

# STRATEGIES AND SOLUTIONS FOR INFECTION PREVENTION LEADERS

**On July 9, 2014, GOJO Industries invited a panel of thought leaders in the world of infection prevention to participate in a podcast titled *Strategies and Solutions for Infection Prevention Leaders*. At issue is the rate of Hospital-Acquired Infections (HAIs), a complex problem that may call for multifaceted solutions.**

The panelists were asked to discuss hand hygiene rates as related to infection rates, as well as a study being conducted using a program called SMARTLINK™. Developed by GOJO Industries, SMARTLINK is a 24/7 hand hygiene compliance monitoring and automated data collection system that combines innovative measuring tools with staff training and the use of GOJO soap formulations and dispensers.

What follows is a synopsis of comments in question and answer format as shared by panelists: Debra Johnson, MPH, BSN, RN, OCN, CIC Director of Infection Prevention and Control, Salinas Valley Memorial Healthcare System, Salinas, CA; Dr. Rekha Murthy, Medical Director of Hospital Epidemiology, Cedars-Sinai Medical Center, Los Angeles, CA, and an Infectious Diseases physician (and chair of the HQI Hospital-Acquired Infection Workgroup); Julie Morath, President and CEO, Hospital Quality Institute and former Chief Patient and Safety Officer, Vanderbilt University Medical Center, Nashville, TN; Barbara Goss-Bottorff, Director of Infection Prevention, Hoag Memorial Hospital, Presbyterian, Newport Beach and Irvine, CA, and President of the California APIC (Association for Professionals in Infection Control) Coordinating Council; and Alicia Muñoz, Vice President of Quality and Patient Safety, Hospital

Association of San Diego and Imperial Counties and Hospital Quality Institute. The podcast was facilitated by Scott Newell, former weekend co-anchor of Channel 3 News (NBC affiliate) and former host of the network's program, "AM Cleveland" in Cleveland, Ohio.

**Q: Infection control is a critically important subject matter, not only for healthcare personnel but also for patients. The issue of hospital and healthcare setting incurred infection has been a prominent topic among recent news reports. Let's begin with an overview of the Hospital Quality Institute of California (HQI).**

Julie: HQI has established a number of strategic goals. One is to advocate for hospitals and for the best healthcare for Californians. With regard to infection control, the areas we are involved in support legislation centered on anti-microbial stewardship. We believe California to be ahead of the curve regarding such legislation and we applaud the efforts taking place. We will be formalizing committees in our hospital organizations throughout the state focused on adopting evidence-based practices promulgated by the American Hospital Association and will work with subject matter experts cited in a toolkit we've recently released.

In addition to advocacy work, we want to create a healthier California. Efforts to that end include supporting hand hygiene best practices and childhood immunizations, among other endeavors. We continue to work with our health department colleagues and community organizations to assure that best practices are being brought to the public—particularly to people who work in the healthcare field and related organizations.

Our operational arm is called "Patient Safety First...A California Partnership for Health (PSF)." This is an initiative launched in 2010 to improve quality of care, reduce the cost of care and, ultimately, save lives, focusing on sepsis and a subset of HAIs, including *c.difficile*. We are also involved in the Hospital Engagement Network through the CMS (Centers for Medicare and Medicaid Services) Partnership for Patients. Additionally, we have taken concrete steps toward supporting activities and practices to eliminate hospital-acquired infections and resulting hospital-acquired conditions. We are driving and measuring improvement across ten areas of harm, including CLABSI, CAUTI and VAC.

## Q: This question is for all panelists: what public policy priorities do you see as necessary in addressing infection control?

Debra: I think one public policy priority we need is consistency in data collection requirements. Requirements for collecting data on HACs, CMS and CD through NHSN all vary and lack a level of consistency. This means we have to work continuously to notify and inform our executive leadership, as well as the public. This lack of consistency causes confusion even among healthcare professionals, making it very difficult to translate the requirements to laypeople and patients.

Julie: I agree with that—information and feedback underlie the foundation of everything else that we do.

