EXECUTIVE INSIGHTS

HIGH-QUALITY CARE

PROTOCOLS TO PREVENT SSIs AND SSCs

Initiatives to Improve Outcomes

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PROTOCOLS TO PREVENT SSIs AND SSCs:
Initiatives to Improve Outcomes

Hospital-acquired conditions, such as surgical site infections (SSIs) and complications (SSCs), are a major burden to the U.S. health care system. With 60% of SSIs considered to be preventable, clinical protocols can make a critical difference in avoiding delayed discharges, costly readmissions, and delayed healing post-surgery. In this executive dialogue, nurse executives discuss how organizations can reduce the incidence of SSIs and SSCs through greater transparency, collaboration and enhanced clinician and patient education.

KEY TAKEAWAYS

1. Continued fatigue from the COVID-19 pandemic presents an ongoing challenge for hospitals and health systems. **Emphasis must be placed on adherence to handwashing and basic infection prevention techniques to prevent and manage SSIs and SSCs.**

2. Identifying risk factors for SSIs enables targeted education to prevent their occurrence. One solution is to **implement a pre-surgical preparation clinic to work closely with high-risk patients** in the weeks leading up to their procedure.

3. **Data is a strong influencer** and can significantly impact clinician behavior. Organizations should consider sharing individual performance data in advance of team meetings to facilitate a productive discussion.

4. Additional guidelines are needed to **identify when to delay surgery** for patients at high-risk for infections.

5. Gaps in patient education can result in post-discharge infections leading to readmissions. **Organizations should reassess their patient education** and develop easy to understand guidelines for wound care and conduct patient follow-up calls post-discharge.

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MODERATOR *(Terese Thrall, American Organization for Nurse Leadership):* **What are your challenges in preventing and managing surgical site infections?**

LISA SMITHGALL *(Ballad Health)*: Our biggest challenges have been the fatigue that came along with the pandemic and adhering to some basics like hand washing. We also have a very challenging patient population in our rural area. Many patients smoke and are obese and that puts them at greater risk for surgical site infections (SSIs) because they are not in the best of health.

ANGELA CARTER *(Vanderbilt Bedford Hospital)*: Sometimes it's difficult to nail down the source of the infection. There are many potential sources: the patient, the equipment used, etc.

KATRINA WOOD *(Med Center Health)*: Infections are labor intensive because we have to go back and look through all of the different processes and patient populations. And when patients go home and are in charge of caring for those wounds, infections are going to happen sometimes. We always take a deep dive to see what we could do differently, including patient education. Are we making those phone calls to the surgical patients to follow up on what they're doing at home?

TRACEY SMITHSON *(St. Dominic Hospital)*: It's been difficult to find peri-operative leaders and many of our knowledgeable nurse leaders are getting ready for retirement. Additionally, many medical residents are not choosing surgery. That's a difficult challenge.

Another issue is that many patients are being readmitted through the emergency department (ED). Many of those patients would not need to be readmitted if we had strategies in place to take care of those patients in their rural communities. Our facility has about 40 to 60 transfers a day that come in from other locations. Mississippi's rural: we have many patients that travel four to five hours to come to our hospital. That's a challenge as well.

ALLISON SILER *(Smith + Nephew)*: We hear similar stories from health care leaders everywhere we go. About 19% of unplanned readmissions are due to surgical site infections.

> **"About 19% of readmissions are due to surgical site infections."**
>
> — Allison Siler — Smith + Nephew

THRALL: What resources does your organization need to fight surgical site infections? How are they mobilized? What team or role is charged with addressing these challenges?

SMITHGALL: There are many factors to consider because patients are often doing all of their pre-surgery prep at home, arriving just in time for the surgical procedure. Did they bath with chlorhexidine gluconate (CHG)? Did the doctor's office properly prepare them for the procedure, and did they comply with the physician's instructions? When they leave, are they going home to a clean environment? Do they really understand how to take care of the incision?

In our health system, we've implemented a pre-surgical preparation clinic. Patients who have identified significant risk factors like smoking and obesity can come into the clinic a couple of weeks or even several months prior to surgery to prepare so they will be in optimal health for the procedure.

