

CDC *Vital Signs* Town Hall Teleconference

Stopping Carbapenem-resistant Enterobacteriaceae Infections:  
Making Health Care Safer  
Q&A

March 12, 2013  
3:30–4:30 pm EDT

Judith Monroe: This is Judy Monroe again. So let me thank all of the presenters. These were excellent presentations. We want to open up the lines now for questions and I'd like to remind everyone that you can get in the queue to ask questions by pressing star 1. You'll need to record your name when prompted and then you will be announced into the conference by the operator when it's your turn to ask your question.

So I do encourage all of you to take advantage of this opportunity to share your own strategies, lessons learned, challenges, success stories, and ask our experts on the line your questions.

Operator, do we have any questions at this point?

Coordinator: Yes, ma'am. We do. The first question is coming from David Birnbaum. Your line is open.

David Birnbaum: Thank you. And thank you for some very informative presentations. So in Washington state, we have created a reporting network. We have created a partnership with a research laboratory so that we can do very sophisticated investigation into gene and foreign modifications and get a better idea of what we're dealing with.

If anybody's interested in the details of that, it's going to be reported in the poster at the CSTE (Council of State and Territorial Epidemiologists) conference 1783 in the ID section the afternoon of June the 10th.

My question is can anybody help us in terms of the potential impact of this sequester since this takes money to maintain? Before we do more, I just want to be sure we can sustain what we've already done rather than risk losing it.

Alexander Kallen: Hi, this is Alex Kallen. I'm the only CDC person in this room here. I certainly have no idea how that's going to affect any outside funding. I'm not sure if anyone else on the call can.

Judith Monroe: Okay. Next question.

Coordinator: Yes, ma'am. The next question comes from Greg Carter. Your line is open.

Greg Carter: Yes, as an infectious control preventionist, one of the things that we'll have to deal with CRE (carbapenem-resistant Enterobacteriaceae) and the question we get asked all the time is from an environmental people, what are we cleaning with? How do we handle the linen? Is it the same way we do with CRE, MRSA (methicillin-resistant Staphylococcus aureus), other MDROs (multi-drug resistant organisms)?

Alexander Kallen: Hi, this is Alex Kallen. And so your question is about environmental transmission of CRE?

Greg Carter: Correct.

Alexander Kallen: Yes. So I'll weigh in and then Zints or Wendy, if you want to jump in. I think - so the transmission of CRE, the environment is, I think, relatively

controversial. We've worked with some partners that have, you know, looked pretty extensively for CRE and the environment and not found it very commonly although certainly I can say from our experience here in outbreak, et cetera, we have anecdotal experience where we have been suspicious of, you know, transmission from environmental sources.

However, I think the good news is that, you know, routine - this isn't like C. diff (Clostridium difficile) or other kind of things where you have to use bleach or any kind of special cleaning products, I think that, you know, quats and other kind of routine agents for cleaning are fine. The key, I think, is trying - you know, this is a bug that lives in people's GI tract so trying to think of where stool will go. If you have a patient who's in the bed, you know, it's mostly going to be in and around the patient on the bed rails, mattress, et cetera.

So, you know, concentrating cleaning in those areas is probably the most important for preventing for transmission but again any kind of cleaning agent would be fine - you know, EPA-approved cleaning agent will be fine. I don't know Wendy or Zints want to say anything.

Zintars Beldavs: I'll go with Alex's suggestion.

Wendy Bamberg: We've gotten this question in Colorado for a variety of different situations and yes, we don't recommend anything different than it would for other organisms.

I think that the challenge comes in situations where it might be difficult to deal with MRSA or VRE (vancomycin-resistant Enterococcus). It's also difficult to deal with CRE things like patients going to Radiology suite or transfers or rehab hospitals or rehab situations. So those are definitely places

where it's more challenging to deal with but we don't recommend anything different at the state level.

Zintars Beldavs: I was going to mention that we also have Dr. Chris Pfeiffer on the line who's our medical director for this project so I just wanted to see if he has any input on this.