Rekha: I think in addition to providing support for hospitals, educating the public is critical. With so much change occurring in our healthcare system, both nationally and in our state, it is imperative to be proactive, not only with hospitals but also with the public regarding HAI prevention work occurring in California hospitals. We hear often in the media about adverse outcomes, but more can be done to inform the public about the tremendous patient safety work that is taking place across California hospitals.

## Q: So where does hand hygiene fit into all of this?

Barbara: Hand hygiene is the foundation of everything we do to prevent infection. There has been a keen focus in infection prevention in the last few years that calls for getting back to the basics—addressing the different challenges we face today, multi-drug-resistant organisms, the so-called “super bugs,” device-related infections—really any kind of healthcare-acquired infection. Adhering to the basics will prevent the transmission of infection, and proper hand hygiene is one of those most basic practices.

Alicia: I support that. Hand hygiene is the cornerstone on which infection prevention rests. Without it, other efforts we make at infection control are going to be insufficient.

To me, all arrows point to hand hygiene compliance and how very basic it is in patient-centered care and our efforts to “do no harm” during the patient’s experience. The business case for HAI reduction has been made. Penalties are increasing and HCAHPS scores improve when patients

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- Alicia Muñoz

do not acquire infections. The argument comes full circle, pointing at proper hand hygiene as the starting point.

Julie: Hand hygiene is an area that calls for intense urgency on our part. We've known this since 1847, but for my colleagues and I in California, it has taken on greater importance. Dr. Semmelweis introduced the importance of hand hygiene and antiseptic procedure in 1847, yet we have still been unable to break through and achieve perfection regarding hand hygiene in our practices. He was ridiculed by his peers. Florence Nightingale also identified the risks of infection in hospital settings and was a pioneer in epidemiology. So we stand on strong shoulders. Now, it is a matter of will and discipline to assure that we are aligned around these practices. And the exciting thing about hand hygiene is that everyone is a participant, regardless of role or area of expertise or where you work or live in the community, or how we raise our children. It is a baseline that we all must strive to achieve.

Rekha: I would add that in fact Semmelweis was ostracized for his research. Yet even now, it has taken a couple of decades to really bring the importance of hand hygiene compliance to the forefront of patient safety efforts. We've accomplished a great deal with the support of CDC guidelines, introducing alcohol-based hand rubs to the point of care, and providing support for staff members in meeting expectations. But we need to move beyond that. As you said "will and discipline" are important in tackling hand hygiene compliance, I would add that "routine and habit" are also essential to sustained high performance. We are trying to move the culture of patient safety toward something that should become almost instinctual—to the point where people don't have to think about washing their hands before and after touching a patient. The seatbelt campaign is a good analogy, where using both education and laws have resulted in improvement in public safety. To change behaviors, we must promote a practice that becomes reflexive, rather than a conscious decision to wash hands and that is what we're striving for. Similarly, I think the public should be made aware that hand hygiene is a fundamental expectation when they visit people in the hospital. It's not only healthcare workers who should practice proper hand hygiene. It's just as Julie said, it's an "everyman" issue that must be built into a standard behavior.

Barbara: One of our limitations in achieving successful compliance in the past with healthcare providers is that we've relied only on education. And again, we've been educating for decades. I think we are coming to realize that those who have been successful with improvement are changing behaviors. In order to be effective we need to be knowledgeable about principles of learning and the tools that will help us be more effective educators. We also need to be knowledgeable regarding strategies that change behavior.

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Debra: Another person who played a huge role in hand hygiene was Maryanne McGuckin. In 2005, she conducted a study that focused on the “when,” “why” and “how” of hand hygiene. We have data that supports the science behind how hand hygiene saves lives. As others have pointed out, we know all of this. We learned hand hygiene at home. We’ve been washing our hands for years. However, the way my mother washed my hands might not be way somebody else’s mother did. Learning from evidence over the years, people are now starting to understand that the way you cleanse is important. So the behavioral aspect is significant and impacts the outcome of “simple” hand hygiene.

