission within 30 days of the conclusion of a month. If anything is like the hospital data, in the future nursing homes will have to submit their data timely. As you can see over time, the green line is also meeting the goal submission showing there was a habit formed, and that timely submissions became a little bit easier because being more familiar with NHSN, and also making a habit of recording data leading towards preventing those infections in the future.

If we can continue to the next slide, we can see Indiana's data. It's the same trend of the green line meeting the goal submission showing it became more of a habit over time. We will see that same transfer on the next three slides. We will go to the next one for Kentucky. We will go to the next one for Mississippi. They had the same trend. Finally, for Tennessee. We want to say thank you for this great submission. Also, hopefully this will be beneficial in the future for all of the nursing homes and other nursing homes that are like them. The baseline will be more relevant to their data. I feel like that was a good contribution toward the goal.

We will go to the next slide. I want to introduce our main speaker, today. Her name is Angela Craig. And she is an experienced ICU clinical nurse specialist at Cookeville Regional Medical Center in Tennessee, where she leads the hospital Sepsis Prevention Program.

Hello, everyone. It is great to be on the conference call with you. We will talk a lot about our initiatives regarding C. dif. I have a few disclosures, but I want to tell you even though I consult with a variety of groups, I want you to know that I am speaking based on best practice, and no one tells me what to say, except for the evidence. The evidence speaks.

We will get started and talk today about the definition for C. dif. I hope it's okay if I don't have to say Clostridium difficile all day. I will probably say C. dif, or I'll say CDI for Clostridium difficile infection. We will talk about risk factors for C. dif and we're also going to talk about gaps in current practice. I hope you guys have pen and paper handy. You will want to take notes. You have the ability to print out the slide deck. There will be specific gap analysis that we will go through today step-by-step. I want you to jot down areas where you feel like you could make a better difference at your institution. We will also discuss ways to correct those gaps and really have accountability for best practice. I know on the line today we have both hospitals, and we have nursing homes and extended care facilities. It's great to have both. We are both working on this initiative. Our first polling question, we want everyone to be involved here. What best describes your facility? Are you an acute care hospital, a LTACH, a nursing home, or other? And if you are an "other", you can just type in your little chat box what describes your facility.

Polls are open. Please remember to hit the submit button and fill in the dot, and we will bring up results shortly.

The poll is closed. It looks like about 67 percent are from nursing homes. 26 percent from acute care hospitals, 2 percent from LTACH and 5 percent from other.

Thank you. I did not see those results. I appreciate you giving me the answer. The next question is, do you know your institution's C. dif rate? Yes or no?

Please hit submit when you are through.

Angela, it looks like we had 71 percent say yes and 29 percent said no.

Excellent, so the reason we are asking that question in regard to your C. dif rates, if you don't know what those rates are it will be really hard to know where we need to start. And so, I am definitely very proactive in wanting percentages of infections within my institution, within my ICU. If there is a way you can get that information, I think it is just better and if your staff can see changes over time based on the projects you're working on toward best practice. Let's start first of all with some statistics with C. dif. It is estimated it causes about half-million illnesses in the U.S. every year. And one in five patients who get C. dif will get it again. If you are one of those people who ever have it, it's something you would not want to have. Within a month of diagnosis, one in 11 people over the age of 65 died of a health care associated C. dif infection. So, age is definitely one of those things we want to look at and we are going to talk about some of the risk factors as we move forward.

Now, a Clostridium difficile infection, which often times you'll see that as CDI. It is definitely costly. You can see that the attributable cost per patient is around anywhere from $6,000 or so to around $11,000. It's associated with longer length of stays, about a 3-day increase, and definitely has had some association with readmissions. It does reoccur in 15 to 35 percent of patients with one previous event. Thirty-three to 65 percent in patients with greater than two episodes of CDI. As you can imagine, the cost is quite high. Continuing on with the costliness, publicly reported costs related to CDI are estimated at $4.8 billion for acute care facilities alone. And rates are linked to the hospital acquired condition and value-based purchasing programs. This can definitely be a challenge for all of us, no matter what institution we are currently working in.