Chris Pfeiffer: Hi everyone, yes, I'm Chris Pfeiffer. I agree with what Dr. Kallen and Bamberg said.

Greg Carter: Okay. Part B to my question is let's say you get a case from a nursing home into the hospital setting, do we presume that any other resident of that nursing home, we should be doing surveillance stool cultures on as they are admitted to the institution or hospital?

Alexander Kallen: Yes. So I think, you know, I forget what you state you said that you were from but I think in general, if you're seeing patients being admitted from the same nursing home or coming into your facility or having positive cultures within the first couple of days, then that's probably something that I would imagine the health department would want to know about it.

And I will say we've been involved in a number of investigations that kind of, you know, proceeded exactly that way, you know, where we were notified by an acute care hospital about a bunch of patients coming from one particular or several long-term care take facilities and then, you know, subsequently investigating those places they found relatively high prevalence rate again not to pick on long-term care because I think, you know, they have a lot of challenges that we don't see in acute care and it can be a very challenging thing.

So I would say as far as your specific questions about screening people who come from that facility, you know, one of the things in the toolkit is to considering doing surveillance cultures on people coming from high-risk settings. So certainly if you identify either facility or, you know, regions of the country where people are coming commonly to your facility that are colonized with this people that develop clinical infections and that would certainly be an indication to consider doing surveillance cultures at admission for those organisms.

Again, you know, one case is always hard to know exactly what that means but certainly being aware and kind of keeping your eye out for additional ones would be a very reasonable approach.

Wendy or Zinta, did you want to add anything?

Wendy Bamberg: I guess the only thing that I would add so for Colorado's experience with the NDM (New Delhi metallo-beta-lactamase) outbreak; it was interesting because we issued a HAN (Health Alert Network) statewide because this is a tertiary care hospital that had this outbreak. We issued - we did issue a HAN statewide to let people know and let other facilities know if they were admitting a patient from this particular hospital during a specific period of time where we knew there were patients and when outbreak was ongoing, to go ahead and screen them at the admission - at their facility.

We did not get any reports that anybody detected positive and we didn't look at it systematically but certainly in the metro area hospitals which is where this outbreak occurred, we definitely did not hear about any positive coming from those screens and that doesn't necessarily say anything but it was an interesting piece of information.

Greg Carter: Thank you for your responses and for the teleconference, sir.

Coordinator: Thank you. The next question is from Teresa D'Angeli. Your line is open.

Meresa D'Angeli: Hi. Yes. Thank you very much. My name is actually Meresa D'Angeli and I'm from Washington and thank you very much for those nice presentations. Actually, I have two questions. One is - pertains to the HAN that was sent out by CDC about two weeks ago about additional actions that healthcare providers should take, and the recommendations for consideration of screening cultures on admission on people who had been admitted to a hospital outside of the United States raised a lot of consternation among hospitals in our state for knowing how to implement that.

And so, I was wondering if you could offer us some additional guidance on how to determine what regions of the world or the United States should be considered high risk so that we can have more of a similar approach to these cultures.

Alexander Kallen: Sure. Hi, Meresa. This is Alex.

Meresa D'Angeli: Hi.

Alexander Kallen: For those on the call Meresa is one of the most knowledgeable people about CRE prevention in the US so I appreciate your question or opportunity to address this.

So one - couple of things about the HAN for those you didn't see CDC release to HAN, I guess, close to a month ago now, that was highlighting these non-KPC (*Klebsiella pneumoniae carbapenemase*) carbapenemases that have been seen outside the United States and so Meresa is correct in what she says about

talking about considering pre-empted screening of patient - people hospitalized outside the US.

But I want to really want to highlight is the main focus - so the main focus of the HAN was to get people to think about doing mechanism screening for patients in that situation. So for people hospitalized within six months outside the United States, overnight do come in and that are hospitalized inside the United States recommending to - looking for these mechanisms - things like NDM, et cetera and I think, you know, Colorado is a perfect example of having that available being able to tell kind of, detect outbreaks.