SMITHSON: If you survey patients about their discharge instructions, most don't retain them. That's a big issue. We've found education to be a factor in a few root cause analyses (RCAs). Patients were not knowledgeable about the dressing change protocol or what to do if there is moisture in the dressing. For us, it seems like common knowledge but it's not.

MICHELLE SHADE *(Orlando Health)*: Once we have an SSI, many people are involved in tracking the source to include direct caregivers and those present during the procedure. We make sure we include all of them during the RCA to create a safe environment for these discussions. Most of the time, we find it's a process problem as opposed to a people problem.

CARTER: Nursing, infection prevention, environmental services, pharmacy, and physician roles address these challenges. We have a task force that reviews readmissions. It looks at both patient and nurse education. For patients, the task force focuses on educating patients on tasks they should perform peri-operatively. For example, does the patient understand how to bathe with CHG soap? For maximum effectives, some patients don't know that you're not supposed to completely wash it off too soon. For clinicians, we look at the entire care process and develop tools and guidelines to help them. We include pharmacists in the discussion for antibiotic dosing.

"If you survey patients about their discharge instructions, most don't retain them. That's a big issue."

— Tracey Smithson — St. Dominic Hospital

SMITHGALL: Another consideration regarding antibiotics is the timing. We know nursing staff are probably pressed for time and they are administering the antibiotics, but are they getting them to patients in enough time before the procedure?

THRALL: Are you using data to identify risk factors for patients who are more likely to have infections? We discussed obesity and smoking. What other factors may make someone more likely to have an infection?

SHADE: Another risk factor is hemoglobin A1C. For diabetic patients with a high A1C, we may delay surgery until that number is better.

SILER: You all are screening for many factors of high-risk patients. As you have mentioned, body mass index (BMI) is an important factor. Obesity can increase the risk of an SSI up to seven times compared to a patient with a lower BMI. Another factor is peripheral vascular disease.

SMITHGALL: We also look at the general readiness of the patient for surgery. Following surgery, we're doing an enhanced recovery after surgery (ERAS) activity with almost all of our cases. It focuses in part on keeping patients as hydrated and nutritionally competent as possible before their procedure to prevent complications during the procedure that can then impact their pre-existing conditions.

SHADE: We're tracking a lot of these factors. We're also doing a great deal of work in our sterile processing department to ensure no complications occur. The focus is on pre-admission testing to ensure patients are in optimal health for surgery and on providing the best sterile instrumentation and environment.

THRALL: Are there special considerations for patients having C-sections? What risk factors do you track to identify patients more likely to have complications?

SMITHGALL: At our pre-surgical clinic, we see significantly obese pregnant women. We try to enroll them early in our clinic so they're in an optimal state when it is time for delivery. Obese patients are at greater risk of having a C-section, so that is a significant risk factor. Maternity patients usually have a short stay in the hospital. For C-section patients, we're really dependent upon good relationships between the patient and their obstetricians (OBs) for post-partum assessment and

identification of an infection. If they don't report it to us, we may not know about it.

THRALL: What happens at your organizations when a surgical site complication (SSC) occurs? Does a patient move to another location or another care team? How does it get reported?

WOOD: Our infection prevention team uses the National Healthcare Safety Network criteria and module to help monitor patients with SSCs. Once an infection has been identified, we look at key performance indicators to see what was done and what was not done. We don't move patients unless they need a different level of care. Certainly, if the patient has sepsis, they will need a higher level of acute care. Other than that, we're always looking to place the patient in the best area. If they're not in a post-surgical unit, they may need to be moved to one.

SMITHGALL: We do the same thing with an RCA and really look at the care team that's involved. We also don't necessarily move to a new room but look at staff who were involved and who performed the procedure. One of the things we consider is whether the infection comes after a procedure that we've had issues with or whether it's unique to the individual. We speak with the entire team to see if there was any breach in our normal practice or if something happened that may not have been recorded. We examine the specifics of the procedure, to trace what might have caused the infection.