You can also see the economic burden of just healthcare acquired infections. Whenever you see the HAIs, that's what they are talking about. So, whether it's your CLABSI's, your VAP's, your VAE's, your CAUTI's, C. dif, you can see right there that the economic burden is quite high.

And the other thing I want to mention is that 50 percent of HAIs are preventable. I will say that again, 50 percent are preventable. That is where we come into play. What can we do to really prevent these health care acquired infections?

Let's talk about what C. dif is so we can know better how to treat it.

So, Clostridium difficile is also called C. dif. It's a bacterium, and it causes diarrhea and colitis. So that inflammatory response of the colon. It is an anaerobic, spore forming bacteria. It is spread through fecal/oral transmission. It also colonizes in the large intestine. It releases two toxins that can cause a number of illnesses, including diarrhea, colitis and sepsis. Remembering that colonized patients do not always present symptoms. We may have a fair amount of patients who were colonized that do not have symptoms.

NHSN has definitions, and kudos to many of you who had great data and are utilizing the NHSN database system. There are some real benefits to that. You are able to easily and quickly place the information into the database. What's great is being able to network and benchmark against facilities of likeness. You can see that the healthcare facility onset greater than three days after

admission. The community onset is inpatient less than or equal to three days after admission. Community onset healthcare facility associated patient discharges from a healthcare facility less than four weeks prior. There are different definitions based on where the patient is at or whenever they start to have symptoms.

When you think about your standardized infection ratio, your SIR, that is what you would expect to have in your institution. That would be your SIR ratio. Our goal is always going to be less than one. Am I seeing there is a little discrepancy in the slide deck?

Go ahead Angela, it was in a link we posted in chat.

Some risk factors for C. dif. It is commonly found in the environment. Most cases of C. dif occur while you are taking antibiotics or not long after you finish taking antibiotics. People who are on antibiotics longer amounts of time, longer periods of time, for instance 7 to 10 times more likely to get C. dif while on the drugs and during the month after. Now, what's happening is when you are on antibiotics it affects that microbiome. It wipes out the bad germs and also affects the good germs that protect your body against the infection. The effect of antibiotics can last some time, even up to several months. If you come in contact with C. dif germs during this time you can get sick. So, you can imagine, this is a lot of our patients.

Risk factors, continued age. We talked about this earlier. More than 80 percent of C. dif deaths happen among those 65 years and older. Complicated medical care and extended stays in healthcare settings, especially hospitals and nursing homes are definitely high risk. Certain antibiotics, such as fluroquinolones. There are different types that may be more susceptible to C. dif. If the patient has a weakened immune system, or like we've mentioned before previous infection with C. dif or known exposure to those germs can definitely be risk factors.

Complications related to C. dif. Most commonly would be, patients get dehydrated. The inflammatory response of the colon such as colitis can be problematic if anyone has ever had colitis. I would be in the crowd there. And even a healthy person with colitis can have hospitalization and it can be very challenging. Severe diarrhea, so as you can imagine, with severe diarrhea comes a lot of electrolyte disturbances. There are definitely a lot of complications to C. dif.

As well as serious intestinal conditions, patients can become septic and there can be death related to C. dif as well. We are not dealing, this is serious, and it can be very challenging. When we talk about prevention strategies, there are three main topics we will hit on today. We have a lot to talk about in regard to those. So antimicrobial stewardship, really focusing on antimicrobial use and determine appropriateness. Hopefully, most of you have the ability to know how long the patient has been on and how appropriate that antibiotic is. We want to try to limit antimicrobial use, but we still want to care for our septic patients in a timely matter. It's not saying don't use them but limit them to the appropriate people. And then, we are going talk about rapid identification and diagnosis. We will go through some decision trees with diarrhea and hopefully rule out CDI in

patients with diarrhea. We will talk through some of those algorithms. Anything I share today I am happy to send you the forms and documents if there's anything you would like to have that you see. I'm a sharer, many people have shared with me throughout my life and I am so grateful. There's no reason to reinvent the wheel. If you would reach out if there's anything you need more than this slide deck. We will talk about prevention of transmission. We want to talk about establishing guidelines for using contact precautions as well as a hand hygiene focus and then environmental controls.

