

**CDC *Vital Signs* Town Hall Teleconference on Healthcare-associated Infections  
Transcript**

March 8, 2011  
2:00pm – 3:00pm EST

Coordinator: Welcome and thank you all for standing by. All participants are in a listen only mode. Today's call is being recorded. If you have any objections, please disconnect at this time. I will now turn the meeting over to Dr. Judy Monroe. Thank you. You may begin.

Dr. Judy Monroe: Well thank you very much. Good afternoon everyone. I'm Dr. Judy Monroe, Director of the Office for State, Tribal, Local and Territorial Support and I want to welcome all of you to our March CDC *Vital Signs* Town Hall Teleconference.

Each month CDC releases *Vital Signs*, which is really a call to action around an important public health issue, and this month's release is on central line associated bloodstream infections and presents data that show how serious, costly and yet preventable these infections can be.

The report covers central line associated bloodstream infections data from intensive care units, other hospital wards and, for the first time, dialysis clinics.

While progress has been made in some areas, it's really clear that more needs to be done. We need to apply a similar prevention model, including following proven guidelines and implementing infection tracking programs, to decrease infections where ever central lines are used.

So how are we doing that? How can we build bridges between public health and medicine to improve individual patient care across the entire healthcare system?

As a physician and a public health professional, I am particularly interested in this topic and am really excited to welcome all of the clinicians and medical educators that may be joining us today on the call.

This topic provides an opportunity to highlight how public health and medicine can work together, and need to work together, to make a meaningful impact on patient care and safety.

At this point, I'll turn the teleconference over to Ms. Mamie Jennings Mabery from the Knowledge Management Branch here in OSTLTS, who will facilitate the presentation portion of today's meeting. So Mamie...

Mamie Jennings Mabery: Thank you Dr. Monroe. Good afternoon and thank you all for joining us today.

We want to let you know that the PowerPoint for today's presentation is available on the OSTLTS Website and that is at [www.cdc.gov/ostlts](http://www.cdc.gov/ostlts)—O-S-T-L-T-S. In the flash module in the top of the right hand corner of the page you simply click twice on the Town Hall tab to go to the *Vital Signs* Town Hall page and there you can open the slides and follow along with the presenters.

I want to take a moment to remind everyone that we have a short survey to take after the Town Hall. There you can provide feedback on our *Vital Signs* calls. You can find the link to the survey on the last slide in the presentation deck or on the *Vital Signs* Town Hall page on the OSTLTS Website. We really want these calls to benefit you and we truly value your time and

participation with us today, as well as your feedback about the value that these presentations and the dialogue has for you.

So this Town Hall is an opportunity for all of us to share and learn from one another. We will hear from our speakers today, but we also want to hear from many of you too on the last half of today's call that is dedicated to a Q&A session.

So as you listen closely to the presentations this afternoon and you think of a question you might want to ask, go ahead and jot it down so you will have it at hand during the Q&A session. We want to let you know that we are trying something new today. At the end of the presentation, all lines will be open for the conversation. At that point, we will ask each of you to mute your phone by pressing star 6 and then unmute your phone to ask a question. We will remind you of this later when we open the lines. So let me announce our presenters today.

Joining us to kick off the discussion is Dr. Arjun Srinivasan who is the Associate Director of the Healthcare-Associated Infection Prevention Program in CDC's Division of Healthcare Quality and Promotion. He is going to set the stage for our discussion today by providing a quick summary of this month's *Vital Signs* report.

Then we are going to hear from Dr. Marion Kainer who will highlight the work she has been doing as Director of the Healthcare Associated Infections and Antimicrobial Resistance Program within the Tennessee Department of Health. She is a healthcare epidemiologist and an adult infectious disease physician and will tell us about the progress Tennessee is making in addressing central line associated bloodstream infections.

We will also hear from Teresa Fox who will speak to us about her work as the Healthcare-Associated Infections Surveillance Program Director for the Georgia Department of Community Health in the Division of Public Health. One of her infection prevention programs recently received recognition as “The Best in Practice” from The Joint Commission. So she will highlight Georgia’s approach to using partnerships to reduce [HAIs] in the state.