**Q: Alicia, I’d like to ask you about your involvement in a study regarding GOJO’s SMARTLINK™ system. Could you first give us a little background about what SMARTLINK is and what the study was aiming to accomplish, as well as how you brought participants on board?**

Alicia: Patient Safety First...A California Partnership for Health provided the resources to have a robust conversation with members of the local APIC Chapter about their issues and concerns. The biggest issue was lack of acceptance of hand hygiene compliance rates derived through direct observation. Infection preventionists expressed frustration at their inability to bring real-time information, accountability and transparency to workflow. This inhibited targeted intervention and education to support a culture of behavior for peer monitoring.

In order to address this, the San Diego and Imperial Counties APIC Chapter proposed that PSF funds support an electronic monitoring system in one or two units in each region’s hospitals to study the compliance rate on a 24/7 basis. The APIC Chapter chose to work with GOJO Industries on this project. As a partner, GOJO matched funds, met with hospital senior leaders and their teams and provided the hardware, dispensers and product for this study.

This IRB study invited the region’s 19 PSF hospitals to participate. Four hospitals met the criteria and made the commitment to the one-year study.

The study aimed to evaluate the impact an electronic hand hygiene compliance monitoring system can have on hand hygiene compliance rates and hospital-acquired infection rates when used in combination with a clinical hand hygiene improvement program.

Julie: In my conversations with you, Alicia, it is apparent to me that you have to make hand hygiene really easy for people in order to create habitual excellence that becomes top-of-mind and automatic. So the electronic monitoring helps support peer monitoring, and the exchange

of data and reminders become automatic in practice. The devices for foam and antiseptic solutions were distributed and made easily accessible, so that there was always something there, wherever you went, to cue people to wash their hands.

**Q: From your perspective and the leadership perspective, what do you feel about what was learned and where do you go from here?**

Alicia: A factor that impacted hand hygiene compliance is staff acceptance of the program, system and reports. Staff at one of the hospitals resisted because they felt the system was being installed due to their unit scoring low on compliance reports. It was perceived as punitive and there was resentment from frontline staffers.

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**Q: Would any of the other panelists like to weigh in on this and state what you've observed, including some of the challenges you've faced?**

Debra: Today, executive leaders are definitely more engaged in infection prevention and patient safety processes than they may have been in the past. It's a given that everyone always wanted patients to be safe, but the focus has become much more intense in the past ten years or more.

It has captured the interest of those individuals whom were not traditionally part of prevention in the past. For years, infection preventionists have been focused on preventing the occurrence and spread of infection within the hospital and educating staff; however the support from the executive suite wasn't always there. Initially when the flag was raised about how patient infection affects the bottom line, leadership and others became more engaged in supporting the institution of programs and processes that can help reduce or eliminate HAI, like hand hygiene. I've worked from Rhode Island to Hawaii, and I've seen this with executives across the country. Not only have they become engaged, but they also have become passionate about patient safety.

Rekha: I would echo that opinion, and add that, not only are executives more engaged because it impacts the bottom line in a real fashion, but also public reporting of infection rates has brought attention to transparency and public perception of quality and safety issues related to hospital-acquired infections. There is more willingness now to support infection preventionists in their efforts to go beyond education and develop engineered solutions that provide measurement, data and feedback.

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And accountability is key. I think many facilities, including Cedars-Sinai, have implemented accountability models as one of the five elements of hand hygiene programs: education, administrative support, engineering controls, motivation campaigns and rewards/accountability. Accountability is a fundamental component of making a program successful. So we are seeing a shift where CEOs and other hospital leaders recognize that, from the perspective of patient safety and public health, hand hygiene must be addressed at all levels. All of the other elements of infection prevention build on hand hygiene, such as preventing central line infections and other hospital-acquired infections. The reality is that we may not win the war against the continued emergence of drug-resistant bacteria, but as we have fewer antibiotics available to us to treat deadly infections from these bacteria, emphasizing the basics—including hand hygiene—becomes even more important. Without hand hygiene, we don't have a hope of winning the battles to protect our sickest patients from hospital-acquired infections. Executive leadership support is critical for applying the multifaceted approaches required to achieve and sustain hand hygiene compliance.

