



Taking Control of Infection Control

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In the last decade, one health care-related issue has frequented headlines, not only in medical and health-related journals, but also getting attention in major newspapers in North America and Europe. It's an issue that impacts the entire surgical team; an issue that is critical to the welfare of the patient. That issue: surgical site infections (SSIs).

According to the Association for Professionals in Infection Control and Epidemiology, Inc, there are an estimated 1.7 million hospital-acquired infections (HAIs) annually in the US, with approximately 99,000 of those resulting in death.⁸ Of that number, the CDC (Centers for Disease Control) estimates that there are as many as 500,000 SSIs annually in the US, resulting in a staggering price of more than a billion in overall healthcare costs and an additional 3.7 million days spent in the hospital. A study performed in December 2009 showed that patients infected with MRSA (methicillin-resistant *Staphylococcus aureus*) after surgery spent an additional three weeks in the hospital which added up to an additional \$60,000 per patient in care costs.⁵ In the past decade, committees and agencies have made committed efforts to improve infection control. Some groups even have been formed to monitor SSIs across the country and offer practitioners the tools they need to help reduce the amount of SSIs, as clinical studies have shown that they these infections are largely preventable.⁷

LEARNING OBJECTIVES

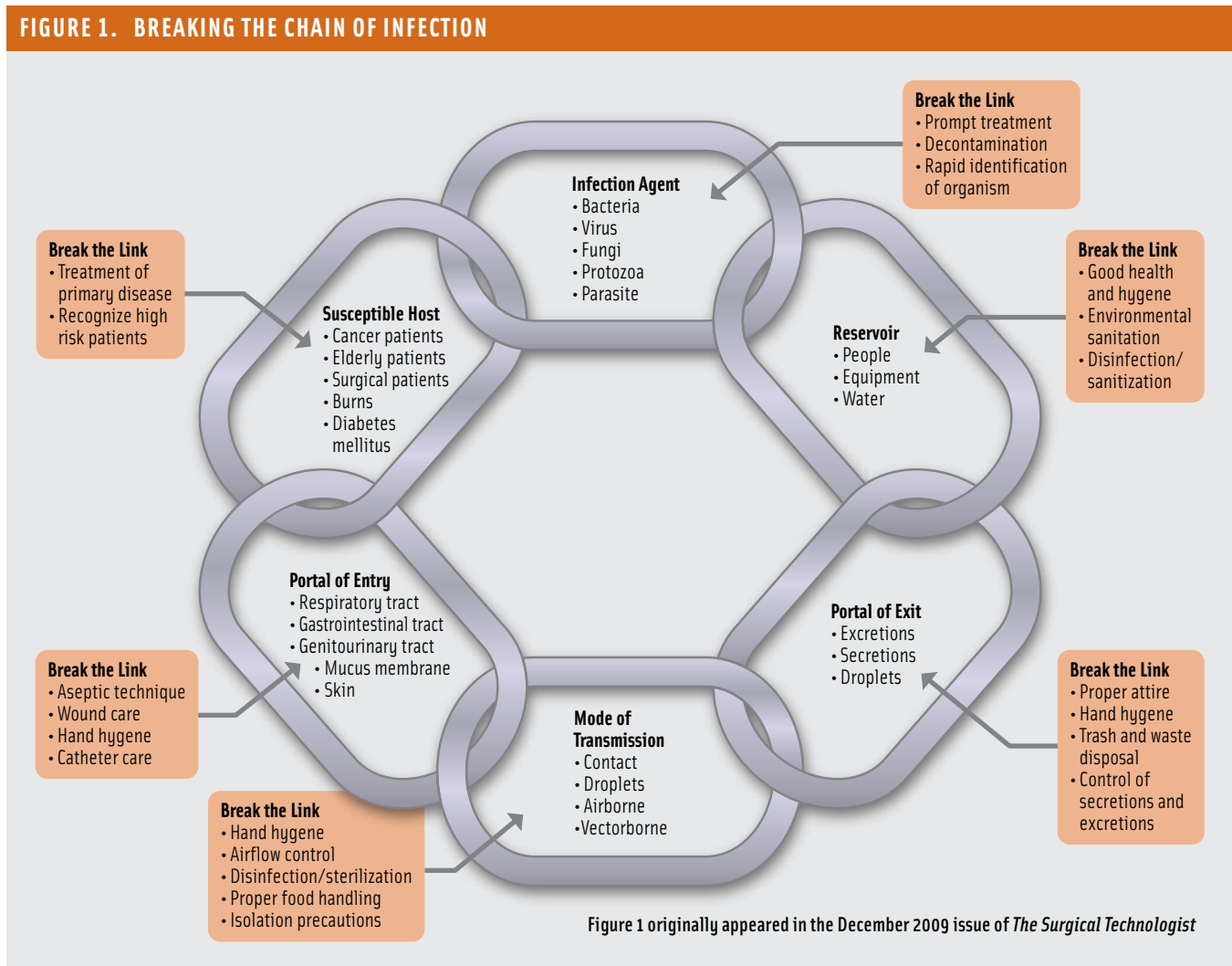
- ▲ Identify the leadership roles that are crucial in reducing SSIs at healthcare facilities
- ▲ Learn about the E3 Discipline and how it relates to SSIs
- ▲ Assess how data sharing can benefit your staff and improve patient safety
- ▲ Explore the options your team can use to increase collaboration among staff members
- ▲ Determine how communication can be an effective tool in reducing SSIs at your facility