So now I will turn the presentation over to Dr. Srinivasan who will share with us his report.

Dr. Arjun Srinivasan: Thank you very much. I’m really thrilled to be with you guys today and really glad that Teresa and Marion are going to be with us to (unintelligible) and find that there is so much activity going on in all of the states in preventing healthcare-associated infections and we’re eager to have some discussion about how we can do more today.

The second slide on your deck is a very brief background on central line associated bloodstream infections, which some people will call CLABSI. For those of you who are not as familiar with central lines, they are catheters that are placed into the bloodstream, generally in fairly sick patients, and they’re used to provide critically important treatments. But because they are placed into the bloodstream, they may actually create a risk for bacteria and fungi to enter the blood and cause infections related to the central line and hence the name central line associated bloodstream infections.

These infections are incredible serious and associated with very high morbidity, mortality and cost. If you look at published literature, the estimated excess medical cost of a single central line associated bloodstream infection is over \$16,500. And more importantly, the reported mortality of these infections is 12% to 25%—so up to 1 in 4 people who get these infections will die.

Most encouraging though is that data in the past five years have shown us that most of these infections, especially in intensive care units, are actually preventable. Slide number 3 is the summary of the findings from the *MMWR* report on the *Vital Signs*. What we did in this report was, rather than looking at the rates of infections, we decided to look at the overall numbers. So we used the hospital discharge data, as well as information from the National Healthcare Safety Network, to estimate the number of infections occurring in hospital intensive care units.

And for ICUs, because we have historical data, we were able to compare the number of infections between 2001 and 2009. And when we made that comparison, what we find is that over that time period, there was a 58% reduction in central line associated bloodstream infections in ICUs in hospitals; and that represents 25,000 fewer infections, up to 6,000 lives saved, and up to \$414 million in excess healthcare costs.

If you add all of those numbers up over the decade which they occurred, assuming steady reductions in CLABSIs, these numbers are pretty staggering. It looks like as much \$1.8 billion in excess costs that were potentially averted and 27,000 lives that were saved—so a huge impact in our hospital intensive care units in the last several years.

We also, though in the report, estimated the number of infections that were occurring in other areas of the hospital. And when we look at hospital wards, we found that 24,000 central line associated bloodstream infections occurred in those wards. So when you add that number that are still occurring in intensive care units, we get each year that there are about 41,000 of these infections occurring in our hospitals.

We also looked at the number of these infections occurring in dialysis patients. Many patients who receive hemodialysis do so through a central line and unfortunately we found that there were 37,000 of these infections in outpatient dialysis centers because the number of central lines used in those patients is so high.

We were also able to look at the specific bacteria that caused these central line infections and what we found is that, while all of them have gone down, some have been reduced more than others; and in particular, the number of central line associated bloodstream infections due to *Staphylococcus aureus* has been reduced more than other pathogens.

So clearly we saw tremendous progress but clearly there's also quite a bit more to do. So the next slide summarizes, from the *Vital Signs* factsheet, some of the things that various groups can do; and I will briefly touch on some of the activities that we think the government facilities and healthcare providers can do before turning to the states.

At a federal level, we need to learn to apply these successes in intensive care units to other types of infections, identify which actions and organisms cause the most problems, and learn how to prevent them. We need to be using the information to target new prevention approaches.

We need facilities to do the same. We need them to use data for action. We need them to sign up for and enroll in the CDC's National Healthcare Safety Network, monitor central line associated bloodstream infections, figure out where they're happening and why they're happening, and take actions to stop them.

And we need healthcare providers to always use our recommended infection control steps every time they put in a central line and every time they use it.

The next slide, we believe that states play a vitally important role in preventing healthcare-associated infections and it's a role that's growing dramatically each and every day—probably every day but certainly from year to year. There are a number of activities that we would hope that states will take part in in order to prevent healthcare-associated infections and specifically central line associated bloodstream infections.