Barbara: I would add that using a multifaceted approach resulted in our experience in seeing great improvement in hand hygiene compliance at our institution. I've heard this from other facilities as well, that there are a variety of strategies that can result in improved compliance, including education, peer support, accountability, rewards and positive reinforcement. But, you definitely need the support of executive leadership across the organization. It is essential for achieving changes and incorporating this important patient safety initiative into the organization's culture.

Julie: I agree wholeheartedly—another piece of the puzzle is to have leadership modeling the way. Leaders who have driven success are those that, as they make rounds, visit units, conduct executive WalkRounds™ and attend and lead teaching rounds—all modeling the way with hand hygiene. When they do, their staff follows. We found leadership expectation and modeling to be very powerful change agents.

**Q: When you receive your data and, for example the electronic monitoring shows only 20 percent compliance, what advice do you then give to leadership?**

Julie: I can describe what one organization did. Vanderbilt, while I was there, had a much disciplined, step-by-step accountability procedure whereby, if hand hygiene compliance was low, the person in charge of the area met for coffee with an epidemiologist to review methods for improving compliance rates. After that, if compliance did not improve, the area leader met for an escalated discussion with the leadership (i.e., Department Chair or Chief) of their clinical division. If improvement

still did not occur, a report was sent to the vice chancellor. This built an accountability structure into the process that included peer monitoring and compliance to best-known practices, creating an environment where hand hygiene was considered important, monitored, reported, incented and accounted for. The structure provided support, but also assessed those environments in which compliance was falling short of the goal.

The only correct response to a peer reminder to complete hand hygiene was “thank you.” Non-team-promoting responses had consequences.

Rekha: More and more facilities have developed accountability models similar to the models our institution has. We have models for employees and for physicians that include individual coaching for consistent non-compliance with individual accountability and consequences for continued noncompliance despite this coaching. These policies are supported by both executive and medical leadership, so it becomes very clear that there is no tolerance for continued non-compliance. At the same time, every effort is made to reach out and support these individuals. The goal is not punishment, but behavioral change that results in a culture of safety. If individuals are having issues with compliance, we try to reach out and help them to understand and overcome whatever barriers are preventing compliance. We give them every opportunity to change their behavior, but it doesn’t take long before word gets around and people realize that we are taking hand hygiene very, very seriously. That is the role of leadership as well.

Julie: It creates a new story within an organization as word spreads that non-team-promoting behavior and disregard of known safety practices are not acceptable. In fact, as described, we’ve been told that the only correct response if you are reminded to perform hand hygiene is to say “thank you” and wash your hands!

**Q: What happens when an electronic monitoring system has shown that compliance rates are much lower than the participants anticipated they would be? Does that frighten people? And is the point really just about improvement? Do such results create cause for alarm? Could all of you comment on that, and include what advice you would give.**

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**After all, you are collecting data from thousands of events, 24/7, and results may vary by shift or department—and can vary from the results one would realize under direct observation.**

Rekha: I think regardless of the system being used, you will see variations if you are using a small sample versus a large sample. You have to accept that you will see variations and agree not to argue about the data. The goal, whatever the figure, is to raise the level of compliance. Though we may recognize it's not so much about reaching a number as it is about changing culture, at the same time having a target is important for purposes of a campaign and for gaining traction. So if the numbers are lower than expected, compliance has not been in fact adopted as a reflex habit by the culture. We've worked diligently at our facility to have people focus, not so much just on the numbers, but on the expectation that hand hygiene has to be a rote behavior. As you start to address individuals who continue to not comply, they begin to understand that what we're trying to do is support a change in behavior as opposed to focusing on the number itself. However, regardless of method of monitoring, messaging about the information conveyed by the data can make a significant impact on how the data is perceived, focusing improvement efforts on the strategies and tactics and using the data for monitoring trends to reflect progress.