So that was the main purpose of the HAN. The second thing is really a consideration and I wish that we could be very specific about which countries are - have problems with this that would warrant, you know, detection and screening. The problem, I think, that we have is that most countries in the United States or outside the United States don't have good enough epi or surveillance to be able to really get a good sense of how common these organisms are.

I think we all are aware of places where these have come from in the past and certainly those would be on the list but I know, you know, for those of you that border Canada, I think, it's also, you know, they have actually recorded too and the hospital outbreaks of NDM within the last, you know, four months or so in major journals.

So unfortunately, I can't be very specific about what countries, I think, you know, this is a consideration, I think, when people take histories, when they're admitted from - when physicians or healthcare personnel take histories of patients when they're admitted to hospitals, you know, if there are patients who are, I think, hospitalized outside the United States overnight within the

last six months, you know, then, it is definitely consideration to do surveillance cultures to look for these organisms.

Again, I think for people that border to Canada, et cetera, where they may be lots of people coming back and forth across the border or people who, you know, have a big business or people coming in from outside the country that can be challenging. I think for most places in the United States, it's a relatively easily implemented thing, you know, I would wager that most facilities in the United States don't see those kind of people very often.

I don't know if Wendy or Zints want to add anything?

Wendy Bamberg: No, nothing.

Alexander Kallen: Did you have a second question, Meresa?

Meresa D'Angeli: I did. Thank you very much. Yes, so I've probably asked this of you about ten times, but I just want to clarify. So when we're thinking about screening on admission on people who have - are coming from a facility where there have been CRE identified, we are focusing most on carbapenemase producers or any CRE?

Alexander Kallen: Right. So - I mean that's a good question and I don't know that we know the answer for sure. I think, you know, the things that argue that the carbapenemase producers are the most important at this point are the fact that, you know, these kind of non-carbapenemase-producing CRE, the Enterobacters - things like that - have been around for a really long time and we haven't really seen an explosion of these types of bacteria.

And when you look at the *Vital Signs*, the bacteria that were percent-resistant increased the most was *Klebsiella*, right? So that almost certainly has to be driven by this KPC-producing strain.

So I really think if you have, like you do in your state with your excellent system that you guys have established there, the capacity to understand what the mechanism is then concentrating on the carbapenemase producers, I think, is the smart way to go and the appropriate way to go.

Again - but for most states where that's not a possibility, I think, you know, that, you know, assuming a CRE is a carbapenemase producer is probably the most conservative thing to do especially if it's an *E. Coli* or a *Klebsiella*. When you get into the *Enterobacter*'s, it gets a little bit more tricky and there are certainly lots of states that have really focused just on, you know, *Klebsiella* and *Enterobacter*'s, so I think if you are a capable of understanding the mechanism and have a way to be able to know that in a really quick way like you are, then I think concentrating on the carbapenemase producers makes a lot of sense to me.

Zintars Beldavs: Hi. This is Zints. I was just going to say that we are trying to - we are concentrating on the carbapenemase producers but we are trying to be on some level - have some level of response also for CRE in general. I don't know if Dr. Pfeiffer wants to elaborate on the kind of the multi-tiered approach we have for our response.

Chris Pfeiffer: Sure. Yes. So - and I wanted to talk about the HAN too with the screening from out of the, you know, screening patients that are, you know, patients from out of the country, we're trying to figure out how to implement this too and we're wondering whether screening people outside the Pacific Northwest who had received healthcare, you know, outside of our region made sense but

- and how to enact it, I think, it'd be very difficult if it was physician-based knowledge of asking that specific question because I think putting - inserting that somehow into like a nurse-driven protocol on admissions would make the most sense.

But we haven't gotten very far. We're kind of still thinking about how and if we can implement that on the state level or do some pilot sites. And then - yes our tiered approach is to CRE your response, I think, was born out of the advisory committee meeting where it became clear that people weren't interested in chasing after carbapenem-resistant Enterobacters that were almost certainly not carbapenemase producers with a, you know, full court press as a routine.