Let's start with the overall, general C. dif gap analysis. The first section is on knowledge and competency and early identification. The first question I have for you is, do direct care personnel identify and communicate new or worsening diarrhea? That definitely needs to happen. That's the first sign that we have a problem. Also, do nursing personnel obtain a stool specimen for C. dif testing only when a resident is having watery diarrhea? The next question is, do nursing personnel know the appropriate way to collect and submit a stool sample for C. Difficile testing? And, do medical personal know the C. Difficile testing? So, toxin versus molecular PCR that is being performed by the laboratory. There are differences in the way you test. Our hospital has recently changed to where it's more specific for the live version versus just the patient who has been colonized. Do healthcare personnel know what precautions are used to prevent the spread of C. Difficile? We will talk through some of those, but we know those patients need to be in isolation, correct? We need to have the ability to automatically do that. Even before we know for sure they have C. dif. Do nursing personnel know how to implement contact precautions for residents known or suspected of having CDI? Do residents with CDI and their family members receive education about the use of handwashing and contact precautions to prevent transmission of CDI? So, it is important that families and patients know. I will give you some samples. A little further toward the end we're going to talk about education. And, I will give you a sample on education you can copy and use in your institutions. Some of these gap analyses may specifically say something in regard to a nursing home or it may say residents, where normally in a hospital we call them patients. Just know this can be utilized for both hospitals and nursing homes. I did not want anyone to feel left out.

Another question, is there a protocol for notifying medical personnel when a resident develops new or worsening diarrhea? Does your nursing home or hospital have a policy that allows nursing personnel to collect and order a stool for C. Difficile testing? Is there a protocol for notifying medical personnel of the results of a C. Difficile testing? Do you have rapid containment? That is one of the goals. Does your nursing home or hospital have a policy that allows nursing personnel to implement contact precautions when a resident develops new or worsening diarrhea? Is there a visual tool or any kind of sign that is used to communicate to healthcare personnel and visitors when contact precautions are in use for a resident with known or suspected CDI? This can be challenging. We want everyone to have the privacy they need. At our institution we have contact precaution and isolation signs. What we have that is different for our C. dif patients is there is a section that is brown. How fitting is that? I thought that was cute.

I'm telling you I noticed that. It looks different, but it is the same information. We are all trained that anyone who has brown on that sign we know that is a C. dif patient. That tells everyone who goes in that room, that is different. That is one suggestion for you.

Are there adequate supplies of gowns and gloves immediately available in all resident care areas? Whether it is hospital or nursing homes? Does our place of employment dedicate resident equipment when contact precautions for CDI are in use? Does your nursing home or hospital have a policy or procedure to provide separate toilets for residents with CDI who are sharing a room with residents without CDI? Those are just the things you need to think about. I hope you've taken notes for areas of opportunities. That is the overall gap analysis.