We'd like all of you to join, start or expand your current programs to prevent these infections; to encourage your facilities to join the National Healthcare Safety Network to track their infections and to validate their data; to encourage facilities to join the national prevention collaborative “On the Cusp: Stop BSI” that's now active in almost every state, which is an evidenced-based, well-established program to prevent central line associated bloodstream infections that's now expanding to other types of infections. And where I think the states have been so successful and where we need continued leadership from all of you is in building the partnerships at the state and local levels and giving technical support to hospitals, dialysis centers and other medical care locations to prevent these infections.

So the final slide just summarizes the key points that I take from the *Vital Signs* report and these are the same points that Dr. Monroe just mentioned. We've seen a lot of progress in intensive care units but we know there's more to be done. We need to expand the best practices and we need to apply this model of collaboration that's worked so well to all healthcare settings and all types of healthcare-associated infections. We really do believe that states are central in these efforts to prevent healthcare-associated infections and you're going to hear from just two of the many states that are taking these types of actions and leading these efforts now. And so what I'll do is turn things over to Dr. Marion Kainer, from the state of Tennessee, who will talk a little bit

about the things that Tennessee has been working on related to central line associated bloodstream infections. Marion...

Dr. Marion Kainer: Thank you Arjun. I greatly appreciate the opportunity to share with you some of the progress we're making in reducing central line associated bloodstream infections or CLABSIs in Tennessee. Next slide.

Since I will be talking about the SIR or the Standardized Infection Ratio, I wanted to be sure that everyone understands exactly what I mean by that. The SIR is a risk adjusted summary measure akin to the SMR or Standardized Mortality Ratio. One divides the number of observed infections by the number of predicted or, in statistical terms, the number of expected infections. To calculate the number of predicted healthcare-associated infections, we use the National Healthcare Safety Network or NHSN data for 2006 through 2008.

How does one interpret the SIR? If the SIR is greater than 1, then the number of infections is higher than predicted. For example, if the SIR is 1.5, then the number of infections were 50% higher than predicted. An SIR of less than 1 indicates that the number of infections is lower than predicted. For example, an SIR of 0.4 indicates that there were 60% less infections than predicted. The aim here is to have zero infections. So the SIR should be as close to zero as possible.

The next slide shows the SIR or Standardized Infection Ratio over time for CLABSIs in neonatal intensive care units, or NICUs, in Tennessee. The X axis indicates the time interval in quarters per year; the Y axis, the SIR. The red line indicates an SIR of 1. That is what we would see if the number of infections observed was the same as the number predicted. The green line indicates an SIR of 0.5, the five year target according to the HHS Action Plan Matrix for Healthcare-Associated Infections.

You can see that in the third quarter of 2008 in Tennessee, our statewide SIR was 1.5. That means that the number of CLABSIs in our neonatal intensive care unit was 50% higher than predicted. We knew we had a major issue in our neonatal intensive care units and thus decided to focus our efforts in reducing CLABSIs in this patient population. However, one of the initial challenges we had to overcome was the reaction of many stating the CLABSIs success has only been demonstrated in adult and pediatric ICUs and that no one has shown that these efforts would be successful in these tiny babies in this most vulnerable population.

I'm very grateful to the two nurses from East Tennessee Children's Hospital who attended one of our statewide infection prevention collaborative meetings of the Tennessee Center for Patient Safety. They left that meeting with a true can-do attitude that they could adapt the CLABSIs bundle to the neonatal intensive care units. They indeed implemented this and had tremendous success at East Tennessee Children's Hospital, which in turn provided a lot of momentum and energy and enthusiasm for the CLABSI project, which was then taken up by Kid QC (the Tennessee initiative for perinatal quality care). Kid QC has been funded through the Tennessee Governor's Office on Childcare Coordination. One of Kid QC's major strengths is its grassroots efforts. Although it is multidisciplinary, it has a special focus on involving frontline staff. The end result is that the intervention becomes hard-wired.

On this slide, you can see the tremendous progress made in our neonatal intensive care units—in our last quarter of 2010, the SIR dropped to 0.44; that is we observed 56% less CLABSIs than predicted—especially when you compare that to the SIR of 1.5 in the third quarter of 2008.