And that makes sense to us. So what we decided was because we do have the capacity to focus on while we're developing the capacity, I guess, focus on carbapenemases. We have an initial response that will ideally be similar for any CRE that's detected.

And while it's getting confirmed or not as carbapenemase, then we would probably employ additional response with the carbapenemase such as screening, you know, screening high-risk context and notifying hospital administration, et cetera - the things that are more - I mean basically because it takes money and time and kind of expertise.

So we're going to kind of reserve that for the carbapenemase producers but then encourage certainly kind of contact precautions, monitoring hand hygiene. That type of thing for all CRE.

That make sense?

Meresa D'Angeli: Thank you very much for the answer to those questions.

Coordinator: The next question we have comes from Ramzi. Your line is open.

Ramzi Asfour: Hi. This is Ramzi Asfour, infectious disease physician working infection control in San Francisco Bay Area, and I have a couple of questions. One is what do you think the minimum laboratory capacity is for testing? We have a small laboratory at this one the hospital in particular in terms of dealing with CREs, we don't yet have any.

And two, it just be nice to hear what some of the higher volume hospitals maybe in the east coast that have experienced larger outbreaks in terms of what they're doing in terms of infection control to - are they - does anybody actually instituting one-on-one nursing for these patients and that would be nice to hear as well.

Alexander Kallen: Hi. This is Alex Kallen. So your first question about what type laboratory capacity you should have...

Ramzi Asfour: Exactly. What would be the minimal...

Alexander Kallen: Yes.

Ramzi Asfour: ...sort of standard?

Alexander Kallen: Yes. I think the minimal standard I think is having a reliable AST (antimicrobial susceptibility testing) being able - to be able to reliably have good susceptibility testing. You know, I think as you saw in Dr. Bamberg's slide and I'm sure from Zints - Mr. Beldavs's slide too, the problem that you

see is that a lot of people are using the FDA breakpoints which are the kind of older CLSI break points without doing Modified Hodge Testing, et cetera.

So, you know, I think having a laboratory that even just from a susceptibility standpoint is doing the things that they should be doing based on the current recommendation is probably the most important thing.

And then the second thing I think that would - is nice to have and something that - especially if you say you're not seeing it very frequently and something that in our experience does take a little while to get up to speed is the ability to do surveillance cultures.

So, I'll let Dr. Bamberg weigh in, but I think that is something that it's good to get established early to be able to do rectal surveillance cultures. There is a protocol that's available on the CDC website which is just one recommended protocol but those are - as far as your first question, those are the two things I recommend. Do you have anything, Wendy?

Wendy Bamberg: Yes. Well I'm vigorously nodding here because I was hoping that Dr. Kallen would bring up.

Wendy Bamberg: That was - well I'll try to talk a little bit louder over that so that was something that we dealt with the NDM outbreak and it really - it significant delayed our diagnosis of other patients - our identification of other case patients because the hospital where they experienced the first two cases didn't have the ability - the hospital lab didn't have the ability to do the screening and it took them probably about a month or so to get that up and running. That was definitely a delay and that's something that we're recommending from the state level.

When we do talk to hospitals just to try to encourage them to either have their lab, have that screening test up and running or know an alternative lab who can do it. We also got our state public health laboratory up and running with that first that public health laboratory is able to do that testing if the hospital lab can't.

Alexander Kallen: Great and then I think your second question was about specific interventions and I guess, you know, we could - there's a lot of things that folks have done I think again the interventions boil down to this kind of detect and protect strategy trying to identify patients with the surveillance cultures and clinical cultures as well who might be colonized or infected with these organisms and then using transmission-based precautions, especially for high risk patients, you know, usually contact precautions, et cetera, to try and prevent transmission.