These committees and agencies, as well as other long-standing healthcare organizations, have taken a proactive approach to studying and analyzing SSIs and HAIs in order to reduce the number of incidences on a yearly basis. A variety of organizations have made a call for actions and stepped forward to announce new initiatives and guidelines to assist healthcare facilities and practitioners in reducing SSIs. In 1999, the CDC issued its recommendations for reducing surgical site infections. Its detailed report covers everything from an overview of SSIs to how surgical attire and instruments to asepsis and operative characteristics, and surveillance methods can make a difference in reducing infection in the operating room.⁴ The CDC offers specific recommendations for every step of an operation including setup and post-op.

VHA, Inc, the national healthcare alliance, launched its national initiative in 2006 with its main focus on pre-

venting SSIs within the clinical setting. Ken Smithson, MD, and vice president of research at VHA said “Hospital acquired infections signal that less than optimum care is being provided and we’ve got to raise the bar. It’s the right thing to do for patients, and it has a significantly positive impact on a hospital’s bottom line.”⁷

More recently, 3M gathered with industry leaders and experts to form a call to action to help healthcare professionals and facilities combat SSIs. The call to action focuses on improving team work and communication so that surgical prevention can be reduced to improve patient safety.¹ This set of guidelines was formed this past October at the fourth annual Infection Prevention Leadership Summit (IPLS), which allowed professionals to share expertise and ideas that focused on one goal: “improving patient care through reducing SSIs.”³ They decided that three elements should be included when discussing and practicing safer



patient safety; to educate, empower, and engage all parties involved in surgical care.

THE E3 DISCIPLINE

As the healthcare community gathered for this conference, leaders and professionals concluded that three elements were needed to create the E3 discipline. They determined that these three aspects can greatly affect a team's ability to communicate and function collaboratively to reduce SSIs.

When staff members are engaged in their position, they care about the well-being of the patient, their team members and themselves.

Education is the first component of the E3 discipline model. It encourages all practitioners to attend and seek out more didactic courses than required and to pursue and earn certifications related to their position. The model also stresses that healthcare facilities should provide educational sessions so that staff members may be allowed to grow within their profession and expand their knowledge base which can lead to a safer surgical environment.

Healthcare institutions also should empower their staff by creating a culture of accountability. Empowering is the second element to the E3 discipline. Everyone in the surgical suite should harness the power they need to carry out their job duties and report anything that is not in the best interest of the patient. Staff members should feel that they can report any inappropriate behavior or issues that need improvement without the fear of retribution.