Debra: I think you've touched on a hugely significant point, which has to do with the culture of safety in an organization. The original question included a potential concern regarding the installation of electronic monitoring—something that's automatic and involves passive observation—and people's worries about what the data will say and to whom it will be reported. To me, that gets at the heart of the problem. We do focus on data and we're penalized for our data. So, out of necessity, it does become about the data. But I also tell my leaders that it depends on who is doing the monitoring, how they are trained, and how they will use the data. Are they looking at their own units or someone else's? As healthcare workers see others washing or cleaning their hands, they will do the same. The Hawthorne Effect kicks in when an individual knows that someone is watching them. It's a bit like Pavlov's work—a behavior can become automatic with repeated exposure. It becomes hardwired and ingrained into daily routine when there is personal individual accountability. I mean, nobody comes to work and says, "I'm not going to wash my hands." Non-compliance is not usually purposeful.

Julie: I would add that there is individual accountability and collective accountability involved in being a strong advocate for patients. Self-monitoring and peer monitoring are a part of that professionalism. However, it's a good idea to prepare people for the fact that they are going to see data, and that they will see it on a regular basis. It may be flawed, but is usually directionally accurate. You can't improve the data if you're not

fluent in your current reality. Understanding your baseline and your starting point is important to achieving forward improvement.

Barbara: I think data is a tool that we need to use among the many other tools for improving hand hygiene compliance.

Julie: Yes, the data is not the end point; rather a vehicle to inform change.

Barbara: As you said, people don't come to work planning not to wash their hands, but often their perceptions are incorrect. That makes the data an important form of feedback. We had one department with a low compliance rate that didn't believe the data. Our infection preventionist literally sat next to the hand hygiene champions observing hand hygiene in their department, and their eyes were opened. They became aware that people weren't washing and disinfecting their hands and that the data was true. And that changed the culture significantly in their department. That's how data can improve quality, making it a great tool for change.

**Q: In the hand hygiene survey, one of the questions asked was about barriers to progress in hand hygiene compliance. Lack of an accountability model and feedback system were two barriers mentioned. People seem to want this type of monitoring data. In fact, 63 hospitals in the survey said they would like an accountability model and feedback system, indicating that the data makes a difference.**

Julie: You don't know what you don't know until you shine a light on it.

**Q: I find it interesting that you sat down with the most and least compliant groups and had them talk with one another. That's obviously one way of changing the culture. You also talked about gift cards and other methods of reward and positive reinforcement. What have you found to be the most successful ways to change culture?**

**There has to be a concerted, multi-pronged effort. You need administrative and leadership support. You need an educational program that provides opportunities for understanding the monitoring process from the outset.**

- Dr. Rekha Murthy

Rekha: I would say that it isn't any one thing. There has to be a concerted, multi-pronged effort. You need administrative and leadership support. You need an educational program that provides opportunities for understanding the monitoring process from the outset. You also need to provide engineering controls, even something as simple as making sure the PURELL® dispensers are actually filled and the paper towels are kept replenished. These issues came to the forefront as we started to see improvement—people would report difficulty in complying if PURELL and paper towels weren't available. You have to make sure you support the staff in achieving the goal and expectations that you're setting for them and that they set for themselves.

At the same time, measurement and feedback are critical, as are empowerment, motivation and accountability. In our program, we had everything in place except accountability and we reached 80 percent compliance. It wasn't until we put accountability measures in place that we reached and sustained compliance above 90 percent. So accountability makes a difference. But we couldn't hold people accountable until we had the fundamentals in place and until our approach became about changing the culture rather than about punishing people for non-compliance. It was about making every individual understand that we are doing everything possible so they don't have to think about whether or not they should wash their hands, and about using every method available to get there.

