

# Preventing surgical site infection

## Stopping infection requires effective discharge teaching.

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that of the healthcare team. Knier and colleagues, who conducted a prospective cohort study with 400 participants, determined that almost 20% of patients experienced adverse events, including healthcare-associated infections (HAIs) within 30 days after discharge, 6% of which “were deemed preventable and related to the quality of discharge teaching.” Because so many of these infections are preventable, prevention—including discharge instructions—must be addressed by all healthcare professionals who care for surgical patients.

### Adopt a diverse approach

Because of the complex causes of SSIs, their prevention requires a diverse approach. Begin your efforts at reducing SSIs by evaluating your organization’s written discharge instructions and identifying methods to deliver and reinforce patient teaching throughout the continuum of care. In addition, review available resources and technologies to create even more opportunities for the entire healthcare team to collaborate for successful discharge and recovery. (See *Engage patients with technology*.)

### Review discharge materials

Are your organization’s discharge instructions and patient educational materials easy to understand? To find out, you can use the Patient Education Materials Assessment Tool (PEMAT) to examine them for understandability and actionability. Understandability focuses on clarity, organization, layout, and the use of visual aids. Actionability requires

**MOST PATIENTS** comply with preoperative instructions, and the surgery usually is performed as planned without incident. However, the same effectiveness can’t be said for the discharge process. Many ambulatory surgical patients are discharged within hours of admission, leaving little time for proper patient education. Rather than focusing on opportunities for self-care education, surgical site infection (SSI) prevention strategies frequently center around medical interventions to reduce infection risk factors. Being discharged without critical self-

care instructions increases the risk for developing a preventable SSI. (See *SSI primer*.)

When a patient is ready for discharge, postoperative care is transitioned from the hospital staff to the patient and family. Because this process is task-oriented and primarily focuses on wound care, medication reconciliation, device management, and whether follow-up appointments have been made, actual readiness for discharge may be overlooked. Additionally, the patient and family perception of discharge readiness may differ from

## SSI primer

A surgical site infection (SSI) is defined as an infection of the incision or organ space that occurs within 30 days after surgery (90 days if it involves an implant). The Joint Commission estimates that in the United States about 500,000 SSIs develop yearly and that 40% to 60% are preventable.

In 1999, the Centers for Disease Control and Prevention classified SSIs based on infection severity and created guidelines (which were updated in 2017), emphasizing using the most current evidence-based strategies—parenteral antimicrobial prophylaxis, nonparenteral antimicrobial prophylaxis, glycemic control, normothermia, oxygenation, and antiseptic prophylaxis—to decrease SSI rates. Unfortunately, these guidelines don't include discharge instructions or how the responsibility for providing patient education applies to all members of the inter-professional healthcare team.

a clear patient action and incorporates tangible tools, such as a checklist. Then review the information from the perspective of the U.S. Department of Health and Human Services recommendations to ensure that the materials are written at a sixth-grade level and that each section is fewer than 50 words. These strategies can help your organization optimize its current patient education materials and guide development of new teaching resources.

### Use assessment tools

Patient readiness for discharge can be evaluated using instruments such as the Quality of Discharge Teaching Scale (QDTS) and the Readiness for Hospital Discharge Scale (RHDS). Both tools can help you and your team assess patients' perceptions of their educational preparation and readiness for discharge so you can address gaps in education. These tools also provide insight into common gaps, so education materials can be revised and future patient needs better anticipated. (See *Tools you can use*.)

The Discharge Process Acute Rehabilitation Transition (DePART) tool allows you to deliver education based on patient needs and readiness to learn throughout the entire hospital stay, rather than in the typical few hours leading up to discharge. This interprofessional approach to discharge planning maximizes patient, family, and

provider engagement. Knier and colleagues used the QDTS and the RHDS to demonstrate the DePART's effectiveness for improving patient satisfaction, readiness for discharge, and perceived quality of discharge.