The next slide shows the statewide SIR for CLABSIs in adult and pediatric ICUs for 2008 through 2010. Throughout calendar year 2008 and 2009, our statewide SIR remained above 1. This is despite Tennessee having a statewide

infection prevention collaborative for CLABSIs organized by the Tennessee Center for Patient Safety. It is an initiative of the Tennessee Hospital Association and funded through BlueCross BlueShield Foundation of Tennessee. The faculty for this infection prevention collaborative includes Peter Pronovost from Johns Hopkins and the fifth author on the New England Journal of Medicine paper on the Keystone Collaborative in Michigan that demonstrated such tremendous success in adults and pediatric ICU CLABSI reduction.

When we delve down into the data, we've found that many hospitals were indeed making major progress. However, this was not reflected in the statewide SIR. We had a handful of large facilities, including some major teaching hospitals, who accounted for a large number of central line days and central line associated bloodstream infections. When we examined the locations where we had major problems, we found that performance was worst among the medical intensive care units and the medical surgical intensive care units of major teaching hospitals. We recognized that if we did not make major inroads in preventing CLABSIs in these larger facilities, that even if we eliminated CLABSIs in all the other facilities, we would not have much impact in reducing the statewide SIR for CLABSIs.

In October 2009, we provided our hospitals with a courtesy advance draft copy of the statewide HAI Report with facility-specific summary SIRs and unit-specific CLABSI rates. At about that time, Craig Becker, President of the Tennessee Hospital Association, took it upon himself to personally reach out to hospital leadership for our outlier hospitals. In December 2009, the Tennessee Hospital Association Board adopted the aim of zero preventable harm and set itself the following the two targets: 1) zero infections in three years, and 2) being in the top quartile of performance on public measures.

The first healthcare-associated infections report from Tennessee was published in December 2009. And you can see on this graph the reduction in our statewide SIR over calendar year 2010. In the last quarter of 2010, our SIR for adult and pediatric ICUs was 0.53. This means that we had 47% less CLABSIs than would have been predicted.

The next slide summarizes statewide SIR and percentile distribution for adult and pediatric ICUs and neonatal intensive care units per calendar year between 2008 and 2010. These are from our February 4th data set. For our adult and pediatric ICUs, our statewide SIR has gone from significantly higher (indicated in red) or an SIR of 1.19, to significantly lower (indicated in blue) – an SIR of 0.75. In addition, the median SIR is halved from 0.90 to 0.43. This means that in 2010, 50% of our hospitals had an SIR of 0.43 or less. Our 90th percentile SIR has also decreased from 2.65 to 1.61.

In our neonatal intensive care units, our statewide SIR went from 1.41, indicated in red and significantly higher, to a significantly lower SIR of 0.64, indicated in blue. Our median went from 0.69 to 0.41; and our 90th percentile went from 2.35 to 1.15. So that means that nearly 50% of our hospitals in 2010 had an SIR at their facility of 1.15 or less.

The progress made represents a lot of hard work on the part of our many partner organizations: the HAI team at the Tennessee Department of Health, infection preventionists, hospital leadership and, most importantly, the bedside staff. I'm very grateful to them for all of their efforts in making healthcare safer for all Tennesseans. And I will now turn this presentation over to Teresa. Teresa...

Teresa Fox: Thank you Marion. I appreciate this opportunity to talk to you about the activities in Georgia.

Georgia is a non-mandatory state and prior to ARRO [American Recovery and Reinvestment Act] funding, there was no infrastructure at the state of Georgia to address HAIs. Georgia was awarded level one funding only and the funding provided for hiring one full-time state coordinator for two years, but there was no operational budget. So we face different challenges than Marion in the state of Tennessee.

With very little funding, we set out to establish a broad base of support for activities. The next slide – our first order of business was to establish an advisory committee that could help establish statewide prevention leadership, who could help build the necessary relationships across the state. We've spent a lot of time with—very dedicated to developing a master list and we began to assess each potential partner's interest. We tried to look and explore existing relationships with other organizations and, once we had the potential list of partners, we began to develop and recruit for each member of our plan. Our plan and our mission was to engage and build relationships to achieve our mutual goals.