SMITHSON: We have a great infection team who work closely with our intensivists and our hospitalist program. We don't conduct an RCA unless it was coded a complication and results in an increased length of stay. In those instances, the quality team would likely do an RCA. We review RCAs weekly with our chief medical officers (CMOs). We don't see many surgical site complications with bad outcomes, fortunately. Our protocols are pretty effective.

CARTER: We have a team that reviews infection control practices for cases and addresses each patient individually. If there's a trend, we see what changes need to be made as a system. We report cases up through our surgical committee that meets monthly and include surgeons, nurses and pharmacists. We discuss the cases and involve our infectious disease physician in the review process.

> **"It's … important to involve all of the stakeholders … so they understand the challenge and why changes need to be made."**
>
> — Lisa Smithgall — Ballad Health

SHADE: The only time we consider doing a room change is if we have two or more instances with similar organisms. And a room change isn't usually necessary. The issue probably comes down to hand washing or something to do with the people involved so we focus on the people involved in taking care of the patients to see if there's any connection. We conduct an RCA on every SSI to ensure there's nothing that we need to change from a process standpoint.

THRALL: When a complication occurs does it affect your service in any way?

SMITHGALL: Yes, it does. In our value based purchasing insurance contract, C-section rates, complications and infections affect our financial reimbursement. And there are many factors that impact these rates. A strong partnership with our OBs is important. But it is also dependent upon how many obstetrics patients come through our ED with no prenatal care or with other risk factors.

SILER: There's such a focus now on maternal mortality rates, with infection being the second highest leading factor, and up to 60% of SSIs are considered preventable. What are we doing, leading up to the point of discharge, to know that we can safely send those patients home and that their incision site is going to be safe and intact?

SMITHSON: Maternity mortality is a hot topic now. We are a country that takes pride in its health care and making it available to everyone. But we are not doing well when it comes to maternal health when compared with other countries. It's sad, especially among our minority populations in which maternal hemorrhaging and hypertension are more common. How do we address that? We are trying to improve and prevent these conditions through our strategic goals.

THRALL: We've talked about the importance of following protocols and guidelines. How do you achieve buy-in when a change in protocol is needed?

SMITHGALL: It's important to monitor patient results. If trends emerge, it's necessary to look at current processes and see what should be done differently. It's also important to involve all of the stakeholders who are involved in the process, so they understand the challenge and why changes need to be made. Without their support, the solution will not be effective.

It really is powerful when you show them their own data. Because when you show what happens in the literature, providers will say, "We have unique patients in our health system. Probably our patient population is sicker and more at risk than other patients."

SHADE: You need provide the why behind the numbers. We often hold pre-conferences with physicians to share their data and discuss evidence-based practice before we meet with the entire group. It's helpful and it leads to a better team discussion.

WOOD: Transparency is important. Historically, outcomes data was shared on a chart, and everyone would assume they were on the good end of the data. In the past 10 years, there's been a big push for transparency and collaboration. It's not a, "he said, she said," and it's not a penalty, but it is truly a provider's data. Let's share what we are doing together.

"Transparency is important. Historically, outcomes data was shared on a chart, and everyone would assume they were on the good end of the data."

— Katrina Wood — Med Center Health

SMITHSON: When improvement discussions take place among physicians, it can be effective. And again, data. We've seen significant change in physician behavior by sharing patient experience and infection data.

CARTER: Peer-to-peer conversations are very important. Even among nurses, we want to hear from other nurses.

THRALL: There's an adage that 80% of the result comes from 20% of the work. If you could only do one thing right now to prevent SSCs, what would it be?

WOOD: It would be to create and follow protocols on when to delay surgery among high-risk patients. Our CMO will be able to help us with that, setting guidelines and protocols and following through, because it will be a change in practice.

SHADE: We need to get back to basics. Our RCAs often come back to basic issues like handwashing or CHG bathing, whether in the hospital or

at home. It's the simple things that sometimes catch us.