The Martin Postoperative Discharge Screening Tool (MPOST) was designed to alert the multidisciplinary team to act and address any early signs of surgical complications before discharge. The tool incorporates variables such as routine vital signs; wound bleeding; genital, urinary, and GI system indicators; fluid balance; abnormal labs; pain level; activity expectations; mental status; and the ability to comply

with discharge instructions. Using this tool 90 minutes before discharge gives you an opportunity to notify the healthcare team of an unacceptable MPOST score so discharge plan modifications can be investigated. When this tool was used in a study focusing on preventing premature discharges to home, the investigators found a 380% reduction in 30-day readmissions resulting from postoperative complications.

### Make a call

A study of patient perceptions of the postoperative recovery process identified several common concerns, including postoperative pain, wound management, personal hygiene, exercise, and return to work expectations. The patients in the study also reported concern that they couldn't adequately retain discharge instructions because of forgetfulness caused by anesthesia. Costantino and colleagues determined that a simple intervention, such as a follow-up phone call, was effective in reducing readmission rates and provided an opportunity to address concerns that weren't

## Engage patients with technology

Technology provides an additional opportunity to engage patients and families in their care, improve symptom tracking, and enhance collaboration between patients and providers. Keep in mind that some patients will need training in the use of technology.

- In addition to paper discharge instructions, post materials online for easy access by patients and family members.
- Include photography to enhance communication. For example, give the patient a photo of the surgical site to establish a baseline of wound appearance at discharge. When a photo is combined with individualized wound care instructions, patients will feel more confident caring for their wounds and identifying and addressing concerns quickly.
- Offer secure online communication with the provider for timely and convenient follow-up.
- Suggest mobile apps to assist patients and families in self-care. These can include apps that feature medication reminders and allow patients to record vital signs and track pain severity, as well as patient portal apps that aid communication with providers.

## Tools you can use

Use these tools to assess your current patient education and discharge materials, develop new instructions, and determine patients' readiness for discharge.

Tool	Purpose
Patient Education Materials Assessment Tool (PEMAT) <ul style="list-style-type: none"> <li>• Understandability</li> <li>• Actionability</li> </ul>	Evaluate whether patients will be able to understand and act on discharge information <ul style="list-style-type: none"> <li>• Are the materials clear and organized?</li> <li>• Is the layout logical?</li> <li>• Do the materials include visual aids?</li> <li>• Is there a checklist?</li> </ul>
U.S. Department of Health and Human Services recommendations for discharge instructions	Ensure understandability <ul style="list-style-type: none"> <li>• Are materials written at an easy-to-read sixth-grade level?</li> <li>• Is each section fewer than 50 words?</li> </ul>
<ul style="list-style-type: none"> <li>• Quality of Discharge Teaching Scale</li> <li>• Readiness for Hospital Discharge Scale</li> <li>• Discharge Process Acute Rehabilitation Transition Tool</li> <li>• Martin Postoperative Discharge Screening Tool</li> </ul>	Enhance discharge outcomes

identified before discharge. Additional items to explore during the phone call include reviewing signs and symptoms of infection, confirming a follow-up appointment has been scheduled and prescriptions have been filled, asking whether the patient needs more assistance with activities of daily living than anticipated, and answering any other health-related questions.

When Constantino and colleagues included these additional items in their study examining the effect of postdischarge phone call follow-up on 30-day hospital readmissions, they identified reduced readmission rates and substantial overall cost savings. They also discovered a direct correlation between the follow-up calls and time elapsed since discharge—calls placed closer to the discharge date resulted in lower readmission rates. Those made in the first 24 to 48 hours after discharge were most effective in reducing readmission rates and calls placed on subsequent days—up to 14 days after discharge—were less effective.

### Reduce failed discharges

Addressing SSI-related readmissions requires proper delivery of postdischarge instructions and recognition by the entire health-care team that individualizing instructions is important to successful outcomes. Keep in mind that stress and emotions can limit a patient's ability to fully comprehend instructions when they're delivered only in the few hours before leaving the hospital or surgery center. And incorporate technology and other resources to engage patients and families in self-care after discharge.

All healthcare team members have an obligation to actively analyze systems that improve patient care and reduce SSIs. Evaluate education materials for understandability and actionability as well as adherence to health literacy guidelines. Developing and implementing an effective discharge plan that follows the patient throughout the perioperative process may provide the missing link for avoiding failed discharges. ★

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