We began our process with asking three—these major questions: What skills, information and resources do we need to tap into? What sources already exist in our stakeholders or in our partnership community? How can we reach these stakeholders? How do we address them? What expertise and services can other groups or organizations provide and contribute to us and what expertise and services can we provide and offer to them?

We looked for members in the community and across the states that can help bring us credibility to our cause because we were new. We had no funding. It was a major undertaking and we needed to make sure that we had a representation for a variety of groups and perspectives in our group.

So we came up and with our unique approach, Georgia was able to identify two major groups that would help us. Georgia has a very active Association for [Professionals in] Infection Control or APIC organizations, but we also have what's called the Georgia Infection Prevention Network or the GIPN, which is very strongly respected across the state and has been— this is their 30th year. And we remained available to both of these organizations to come and be guest speakers. With those opportunities, we would talk about NHSN, what the benefits were. We also talked about how infection prevention topics such as hand hygiene—the things that we could offer to them as being infection preventionists.

We also reported as a non-reporting state such things as how to use a standard definition, how to use risk adjusted comparisons, and how we were prepared to assist them in the development of their data analysis and skills, how to recognize trends and patient safety, [and] additional training for surveillance. We looked at all of those things separately and we began to plan.

You can see on the first slide, we have been successful in the recruitment for NHSN. In 2009, we had 8 and then at this present time we have 112 NHSN users. This was accomplished through recruitment and promotion and technical support. We have partnerships with two of the major healthcare associations in Georgia. One was the GMCF, which is the QIO for Georgia; that's the Georgia Medical Care Foundation. And we provided learning and training, not just face-to-face and going out into their individual facilities, but we did two webinars and we had 73 participants with over 45 facilities being represented. And then we worked with the Georgia Hospital Association or GHA and we did training there. And we had 70 participants with 60 facilities being represented. There were 44 webinars, 1 in person, and one audio conference conducted.

We also worked with their GIPN and APIC. They were very interested in what are the actual needs for the IPs of Georgia. We had a major concern with the CMS CLABSI ruling coming down for mandatory reporting that our resources would not be able to support that. So we worked with the Georgia Medical Care Foundation, their QIO, and our two infection prevention organizations to construct and design and conduct a needs assessment for those. We used that information to provide education to our IPs, regardless of what it was. Some of them—and we're also going to use that information in other endeavors that you'll see later on.

The first we identified and supported three existing collaboratives and one of those was the one that Arjun and Marion have already spoke about which is the On the Cusp: Stop BSI program. And Georgia has been successful in that. At the beginning of 2010, we had 21 facilities participating and now we have 29 and 40 units are exist—added in existing hospitals. We have 32 ICUs, two NICUs, two med surg, and one long-term care unit. Beginning in—the rates was 1.9 per 1,000 line day and through the fourth quarter of 2010, we have reduced that to 1.4 in these facilities. That's a 55% reduction so far in participating units; and there are several units that have gone for over a year with no CLABSIs reported.

We have developed new collaboratives in Georgia and one that we like to talk about is the Long-Term Infection Prevention Training. Based on our assessments and an opportunity that came available through our Georgia healthcare facilities regulators, which is a surveying process in Georgia, we were made aware that the new infection control standards for GAPIC and they knew that their facilities needed help in meeting those standards. So we formed a collaboration between the CDC (with Nimalie Stone), our Georgia Medicare Care Foundation, the QIO, regulators, Georgia public health, and the facilities to prepare and conduct three two-day long-term training infection prevention workshops across the state. Presently we have had 143 participants

in our presentations and we are reviewing the information and the effectiveness of those programs now.

Another new collaborative is the regional *C. diff* reduction collaborative that we are participating in in northwest Georgia. And that is where we have 12 long-term care nursing homes and three acute care facilities working together in a regional reduction in the process of *C. diff*. We will be looking at the interventions and for good practice and what's feasible, what's not feasible, and taking what would have been considered the sweet spot in finding out what is possible and what we can do to reduce those by interventions across a community. And once we have those interventions, we would like to take that collaborative approach and spread it across the state of Alabama using other partners that we have established.