We will talk about some of these decision trees I mentioned earlier. Here is one. You have the contact information on the bottom of the slide. This is the HRET-HINN.org. The information is there. I think it is excellent. Basically, it says diarrhea, is it than greater or equal to three loose stools in less than or equal to 24 hours and there is a concern for infectious diarrhea? If the answer is no, then we're not going to test and we're not going to isolate. If the answer is yes, we, the doctor or the RN, will order or initiate contact isolation. And this one specifically is a green C2 sign for two times a day cleaning, instead of the one time a day cleaning. Then it says, has the patient received laxatives in the previous 48 hours? If that answer is yes, is the diarrhea likely due to a laxative? If the answer is yes, you move down the other arm. Discontinue the laxatives and observe for 24 hours. If there is a strong clinical suspicion of C. dif you would send that to the lab. If diarrhea persists, if that answer is no, then you will discontinue contact isolation and you will remove that sign. Then if you move to the yes side, it tells you specifically, send one stool for C. Difficile, do not send C. dif tests for if it's less than 12 months old, or negative C. dif tests within seven days or a known positive case. We will not test for cure. You can see if they have a positive result, diarrhea absent and you can read. The reason I am reading that specific is it literally lines out verbatim what you do, and how you clean the room and how to take care of this patient. I believe a good diarrhea decision tree is excellent practice. I will show you my diarrhea decision tree for my hospital. The diarrhea decision tree has a spot where we have a place for the date of last bowel movement. Notice it specifies out, stool output greater than 3 mushy/watery BM.

I will show you a Bristol stool chart it's a type six or seven on the Bristol stool chart. We have actually gone to a chart to where we all are specifically saying the same type of stool, so we are consistent. I will switch to that and go back. This is what's called the Bristol stool chart. Why is this specified like food I don't know. It talks about sausage shaped and separate hard lumps like nuts. You can see the different types. As you think about this, hopefully you realize it is good to know that you are calling the same thing the same thing. We are talking about mushy stool, type VI or type VII, watery, no solid pieces, entirely liquid. So, those are the focuses we are having regarding the C. dif sendoff. I want to tell you we usually say if the stick stands, we don't, which sounds kind of gross. Literally if you are able to put one of those tongue depressors as we are getting the stool and if the tongue depressor can stand up because of the stool then that is not a

patient who has a type VI or type VII stool. We did add that. We have this chart where we refer to it. Basically, it goes to the list of items that could be causing diarrhea. Like it's very similar to the one I showed you. Is the patient receiving cathartic agents? If they are, then let's stop those. The other thing we need to think about is impaction. Do they have chronic constipation? Maybe, now they have a risk for stool impaction so all that is coming around is via outside of the impaction. Thinking about everything. Not just sending C. dif for everything, down to the lab. I will tell you we have changed immensely at our hospital. We used to send diarrhea like crazy down to the lab. We realized we were over testing.

We really have gone to this management of diarrhea plan. Now we have also put it, this is our electronic bowel management tab. We have the ability to put patients on a bowel management protocol. If patients have not had a stool, we can start them on medication, laxatives or Pro kinetics. With that being said, that may be the reason they may be getting diarrhea. We have a specific thing spelled out. This is what we have in our computerized system. The nurses are expected to document this every day, every shift. I'm not going to read all of those to you, but they are there in case you want to put it in your record. We have already discussed the Bristol stool chart.

Let's talk about antibiotic stewardship and go through gap analysis. Let's do a polling question first. Does your facility have a point person responsible for antibiotic stewardship outcomes? Yes or no or unknown, and if you could, type in the chat box, who is the identified leader role at the facility. It might be a pharmacist or physician? We would like to hear from you.

It looks like 95 percent said yes and five percent said unknown. I'm going to read out some of the different responses.

It looks like we have RNs, pharmacists, nurses, director of nursing, assistant director of nursing, infection preventionists.

Excellent.

Those are consistent across the board.

It does look like we have all made this a very important part of the workflow. It's great to hear that 95 percent have someone responsible.

