

DR. WILLIAM JARVIS

Past the Tipping Point

How Record-High MRSA Rates Will Impact the Healthcare Industry

NARRATOR: Dr. William Jarvis, president of Jason and Jarvis Associates, a healthcare industry consulting firm, is a highly published expert in infection control. A leader at the Centers for Disease Control and Prevention for 23 years, he has also served as president of the Society for Healthcare Epidemiology of America (SHEA) and past President of the Association for Professionals in Infection Control and Epidemiology (APIC) Research Foundation. In this interview, recorded at a recent APIC conference, Jarvis talks to Laura Miller of Knowledge Is Infectious about the latest MRSA data and the importance of active screening and evidence-based control measures.

The podcast begins with a discussion of APIC's MRSA Prevalence Study, the largest and most comprehensive study of its kind, which revealed that 46 out of every 1,000 patients in the survey were either infected or colonized with MRSA—a rate that's eight to 11 times higher than any previous estimate. To review this study, go to www.apic.org and click on "Research Foundation."

INTERVIEWER: You had presented some data this morning about MRSA and how prevalent it is. Can you tell me a little bit about why these data have been so difficult to get [one's] arms around, and what these new data will tell us?

JARVIS: I think [there are] several reasons why it has been difficult to get our arms around it. First is, MRSA has been emerging in hospitals since the late '60s, early '70s, and I think to some extent many have taken it for granted. I think more recently we've paid attention to the northern European countries who have been much more successful in controlling MRSA. Some of them started their control measures when there were very low rates, less than 1 percent, and have kept them there. But Denmark actually started theirs when 35 percent of bloodstream infections were caused by MRSA. This is about 1963 to 1965. In the U.S. it was less than 1 percent at the time. So we got to 35 percent of our bloodstream infections probably in the mid-'70s or maybe even later—in the '80s.

So in Denmark they addressed this after it had become a much bigger problem, and now we have seen a number of interventions in the United States where we have been able to control MRSA with the same general plan that northern

European countries have done: a risk assessment, active screening of those who are at high risk, contact isolation, hand hygiene and environmental cleaning.

So I think it's the recognition that you can do something about it, No. 1; and No. 2, the emergence of community-acquired MRSA that has gotten a lot more press, a lot more media attention than the existing healthcare-associated MRSA. I think the combination of those has led to the recognition that maybe we in the United States should start doing something to try to reverse the trend on MRSA.

Part of the reason why it has been difficult to get our hands around it is the CDC's surveillance systems are relatively small and biased toward large teaching hospitals, and don't even include hospitals with less than 100 beds, and if you look at all American Hospital Association hospitals, the average hospital in the United States is 100 beds or less, so a huge segment of the population of hospitals are literally ignored in that surveillance system.

The states have not been real active in looking at MRSA. It's not a reportable disease in most states, and most states don't have individuals who are particularly attuned to healthcare-associated disease. They have a much bigger burden of dealing with vaccine-preventable disease and community-acquired disease. So looking at healthcare-associated disease just hasn't been a priority. So I think all of those have led to a kind of lackadaisical attitude, if you will, of trying to address this issue.

Only recently have more data come out. The CDC study that was published in *JAMA* looking just at invasive disease—which literally 75 percent of it was blood culture, so it is really a very narrow part of MRSA—and yet that study estimates that nationally we have over 94,000 invasive MSRA infections and almost 20,000 deaths—so more than HIV causes in this country. So that's a bit of a wake-up call. And then our survey through APIC of ICP's—so kind of going where the action is, going where the money is, going where the knowledge is—showing that the rate was 46.3 per thousand inpatients, which is literally eight to 12 times higher than any previous estimate. I think the CDC data in *JAMA* and our survey show that the extent of this problem is much, much bigger than any of us even thought.

NARRATOR:

In this section of the podcast, Dr. Jarvis talks about how awareness of MRSA rates has led to an increasing number of aggressive MRSA control programs, practical solutions for fighting community-based MRSA, and a growing demand for MRSA screening. He also encourages the infection control community to

lead the charge in preventing MRSA now—before new legislation catapults infection control issues into the political realm.

INTERVIEWER: So what do these data...I mean, obviously it is a wake-up call of some sort, but since these survey results were announced, which I know were relatively recent—you haven't had a whole lot of history here—but, what kind of things have you seen come into action because of these data?

JARVIS: I think, fortunately, the CDC data and our APIC survey are coming at a time where the landscape had already started to change, being led primarily by the public being tired of waiting for the infection control world to do anything about this. APIC has stepped forward, had the MRSA conference a year ago to raise awareness of this issue, and now the survey documenting the huge extent of this problem, and now having on their Web site MRSA control measures that are consistent with CDC recommendations, SHEA guideline recommendations from 2002, and even the Institute for Healthcare Improvement initiative that they have going, so I think we've passed the tipping point.

We now have the VA system, VHA system, HCH system, Catholic Hospital West system and others, who have begun very aggressive MRSA-control programs. I think we're seeing—hopefully, in my mind—the beginning of turning the tide on MRSA and showing, as over 200 studies have shown, that if you do a risk assessment, active screening, contact isolation, hand hygiene, environmental cleaning, you can control these infections.

Literally, it doesn't matter what's happening with community-acquired MRSA, which is rapidly increasing, but it's increasing in certain specific populations, such as in prisons—which is a huge problem—in prisons and jails, homeless and IVD user—intravenous drug user—populations, and then occasionally getting into our sports team—contact sports groups, whether they be gymnasts, football teams, wrestling teams, etc.

I think the message there is hygiene—not antibiotic control, but hygiene. More bathing, more hand hygiene is what's necessary if you're going to have close contact—and making sure your environment is clean. Now we know in the hospital that the risk-assessment screening, contact isolation, hand hygiene, environmental cleaning, will control MRSA there.