So - you know, there are lots of places if you read the papers from Israel, et cetera, that I've used this kind of cohorting patients and staff and, I think, you know, in a way, that's kind of an engineered approach to making sure people adhere to contact precautions - in other words using specific designated staff - and patients not only putting the patients into the rooms but cohorting them on specific floors or parts of the floor and then having specific healthcare workers care for them because obviously, that decreases the risk that the healthcare worker is going to go directly from a patient who was colonized or infected to one who's not.

So I think that's another thing that people are using and then again, I would encourage you again to look at the interventions that are in the CRE toolkit - again, a lot more detail in there and some other supplemental interventions a little about chlorhexidine bathing, et cetera.

Do you guys want to add anything?

Zintars Beldavs: I mean the only - I was just going to say in terms of the one to one nursing and such I think that we've had discussions regarding that possibility and if a facility wants to do that, that's okay but we don't think that that's necessarily realistic statewide for all facilities to do.

So I think Alex state it pretty well. I don't know if Dr. Pfeiffer wants to say anything regarding those.

Christ Pfeiffer: No, Zints got it. I guess maybe additionally that, you know, as the cases - case number goes up, I think it makes much more sense and it's more, you know, feasible for places to cohort but just one case, yes, it's hard to convince places at least in theory so far to do one-to-one nurse cohorting.

Ramzi Asfour: Okay. Thank you.

Coordinator: The next question comes from Lei. Your line is open.

Lei Chen: Hi. Thank you for informative presentation. I'm a local epidemiologist. So I just have a few questions maybe the first question, I noticed in Oregon you guys are also monitoring some Acinetobacter. I'm just wondering if any Oregon or Colorado you are also monitoring pseudomonas for the multiple drug-resistance pseudomonas infections? And the second question is do you have any comments on the utility of Modified Hodge Test to test, you know, carbapenem resistant pseudomonas?

So I know the current CRSI recommendation do not recommend that but our local microbiologist do recommend using some sort of, you know, the new method. So I'm just wondering if there are any comments on that.

And the third question is for the Colorado and I'm just wondering from your case definition for the CRE and - you have two components - why is this? The carbapenem resistance and also resistant to all third generation's cephalosporin. So I'm wondering if your data shows some sort of carbapenem resistance but not resistant to all third generation cephalosporin. So that's my question.

Zintars Beldavs: ...I'll quickly say that no. The basic answer is no. We are not focused on pseudomonas at this point. Unfortunately, we have relatively limited resources and so we're just really trying to focus on CRE. We have helped with the Acinetobacter baumannii outbreak and are potentially willing to help with other MDRO outbreaks as needed but our focus really is CRE at this point.

Wendy Bamberg: And I would say ditto in Colorado although we do also have Acinetobacter are reportable condition that that principal focus of that is really from a national surveillance effort because we're part of the emerging infections program but we don't do the same level of intervention with Acinetobacter that we do with CRE.

Alexander Kallen: Okay and I think your second question about the Modified Hodge Test for pseudomonas, I honestly don't know the answer to that. I haven't seen it used that way but that's not to say it couldn't be used. I mean most of the mechanisms in pseudomonas are kind of intrinsic mechanisms rather than these plasmid-mediated resistance mechanism that you see in CRE, et cetera. So although - I'm sure that you could find some occasional plasmid-mediated ones. So I don't know the answer to that. Does anybody? Everyone here is...

Zintars Beldavs: Dr. Pfeiffer? No?

Chris Pfeiffer: No. Yes, I'm with Alex. I haven't heard of it being used for that but I don't know if I can be or not.

Alexander Kallen: And then for your third question was about the - why you got - I assumed is why you, in Colorado, chose to use the carbapenems and the cephalosporins as part of your definition in Colorado.

Wendy Bamberg: Is that your question?

Lei Chen: So my question is because I noticed that you - you know, so must be anyone of the carbapenem-resistant to plus and resistant to all third generation cephalosporin. I'm just wondering in your data, did you have, you know, what is proportion for those, you know, E. Coli and Klebsiella and they are resistant to carbapenem but they are not resistant to all third generation cephalosporins. So do you have some sort of data?