Let's do a quick gap analysis for antibiotic stewardship. The first question, do direct care personnel understand how to recognize changes in a resident that might indicate a new infection or other concerning condition? Do direct care personnel understand how to communicate information to the medical personnel when a resident has a change that might indicate a new infection or other concerning condition? Does personnel receive any periodic training or education about appropriate antibiotic use? Are medical personnel given any resources to help guide decisions about when to suspect a resident has an infection or needs an antibiotic. And do

residents and family receive education about appropriate antibiotic use? I will tell you the area is near and dear to my heart. If you listen on any previous webinars that I have done, sepsis is an area of extreme importance. I firmly believe whether it's a hospital or nursing home, everyone should screen for sepsis. That would cover that whole knowledge and competency section at the top there. If anyone wants to reach out to me, you are welcome to. I can share the information I have regarding instituting evaluations or screening for sepsis at your institution.

The good thing about screening for sepsis is it helps guide you with next steps and guides as well with antibiotic use. The next section, if this is our infection prevention policies and infrastructure? Do direct care personal document changes in a resident that may indicate a new infection or other concerning conditions? Do nursing personal communicate information to medical personnel when a resident has a change that may indicate a new infection or other concerning conditions? Does your nursing home or hospital have a pharmacist or physician that provides guidance or expertise on antibiotic use? I will tell you at our institution as we go through rounds, I would recommend this when you go through patient scenarios together as a group, looking at those antibiotics and saying, is this the best antibiotic we could be on? I frequently ask, are we on good coverage for the organism that's growing? There are times when a patient may be on a totally inappropriate antibiotic, so that's where coming together and focusing on this is important. Also, does your nursing home or hospital use standardized order forms for antibiotic prescriptions including documentation of indication or anticipated duration of therapy? There are times when we will go through in hospital rounds and we will find a patient has been on antibiotics for 12 days and do they really need to be on that for that continued amount of time. The other thing we need to do is monitoring our practices. Does the pharmacy service provide a monthly report of antibiotic use, like new orders, number of days of antibiotic treatment for the nursing home or hospital? And, does our hospital or nursing home have a process to perform a follow-up assessment three days after a new antibiotic is started to determine whether the antibiotic is still indicated and appropriate? De-escalation is an important part of antibiotic use. Does your nursing home or hospital provide feedback on antibiotic prescribing practices to medical personnel? Does the lab provide the nursing home or hospital with the report of antibiotic resistance in bacteria identified from cultures sent from your nursing home? So, antibiograms are extremely important, especially when you think about order sets that have specific antibiotics that we always use. Looking at your institution everybody's antibiogram is different. That may help guide you on what antibiotics to go with.

Let's talk about appropriate room cleaning and handwashing. This probably seems so basic to you but it's so important when it comes to the prevention of C. dif.

Let's look at this. I have a lot of gap analysis, but what I want you to really think about is, you may say we tell people they need to wash their hands. But do you have a process in place that will hopefully be consistent and have everyone practicing in the same way? Does your facility have an annual hand hygiene program for all healthcare personnel? Notice it says all. We're not talking about nursing or nursing aides and CNA's. We are talking everyone in that hospital or

nursing home. Can healthcare personnel describe situations when handwashing with soap and water is preferred over the alcohol-based product? Does your place of employment assess healthcare personnel hand hygiene techniques? Do they do hand hygiene properly? Do residents and family members receive education about the importance of hand hygiene in the prevention of the spread of infection? The next section is, does your nursing home have a written hand hygiene policy? Does your nursing home or hospital assess the availability of hand hygiene products in all resident care areas? I know I recently did a whole stint of time in a nursing home, where I went in as a consultant to a nursing home. One of the things that was my suggestion was we needed more availability of hand hygiene products. I know they had to be up higher. I would have to walk backwards quite a few steps many times before I would go into a room if I was going to wash my hands before I went into that room. My practice in my hospital, right outside every one of the rooms we have the ability to do hand hygiene. So, it's part of my everyday practice. I jell in before I go in and then I jell out. With C. dif we need to do soap and water, good brisk friction is important.