So as the burden of MRSA from the community is added to the huge burden we already have with the healthcare-associated strains, if we're meeting that

at the door to the hospital—like Dr. Chip Chambers said during his talk—there are none of us that can stand at the door of the hospital and say, “Yes MRSA,” “No MRSA.” None of us can tell that. So what is the only way we can tell? That’s through screening.

To me, it is very similar to what happens to all of us when we go to the airport. We all take off our shoes because of one idiot who put a bomb in his shoe. They don’t look around for somebody who has a big shoe, or looks funny. Every one of us takes our shoes off.

I think if the CDC can recommend that all of our population should be screened for HIV, when the majority of our population is at no risk for HIV, and there are more deaths from invasive MRSA than there are from HIV, then why shouldn’t we be doing more active screening of a much smaller population, the hospital population, all of whom when they come into that hospital are at risk for MRSA?

INTERVIEWER: What do you think the likelihood of us getting to that point is, of all hospitals being mandated to screen? Is that something that the state legislatures [should address]?

JARVIS: I am not a big fan of legislation. I wish that SHEA, APIC and CDC would do the mandating, but I think the public looks at the slide, for instance, of CDC/NNIS [National Nosocomial Infections Surveillance System] ICU data, and sees MRSA going inextricably higher every single year since 1980, and they’re getting tired of waiting around for it. I think that’s why we’re seeing public activists out there pushing for legislation, basically saying, “If you’re not going to do it, we’ll make you do it.” I would rather have all of us step forward and do it ourselves and negate the need for that legislation. But I think the writing is on the wall. If that is not done, the public will make us do it.

Unfortunately, when it moves from SHEA, APIC, CDC and the infection control world leading that charge, when we know risk assessment, screening high risk patients, contact isolation, hand hygiene and environmental cleaning works—that when we move into the political other things get added to that. There is a huge emphasis on reporting. How does reporting decrease MRSA? I can report it to you every day. If I do screening, contact isolation, hand hygiene, environmental cleaning it reduces MRSA. So a lot of the legislation is aimed at reporting, which may make somebody feel good. It doesn’t make me feel good. If I go into a hospital, I would prefer to know that myself, as well as others

around me, are being screened, and those that have MRSA are being put in isolation and that you're reinforcing the importance of hand hygiene and contact isolation, environmental cleaning on those.

NARRATOR: In this section of the podcast, Dr. Jarvis discusses the importance of applying evidence-based measures to control MRSA, the value of financial incentives in healthcare organizations and the potential impact of the new Centers for Medicare & Medicaid Services (CMS) ruling, which will require health care organizations to pay for certain infections acquired in the hospital. MRSA infections have not yet been selected for nonpayment, but many—including Jarvis—believe that could change in the next few years.

INTERVIEWER: If there was one thing that the infection control professional can do around MRSA, what would that be?

JARVIS: I think the most important thing that we should do in infection control with MRSA or otherwise, is we should be led to implementing our interventions based on science. I don't know that there is a single CDC Category 1A recommendation that has 200 studies, quasi-experimental or not, proving its efficacy.

We recommend maximal barrier precautions with central venous catheter bloodstream infection prevention, and there are *four* quasi-experimental studies suggesting that that would work. I'm not saying you shouldn't do it; I'm just saying the magnitude of the data showing that active surveillance testing, contact isolation, hand hygiene and environmental cleaning—there are over 200 studies, no antibiotic controls, and really no hand hygiene campaigns in most of those—and yet every single one of them has reduced their MRSA. There is not a one that has not.

If this is due to chance, it should be 50/50. When I go to meetings like this and ask the audience how many of you have had MRSA spontaneous decrease, I have never had a hand go up. The CDC/NNIS hospitals are very dedicated to HAI control, and yet the MRSA rate continues to go up. The reason is we're not applying the evidence-based control measures. Until we do that, we're not going to see a reversing of this trend. I think the infection control community needs to lead by showing that we will implement the evidence-based measures. I think we have really two barriers, if you will, to implementation. In some hospitals, there are infection control personnel who really want to do the right thing based on evidence and can't get administrative support.

We need leadership, then, from CDC, APIC and SHEA saying this is what you should do—to give them the ammunition to go to their administrators and get the support for it. In others, we have infection control personnel who for some reason either don't believe this works despite the huge amount of data, don't want to go to the bother, or have very complicated healthcare systems where they have 57 different groups and people they have to try to get to agree to do anything.

Unfortunately, I'm afraid in the latter group that until you have either a CDC recommendation, or you have to mandate a law, or there's a severe financial penalty—unless you do it, it's not going to happen.

I have heard—I haven't confirmed it yet—of one large healthcare system where the CEO of that healthcare system went to each of the CEOs of the hospital and said, "Your bonus next year is dependent upon you controlling MRSA." Do any of us believe that it won't be controlled in those institutions? If there's a financial incentive, it will happen.

If CMS moves—I showed in my presentation that literally 70 percent of the cost of MRSA is carried by CMS—that if the Centers for Medicare & Medicaid Services moves within the next year or two to say, "Well, wonderful, we are not going to pay for these anymore," then hopefully CEOs will recognize it's a lot cheaper to prevent than to treat these infections from a hospital perspective. And I think the other perspective that we have to keep in mind, and infection control personnel should have at the forefront, is the enormous impact that these infections cause to our patients.

These are not little boils like community-acquired MRSA where you come in and get it lanced and it goes away. These are bloodstream infections, osteomyelitis, meningitis, surgical site infections, that lead to weeks or months of hospitalization, to deaths, to chronic problems that these patients have to deal with. It's an enormous burden, and I don't think any studies that any of us have done have really measured that huge impact that the patients carry with these MRSA infections.