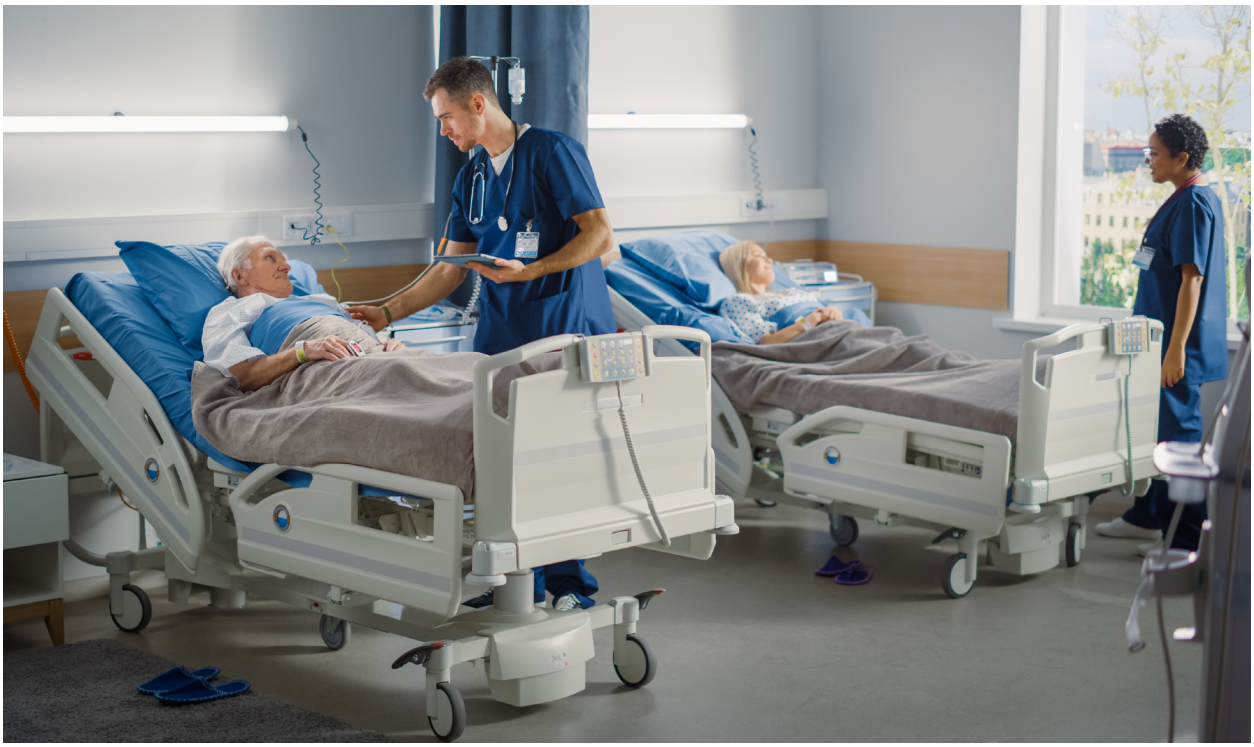
SMITHGALL: We recently held mandatory back-to-basics training for all of our clinical care providers that focused on hand hygiene and how to put on personal protective equipment. There's still an amazing amount of fatigue from the pandemic and some of our staff, including physicians, realized we needed to refocus. Next we need to develop patient education materials that are easy to understand. Our patients come to us from every surgical area, orthopedics, general surgery, and obstetrics, for example. How do the different physician practices prepare their patients and what materials do they provide? We might provide 15 pages of post-discharge instructions, but we need to provide something concise and simple on how patients can care for their incisions.

"We need to get back to basics. Our RCAs often come back to … handwashing or CHG bathing, whether in the hospital or at home."