**Q: Administrative support has been mentioned as being key to compliance success. It seems that it may be a daunting task to obtain that support. Do you have any recommendations on how to achieve that?**

Julie: We had great experience with training a cadre of people with a "train the trainer" model, so we dispersed Hand Hygiene Champions throughout the organization. They were go-to resources that people could turn to. Also, showing data helps—not just the hand hygiene compliance rates, but the infection data as well. Too often we can drift into a mode of thinking that performance within benchmark guidelines is good enough. The culture of the organization can influence compliance greatly, whether aiming to reach 100 percent patient safety, achieving quality improvement, or affecting reimbursement rates for other reasons. I think the case can be made to administration, on the basis of patient safety and clinical outcomes, that improved hand hygiene directly impacts infection rates and cost. That's a very powerful message.

Julie: At Vanderbilt we were able to make those correlations between hand hygiene compliance and infection rates in geographic areas. It was a very powerful message that we can make a difference. I believe in aiming at the

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theoretical limits of what is possible, so let's aim at eliminating infections, achieving a zero infection rate.

Barbara: We also had great success in demonstrating that as our hand hygiene compliance rates increased, our infection rates decreased. And we also made the case that these weren't numbers on a page, they were real people. From the staff level to the board level, we presented the numbers in terms of how they affect people's lives. I think that's important, and engaging the board is critical in gathering support from leadership at all levels.

Debra: One of the things I've done is to utilize Peter Provonost, MD, and his processes, called "working the defects." All infections are "defects" and are to be investigated to review process issues that contributed to the defect; staff then disseminates information back to the units. The process involves taking the data out into the units, posting hand hygiene rates, unit infection rates and demonstrating the correlation between the two. When an infection occurs, I attempt, in real time, to conduct a mini root cause analysis, to determine how this patient got an infection. Engaging the line staff and bringing hand hygiene processes into the forefront can greatly affect the outcomes for others later.

Julie: At Vanderbilt, transparency of performance was an important character of safety culture. Notice of an infection required an event analysis in real time so that the unit itself became a learning system and started becoming competitive around the interval days between infections.

Debra: That's the thing—when staff and units become competitive, they start monitoring themselves, which is your essential goal: personal accountability.

### **Q: Can you provide a little more specific information on the correlation between non-compliance and infections? What type of infections did you see most often?**

Debra: We saw multiple correlations. Mainly, we saw a decrease in CAUTI (catheter-associated urinary tract infection) rates on units that had increased hand hygiene compliance. But the story is multifaceted. It's not as simple as when someone washes their hands, infections decrease. Decreases involve reeducating people on processes such as the management and maintenance of central lines and catheters, including nurse-driven protocols for early Foley catheter removal. It is the sum of engaging all these protocols, along with practicing proper hand hygiene, that helps decrease infection rates. At the same time, we did have more issues with CAUTI on units where compliance rates were lower, such as an increased incidence of *c.difficile* infection, so there is definitely a correlation between hand hygiene and infection.

**Engaging the line staff and bringing hand hygiene processes into the forefront can greatly affect the outcomes for others later.**

- Debra Johnson

Julie: I think part of this work is about changing consciousness. We are all creatures of habit, and the problem is that some of our habits are detrimental to a safety culture and to patient care. They're not intentional, but as Dr. Murthy mentioned, we need to change habits and make hand hygiene automatic. Seeing the cause and effect—at least the causal root—helps people think consciously about their practices and their environments in a whole different way through a lens of prevention and safety.

**Q: This sounds like a good place to wrap up today. We've been talking about developing good hand hygiene practices and making a routine of it. Would you say that's the big takeaway today?**

Alicia: It's about the culture.

Julie: That sounds deceptively simple. We need to make sure that there is also a message that changing culture involves a lot of hard work.

Rekha: And not just hard work to establish change, but also to sustain it. I think that's another component.

Julie: Yes, you're never done. Never.

Alicia: The study that we're conducting will supply another tool for bringing more data to light to support efforts toward service excellence and creating a safe culture for staff, patient and family experience.

## References

Patient Safety First...A California Partnership for Health. A statewide collaborative among the Hospital Council of Northern & Central California, Hospital Association of Southern California, Hospital Association of San Diego and Imperial Counties, National Health Foundation, CA Hospitals and WellPoint's California affiliated health plan.

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- Julie Morath

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