We are working with our Georgia infection prevention and our APIC chapters. One of their major concerns was mentoring for new IPs [infection preventionists], and so we are spearheading and help coordinating the participation of mentors and mentees across the state. That program is just in infancy and we're looking for great things to happen there.

Another one is we designed and promoted a state public health HAI website; and on this website, we have tried to look at our partners and provide links from our website to theirs with pertinent information.

We also have partnered with the Georgia Emerging Infection Program, which is one of ten across the state, and we use that program to help promote NHSN, our collaborative work with *C. diff*, and our MRSA work.

Lessons learned, which is the next one: you need to learn to educate the stakeholders. First educate the stakeholders through continuous feedback and

asking the right questions. A clear understanding of community needs and the resources, as well as the inclusion of the stakeholders, is very important.

Second, you need to ask your partners what are their needs and focus your plans to address those needs. Stakeholders will tell you what they need and pretty much how they want you to meet their needs. I would encourage you to retain strong and consistent communication with your stakeholders outside of the collaboration on a quarterly—you know, talk, interact, you know, search for what their needs are and how you can fill those needs.

Third, strive to increase communication across collaboration partners. Hold regular, consistent and mutually beneficial, constructive and profitable, informative and brief meetings. In short, anticipate the needs of your partners and how you can meet those needs.

Next – Georgia’s unanswered questions: How do we engage facilities to join our G-SNUG users group? G-SNUG is a users group set up in NHSN for monitoring and sharing of data. Presently, we only have two users in our state. It’s very hard and we have not broken that barrier even though we have done much education and talked about how we would be useful to our facilities. Our biggest problem is how do we protect facilities under the strong sunshine laws that are present in Georgia. And a sunshine law is a slang term for freedom of information regulations that guarantees access to data held by the state. They establish the right to know legal processes by which requests may be made from government-held information to be received freely or at minimal cost, which is often called the open records act. Georgia has a very strong one and we’re still evaluating how we can protect the facility data across the state.

Next is how do we sustain a state’s program without designating, ongoing funding. That is a huge problem in Georgia with the ARRA fundings to

terminate through December of 2011. We are looking for collaboratives that we may continue our activities and so collaboration and practices in partnerships are very, very important to us.

And, in summary, partnerships are the cornerstone of the development of our program, including those between facilities, organizations, and agencies that support the goals of our program. We learned that we must customize activities to benefit the building of new and stronger partnerships statewide, as well as in local areas. By understanding each stakeholder's parameters, what they can do, what they can't do, and what they're operating conditions are [then] we were able to come to a consensus on common goals. Collaborative efforts have hinged on obtaining shared understanding among stakeholders at all levels and then enabled to translate the partnerships into formal, tangible goals that positively affect each stakeholder.

I will turn the teleconference back over to the moderator for questions and answers.

Mamie Jennings Mabery: Thank you all for sharing your work with us. Before we open up the lines, I'd like to turn it back to Dr. Monroe to provide her comments on the information shared. Dr. Monroe...

Dr. Judy Monroe: Well thanks. Wow. Thanks to all of our presenters and we certainly heard the importance of partnerships and communication. Let me—I tell you, I'm reacting to the data that I just heard and I think, you know, as a nation, we really need to congratulate ourselves with a 58% reduction, as highlighted in the *Vital Signs*. I mean that's worth celebrating, but that also should give us a charge to build on that success. And, as you heard on the call, the aim is zero. So we want to—as a nation, we really want to celebrate zero infections in this category.

And I think if you—let me congratulate Tennessee. The champions I heard in that story, the two nurses that took it on and said, “Hey, we can do this”—I mean sometimes that’s what it takes are those champions that hear the call and take it to action and then look at what an incredible story in Tennessee.

I also heard the role of states and I think for all the health departments on the call today, you should be hearing your call to action in terms of encouraging your facilities to join the CDC’s Infection Tracking System and really rally a call around zero central line infections in your state.

And then the other, for any medical educators on the call today, that my other reaction is hearing, again from Tennessee, how the larger teaching hospitals had some of the worst outcomes and so I think that’s a real call to action for those in teaching hospitals as well to make a difference for our nation.

So I’m anxious to hear from the experts on the call.