— Michele Shade — Orlando Health – Health Central Hospital

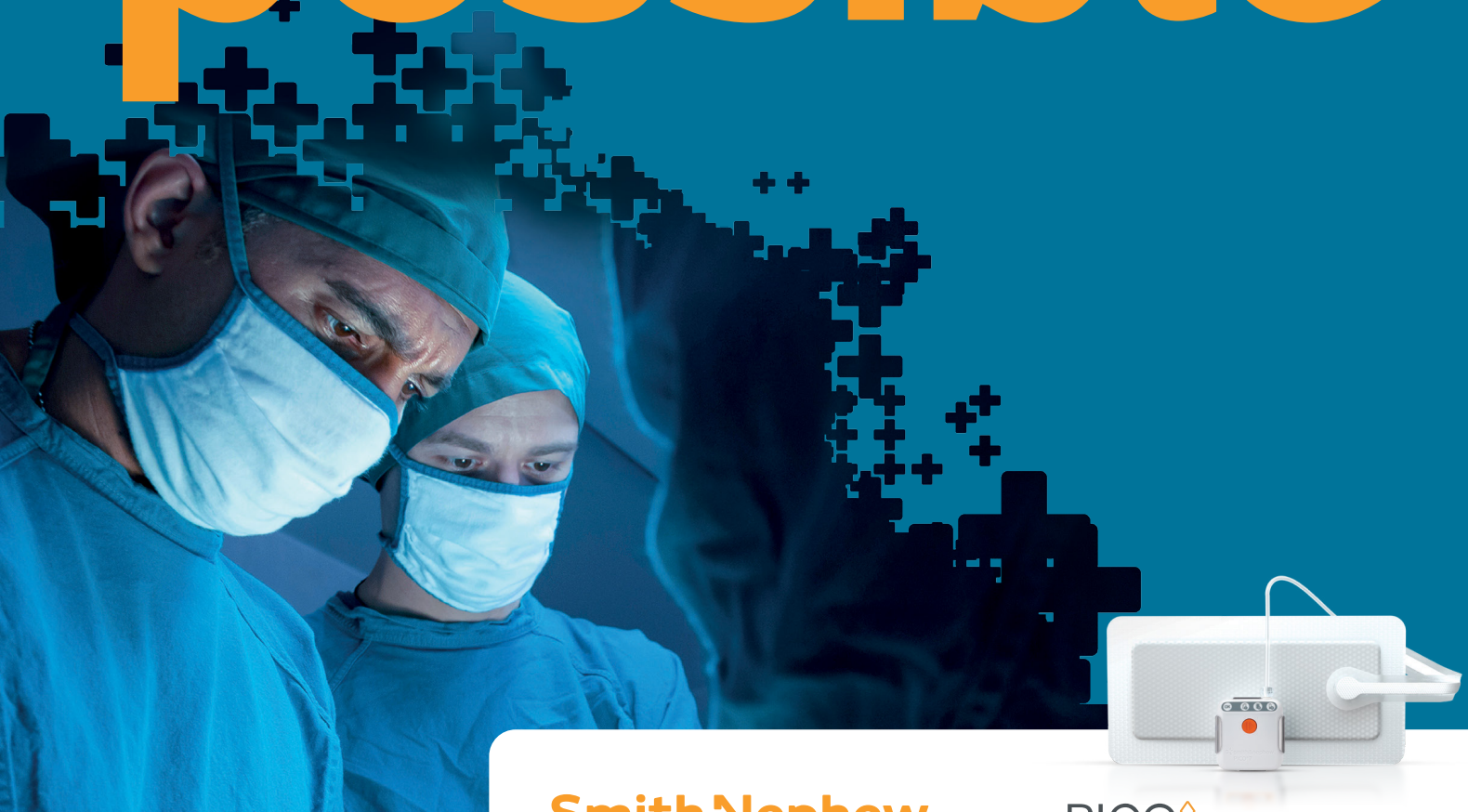
WOOD: We encourage family members to use their phones and video the nurse giving discharge instructions. Often, some of the information provided by the nurses may not be in the discharge instructions.

CARTER: Discharge instructions are so important. They are often automated and although we review them, the patients are sick and may not retain important information. They may or may not have a family member present. Follow-up calls are a good way to ask how the wound is healing and whether they are taking their medications. It's important to reinforce that. ●



Reduce the burden of surgical site complications?[1]

It's possible



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Single Use Negative Pressure Wound Therapy System

1. Saunders C, Nherera LM, Horner A, Trueman P. Single-Use negative-pressure wound therapy versus conventional dressings for closed surgical incisions: systematic literature review and meta-analysis. *BJS Open*. 2021;0(0):1–8.

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