Also, has your nursing home assessed personal satisfaction with hand hygiene products available in all resident care areas? If you have a product that's harsh on your skin and you find multiple employees are having that same issue, you may need to change to something else. Do we utilize cues to action? So, posters and pamphlets, we have posters that say you can ask me if I washed my hands. They may be full-body posters of our physician or some of our nurses saying we want you to ask us. We also have cards for the patients to fill out. Did your healthcare provider or nurse wash their hands when they came in your room? Did your housekeeper wash their hands before they came in? We asked for that feedback as well.

Does your nursing home or hospital monitor healthcare personnel adherence to hand hygiene? Do you have hand hygiene protocols? Does your nursing home have a process for providing feedback to healthcare personnel about hand hygiene performance? We were told that we were able to, we are trying to monitor this. Also, if someone is not appropriate, we have a hotline or number where we call the infection preventionist and let her know. Especially if it's a provider. She will follow up. I can monitor the nurses, or anyone can monitor the nurses. We want a safe place to call people out for not washing their hands. I am hoping we can get a codename that you can say where everyone knows it means wash your hands. You don't want to say that in front of patients and families. Even if you had a code word, I think that works. Why can't we do the basics, I wonder this all the time. Handwashing is the number one way of preventing infections. If we could get the basics down, we wouldn't be in the situation we are in today.

I love this quote I found as I prepared for this lecture. Your patients' lives are in your hands so wash them. It's so important. If you look at this, hand hygiene is at the center. You have the patient and hand hygiene. You think about catheter care, you think about skin care, bathing and mobility, you think about oral care and mobility. All of that can affect our infection rate. Hand hygiene and this is hands down the number one way to prevent infections.

It's important to remember C Difficile in the environment, survival of spores can live up to five months. Five months, so let's think about how we can really stop the transmission. If you think about a C. dif patient or there is an environmental reservoir where have C. dif. You have animate surfaces and you think a lot of it is the healthcare workers hands. We can interrupt that with hand washing and glove use. There's a way we can break that here. You can see successful hosts whether it's colonization or infection that is our patient. Notice over here inanimate surfaces, environmental surfaces and medical equipment. We can interrupt that via cleaning and disinfection. It's so important that we break that here and here with some of those basic tasks that are so important. If you look here, you can see all of these x's where it is a high-risk patient room. Those high-risk areas where C. dif can be living. The spores can live up to five months.

Let's ask another polling question. Does your facility systematically audit environmental cleaning of rooms? Yes or no. If you want to type into the chat frequency, I'm sorry type into the chat, the frequency of the audit. We'd love to hear that too.

Looks like 76 percent said yes and 24 percent said no. I'm not seeing any other responses.

That's awesome. That is excellent and for those of you who don't have a process in place. There are a lot of different techniques on ways you can systematically audit your environment and cleaning of rooms.

We have the audit of all C. Difficile rooms on discharge.

That's awesome. So, they do another audit to make sure it's safer, that's great, excellent.

Regarding education, you want to make it as fun as you can. This is kind of a gross topic, but make it fun and catchy. When we rolled out the education for bowel management, it did not come through. I had a stool emoji. That's what we use. I wanted to show you that. You have the ability to add different emojis to things to make it fun and catchy.

Here is from the CDC, this is a reference sheet. Remember there is no need to reinvent the wheel. I got this from the C. dif, excuse me, from the CDC website. It's very specific information, frequently asked questions about C. dif. This was page 1. There's another page that goes with this as well. You can literally put it front to back and utilize that. Let's not reinvent the wheel.