Wendy Bamberg: So we don't get those reports systematically...

Lei Chen: Oh okay.

Wendy Bamberg: ...so I can't speak to that although we do get them intermittently because since it's a new surveillance system. Labs do send us things and they're not sure whether or not they're supposed to report them to us. So we know that they're out there. There are definitely isolates like that out there but we don't - I don't have any sense of...

Lei Chen: Oh yes.

Wendy Bamberg: ...what the proportion is because we don't get them all reported systemically.

Alexander Kallen: Yes this is Alex Kallen. I will say that that definition kind of comes from the emerging infection program definition and the goal of that addition of the cephalosporins was in an attempt to try and make it more specific for the carbapenemase producers which we have some data that suggest that it does. It's still not hugely - especially among Enterobacters - is not hugely specific but it is more specific than the one that just uses the carbapenems.

I will say that we've also had isolates from - you know, occasional isolates from states, Washington, et cetera, that have not been non-susceptible to carbapenems but susceptible to the cephalosporins that have been KPC producers but our sense, at least based on isolates that we get here at CDC, is that the carbapenemase producers the main ones - NDM, et cetera - you know, there are certain carbapenemase like OXA-48, et cetera, that could be susceptible to the cephalosporins and resistant carbapenems.

Lei Chen: Great. Thank you.

Alexander Kallen: Sure.

Coordinator: The next question comes from Kim. Your line is open.

Kim Delahanty: Hi this is Kim Delahanty from UCSD Health Systems. I just have a question about the slides. Will we be able to have that reference again because the bunch of us did not get that in the beginning?

Judith Monroe: Yes. Hi. This is Judy Monroe again. So if you come to [www.cdc.gov/stltpublichealth](http://www.cdc.gov/stltpublichealth) all one word. So that's S-T-L-T public health, all one word, that will take you to the website that has all over the slides and the materials.

Kim Delahanty: Thank you.

Coordinator: And the final question comes from Carlotta. Your line is open.

Carlotta Amini: Hi. Thank you so much. I was just wondering - I'm in Arizona. I'm in a long-term care facility and I'd like to know the incidence of CRE infections in Arizona if you have any of that information.

Alexander Kallen: Sorry, we don't have state-specific data right now. It's just - it's kind of cutting it relatively thin. So we started doing it in 2012 because of the CAUTIs (catheter-associated urinary tract infections) and CLABSIs (central line-associated bloodstream infections) were, you know, required reporting starting then. So unfortunately that these are still relatively rare and cutting the data by states as a little - it's a little bit thin for that yet, but hopefully in the future, we'll be able to have more relevant data.

Carlotta Amini: Okay thank you.

Alexander Kallen: Sure.

Judith Monroe: So I think that ends our questions. Correct?

Coordinator: Yes ma'am.

Judith Monroe: Great. Okay. Well, let me - as we close, first of all I want to thank the presenters again and thanks for all of your great questions. If you take a moment and look at the next to the last slide in the PowerPoint, it's slide number 33, this shows Public Health Practice Stories from the Field and both of today's presentations from Dr. Bamberg and Mr. Beldavs will be featured in the Public Health Practice Stories from the Field. It's a series of - on a broad

range of public health practices that we've put together to show how things are being implemented in the field.

You can find links directly to these stories on the *Vital Signs* Town Hall Teleconference website or you can visit the link at the bottom of the slide to see all of the current stories that we have.

And then lastly, let us know how we can improve these teleconferences. We do this once a month with each of our *Vital Signs* topics. We want to be - make sure these are beneficial to use so you can give us feedback at [ostltsfeedback@cdc.gov](mailto:ostltsfeedback@cdc.gov), that's O-S-T-L-T-S feedback, all one word, @cdc.gov. Thanks, everybody.

Coordinator: Thank you and that does conclude today's conference. All parties may disconnect.