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HOSPITAL REVIEW

The positive ROI on CLABSI prevention interventions

Written by Pat Parks, MD, PhD, Medical Director, 3M Critical and Chronic Care Solutions Division

Reducing hospital acquired infections (HAIs) remains an ongoing patient safety battle for health systems.

It is estimated that [one in every four patients who contract a central line-associated bloodstream infection \(CLABSI\) dies](#), making it one of the deadliest HAIs. While estimates vary, [a typical cost for a single CLABSI is \\$45,000](#), making it one of the costliest infections. Despite the staggering statistics, these infections are largely preventable and more attention has been placed on reducing them in recent years. In fact, the [National and State Healthcare-Associated Infections Progress Report](#) showed CLABSI rates in the U.S. have decreased by 50 percent in the last decade. While the progress is encouraging and undoubtedly the result of a lot of hard work, more can be done to bring CLABSI rates closer to zero.

Preventing [bloodstream infections](#) doesn't just fall to the hands of frontline staff delivering direct patient care. Everyone in the health system, from the C-suite on down, has a critical role in implementing prevention interventions.

Historically, prevention interventions were thought to be too cost prohibitive. However, [a recent study published in JAMA Internal Medicine](#) found that properly executing quality improvement (QI) interventions could result in 57 percent fewer bloodstream infections on average. It also found that for every \$100,000 a health system invested on quality interventions, they were able to achieve a savings of \$315,000. These results show that investing in prevention interventions is worth the effort from both a patient care quality and financial perspective.

So what interventions reap the best quality improvement at the best value?

There is no magic bullet when it comes to infection prevention. Eliminating these complications cannot happen with a single initiative, process or technology. Successful CLABSI reduction requires a comprehensive approach incorporating three critical components: properly trained people, implementation of industry-leading guidelines and best practices, and use of the most clinically effective products and technology. Without all three components working together, your prevention efforts will fall short. Here's a look at the role you can play in helping your health system execute a successful prevention intervention.

Invest in effective & proven technology

When evaluating products, it's common to want to purchase those that best maintain your margins. But there is more to it than simply purchase price. Every product that enters a health system should be evaluated on the impact it can have on patient safety and infection prevention. Your portfolio of products should include ones that help reduce the risk of infection by protecting the IV line, as well as preventing skin injury and catheter movement. Explore published research to identify products that have been clinically proven to help reduce infection risks.

Take for example, IV securement dressings and the role they play in minimizing infections. Frequent dressing changes are disruptive to patient care, but [a study published in Critical Care Medicine](#) found that the risk of major catheter-related infection and CRBSI increased by more than three-fold after the second dressing disruption and by more than ten-fold if the final dressing was disrupted,

independently of other risk factors of infection. Some securement dressings have a transparent window designed to provide easy site visibility, which helps reduce the number of dressing changes and allows staff to identify potential complications more quickly. Selecting a chlorhexidine-impregnated dressing can further help reduce the risk of infections. These dressings help health systems comply with the CDC's recently updated [Guidelines for the Prevention of Intravascular Catheter-Related Infections](#), which specifically call for the use of chlorhexidine-impregnated dressings with an FDA-cleared label that specifies a clinical indication for reducing CRBSI or catheter-associated bloodstream infection (CABSI) to protect the insertion site of short-term, non-tunneled central venous catheters for patients aged 18 years and older.

It's also important to consider products' ease of use. Products that are easy for staff to administer and easy to access can help improve compliance and consistency. For instance, health systems that still use the "scrub-the-hub" method to clean IV access points must rely on staff to manually disinfect the IV port with an alcohol swab for 15 to 30 seconds. This leaves room for technique variation and human error. It also makes it hard for the facility to maintain and measure protocol compliance since there is no visible evidence that the IV access point has been disinfected. Selecting products that enable passive disinfection, in particular disinfecting port protectors, can help minimize human error and provide a visual indication so staff can be confident that the site has been disinfected.

Train & support your staff

Any investment in new technology is useless unless there is an equal emphasis on training your staff on how to properly use it. Change can be challenging and staff are often under strain when new technologies or processes are introduced. That's where you come in. Commit to training and educating staff on the products and processes, which can include one-on-one support or access to resources. This investment not only makes the transition easier, but in turn can help reduce infections.

Equally as important to adequate training is ensuring that the maintenance program – and your staff – are compliant with the latest industry standards and guidelines. With a number of different industry guidelines available, it can be difficult for health systems to stay up to date, maintain compliance and effectively implement the standards. For

that reason, the [Infusion Therapy Standards of Practice](#) recommend collaborating internally and externally to refine the process. Some device manufacturers serve as partners to health systems who can help staff better understand new industry standards and remove barriers to implementation. Training should occur during implementation, as well as be offered on an ongoing basis to maximize knowledge retention. [One health system](#) that partnered with 3M clinical specialists to implement and train staff on a disinfecting port protector system was able to increase staff compliance rates from 27 percent with "scrub-the-hub" to 80 percent during the intervention period.

Measure results

Data is critical to the success of a prevention program. The more you can measure, the more you can improve. Beyond just the mandatory reporting of CLABSI rates, it is important to monitor the success of the interventions. Meticulously and consistently tracking compliance rates can take time and resources. Manufacturers can help by offering customizable tools that monitor and analyze your department's or facility's progress. Once you have the results, share them with staff and celebrate successes. Recognizing staff members or units that work hard to prevent CLABSIs can help build morale and support your facility's goal of reaching zero CLABSIs.

While everyone is responsible for preventing HAIs, executive leadership is paramount to success. Leadership engagement and data-driven interventions with frequent feedback were cited as key components to helping prevent HAIs, according to [a study published in the American Journal of Infection Control](#). Support your clinical staff by providing them the best technology and training that align with industry standards and best practices. When you invest in prevention interventions, you can achieve the best ROI metrics you can strive for – improved patient outcomes and reduced costs.

About the Author

Pat Parks, MD, PhD is the medical director for 3M Critical and Chronic Care Solutions Division. He is also an Adjunct Associate Professor in the Department of Experimental and Clinical Pharmacology at the University of Minnesota. His passion and responsibilities include research and technologies related to [catheter related bloodstream infections](#) and wound healing. ■