I want to share that it is so important that facilities work together to protect patients. Our common approach which we say is not enough is that those patients can be transferred back and forth from facility for treatment without all the communication and necessary infection control actions in place. If you look at this picture, I really like how your hospital notifies and alerts the nursing home, who alerts the public health department, who will alert long-term acute care facilities and making sure we are all communicating. When you think about independent efforts that is still not enough. Some facilities work independently to enhance infection control, but they

are not often alerted to antibiotic resistance or C. dif germs coming from another facility or outbreaks in the area. I think sometimes people are nervous if we are honest, that maybe a nursing home will not take a patient. We don't have any room for that. Everyone has to be open and have to communicate clearly. This lack of shared information from other facilities means that necessary infection control actions are not always taken. Germs are spread to other patients which is not fair. The goal is the coordinated approach, where public health departments track and alert healthcare facilities to antibiotic resistance or C Difficile germs coming from other facilities and outbreaks in the area. Facilities and public health authority share information and implement shared infection-controlled actions to stop the spread of germs from facility to facility. We need to be thinking more about, how can we protect the patient? How do we protect other patients? Just be honest and open about our approaches.

We must work together to save lives. If you think about this, more patients get infections when facilities do not work together. This came from the CDC vital sign. This was five years after CRE entered 10 facilities in an area of sharing patients. You can see the common approaches which is status quo, and 2000 patients would get CRE. You can see here, independent efforts about 1500 patients would get it. When we had a coordinated approach, only 400 patients would get the CRE. That impacts only two percent of patients whereas in the common approach it was about 12 percent of the patients.

I know we've talked a lot about ways that we can prevent C. dif. I want to open this up. We have a few minutes where we can talk about any questions you might have. We also have Vicki Read, who is with NHSN on the line, who can help if you have questions about that. We want this to be helpful for you. If you want to type in your chat box any questions you may have, or Eric, you may want to speak up if there were any questions you have had.

Just to remind everyone. If you would like to speak with Angela and have your line taken off mute, hit the little hand button in the gotowebinar control panel next to your name. That will raise your hand. You may also type any questions that we can share with the group or you may just respond privately.

I hope you guys have seen all the references and resources. All kinds of references and resources for you. Thank you everyone doing that behind the scenes.

This is Eric. Can you hear me?

While people are thinking about questions, I thought I would share this information especially related to the gap analysis. I thought I would share some examples without naming any names and keeping everyone innocent. Across Tennessee, that I have assisted with, there were a couple of themes that came up when we did the gap analysis related to CDI prevention. One of them you alluded to, often when we would ask senior leadership about appropriate testing. It was Often confirmed that only stools that took the shape of the container as appropriate would be sent. However, once we spoke directly with the lab, we did encounter situations where there was

an order being overwritten to test on formed stool. That might be an idea to go directly to the lab. As you look at doing some analysis and look for opportunities for improvement to ask them directly, hey are you performing any testing on formed stool? Another item was related to environmental cleaning. That was it was not always a clear-cut answer for dedicated equipment for patients who were on isolation. The understanding of what equipment was dedicated, what equipment was disposable was not always clear. In some facilities, we would find discrepancies in the answers. Then also a caveat that we didn't anticipate is what would happen if a piece of equipment needed to go to bioengineering, or to be looked at if there was a break that had C. dif. Looking at the process to make sure it was cleaned appropriately in that correcting of that piece of equipment. Just a couple pieces of food for thought as people think through items that might be of benefit for them to look at analysis in their own facility.

Eric, If I can ask you a question? Do you have a recommendation for housekeeping? I know Travis had that question. I was asking about what type of audit and how often. We do have specific testing. Our housekeeping department does that and reports that to our infection prevention meetings. What do you suggest? How often?

That's a great question. That was an area we found a wide variety of responses to. Vicki, feel free to speak up, as well, from the Tennessee Department of Health. There were a couple different methods that were used. The glow germ was used in some facilities where they would secretly go in and on items that were high touched surface areas place glow germ on it and let the team clean the room as normal and go back in and it was a learning opportunity if there were spots that were missed in that process. There were other facilities that just did a direct observation of environmental cleaning. And then, perhaps more expensive route that some facilities had chosen to take is ATP Bio luminesce, which is a little more quantitative measure. If you are looking at this to see if high touch surfaces had been cleaned. But regardless of the method that the facility had, as long as there is a method in place, I think it's what's most important. Because some of the facilities we looked at it wasn't consistently being done. There was not a method were we consistently performing an audit of environmental cleaning.

I will say as far as getting a response back from the staff and getting by-in from the staff, often the visual encounter of the glow germ which is pretty inexpensive was often very effective. So, the staff can visually see it is very easy to miss a spot as you go through a room.

Absolutely. I know one of the things where we talk about rooms. If we have a patient who has been C. dif and let's say they no longer have diarrhea and let's say it's been the appropriate time period. It's not like we can do an easy clean. The patient would have to be moved to a clean room and we would do a terminal clean. Then they would be moved back, and we would clean the other room. This is a challenge. Sometimes we would keep the patient in isolation longer than they would want to be. We can't always facilitate that many rooms being tied up at one time. I don't know if Vicki had anything, she wanted to mention regarding that, feel free if you do.

One thing we did find on some of our assessments was that, as you said, the rooms were a problem with having them down for that length of time. We wanted to make sure that they used an EPA registered cleaning, so we found in some of our assessments they were not using an EPA register. That is one thing that we want to make sure they do.

Excellent. That came up in Travis as well.

How about curtain cleaning? Someone said they had a patient recently discharged, this is Kara, and the privacy curtains had to be sent off to laundry as well.

I know we do that in the terminal clean where our curtains are totally changed out.

This is Eric again. I know some facilities found that it ended up being cheaper for them to use disposable curtains. That is somewhat facility dependent.

Good feedback.

Any other questions? I know for us we have changed to a different type of testing so now it's much more specific. On more of the live, active C. dif so hopefully we're not capturing a lot of things that may be really are not true C. dif, not colonized. It has been very helpful at our institution. I will say we have had really good rates for sepsis mortality. We did, we have been working on C. dif as well. I don't know if it's quick that we use antibiotics but there are opportunities, but the testing has helped us. We think we were over testing. I think that's something to think about. If it is a solid stool, we should not be testing that for C. dif. Do you agree?

Absolutely. A lot of patients that were diagnosed with clinical definition C. dif will continue to be colonized for quite a while. It's most important to look at clinical symptoms that occur with that patient.

Absolutely. Thank you.

This is Travis. We have one more question. I'm not sure if we touched on it but that was does anyone use the probiotic protocol?

Feel free. We currently at my institution do not have it. I am intrigued by this thought. It's not like I haven't had a nurse saying why don't we do this. I know I would like to know if you do. Any nursing home or hospital out there have that?

I'm sorry about that to whoever asked it. As far as a protocol, you may want to talk with your pharmacist to see if they have suggestions or how they feel if this would be beneficial.

Travis do you see any other questions out there?

We had a response about the probiotic. It says we order a probiotic once a day for as long as they are on antibiotic at a behavioral hospital that I work at.

Other than that, that is all the questions that I see.

There was one more response. It says it depends on the physician.

Some physicians have strong opinions about that.

Eric or Vicki? Anyone else? Any other comments or questions?

This is Vicki. I noticed that they talked about with NHSN, there is a protocol on NHSN to track your hand hygiene and glove use. If there's anyone out there that would like to talk to me about that, feel free to email me, vicky.read@tn.gov. I will be happy to talk with anyone about it.

Very helpful. There are tools out there. We have a hand hygiene program where we have people submit the information to our infection preventionist. People don't know who these people are. They have a list of criteria and they watch people as they walk in the room and walk out. Do they clean their hands while they are in the room? Really good stuff.

We have reached the top of the hour.

Awesome.

I will conclude by saying thank you so much for speaking today. Thank you to you and our panelists and audience. Please join us on your favorite social media venue. We will post links in a second. We look forward to seeing you at the second part of this series on June 25th. We will be the same time and the same place.

Thank you, everyone. If anyone has continued questions, I think they posted my email address. If there's anything I can do. This is Angela. On behalf of everyone here, I hope you have a great rest of your day. We appreciate your joining in.