By engaging staff, healthcare institutions are creating a healthier environment for all involved in a patient's care. As the third element of the E3 discipline, staff members who are engaged in their job and workplace demonstrate a higher commitment to the patient, their team members and themselves. It also creates pride among individuals so that each one strives to perform to the best of their ability so that patient safety remains the number one priority.³

CRITICAL PRACTICES TO REDUCING HAIS

Heeding the call for setting effective and immediate practices for reducing HAIs, the IPLS discussed the different components it takes to build team work and collaboration needed to reduce incidences in patient safety. They found

A CALL-TO-ACTION CHECKLIST

Industry leaders gathered for the fourth Infection Prevention Leadership Summit (IPLS) in October 2011. They came up with questions that practitioners should ask regarding reducing SSIs and their workplace. This list is especially beneficial to hospital and OR settings and should be shared with everyone on your surgical team.

Questions to ask for all team members:

1. Are we having regular meetings with our cross-functional coworkers?
2. Do we utilize checklists to assure patient safety in a serious manner?
3. Are we sharing needs, concerns, opportunities and successes with each other?
4. What steps can we take to achieve better patient safety every operation?
5. Where and how can we improve?

Questions for team leaders:

1. Does our institution invest adequately in our employees to foster a culture of the three Es (education, empowerment, and engagement)?
2. Are our board members, executives and site managers modeling leadership behaviors necessary to reduce SSIs?
3. What more can we do to support our staffers in order to increase patient safety?
4. Do all surgical team members have access to shared data regarding patient safety and reducing SSIs?

The leadership at IPLS determined that the following collaborative opportunities at each healthcare facility could include:

- "Developing bundles of policies and procedures that go beyond required courses and certifications, creating an interdisciplinary SSI-focused governance structure with leaders representing the OR, Infection Control, Central Sterile Supply, and patients/caregivers.
- "Generating organizational best practices mandates for OR staff, surgical chiefs, infection preventionists, and other involved staff to meet regularly, beyond just immediate pre- or post-surgical procedures.
- "Universally adopting processes that educate, empower, and engage patients as part of the team.
- "Promoting the SSI challenge by organizations to their members and creation of a set of common principles highlighting collaboration to share as part of national meetings, through newsletters, websites, journal commentaries, or editorials."³

Figure 2. CDC Best Practices for Standard Precautions and Transmission-Based Precautions

COMPONENT	Standard Precautions (Every Patient)	Transmission Based Precautions (Isolation Patients) <i>*May vary based on facility. Know your facility's protocol!</i>
Hand hygiene	After touching blood, body fluids, secretions, excretions and contaminated items. Immediately after removing gloves and between patient contacts.	Same as SP
Gloves	For touching blood, body fluids, secretions, excretions and contaminated items. Use for touching mucous membranes and nonintact skin.	For <i>all contact</i> with a patient, patient's environment, and/or equipment in a patient's room. (Contact and droplet only.)
Gown	During procedures and patient-care activities when contact of clothing/exposed skin with blood/body fluids, secretions and excretions is anticipated.	For <i>all contact</i> with a patient, patient's environment, and/or equipment in a patient's room. (Contact and droplet only.)
Mask, eye protection (goggles), face shield	During procedures and patient-care activities likely to generate splashes or sprays of blood, body fluids and secretions. Especially during suctioning and endotracheal intubation.	Droplet: Mask with eye protection must be worn within three feet of the patient. Airborne: Respirator (N-95/PAPR) or surgical mask before entering a room. TB always requires a fit-tested respirator. Refer to your facility's requirement for other organisms such as varicella/disseminated zoster.
Patient-care equipment	Handle in a manner that prevents transfer of microorganisms to others and to the environment. Wear gloves if visibly contaminated and perform hand hygiene.	<i>All contact</i> with all equipment used on a patient or in a patient's room requires gown and gloves. <i>All</i> equipment must be disinfected before leaving the room. (Contact and droplet only.)
Environmental control	Develop procedures for routine care, cleaning, and disinfection of environmental surfaces – especially frequently-touched surfaces in patient-care areas. Standard cleaning with low-level disinfectants for noncritical items such as tables, Mayo, BP cuffs etc.	Organism-specific protocols are required (eg, TB, <i>Clostridium difficile</i>) for cleaning. TB requires an intermediate-level disinfectant. <i>Clostridium difficile</i> requires bleach.
Textiles and laundry	Handle in a manner that prevents the transfer of microorganisms to others and to the environment.	<i>All contact</i> with laundry/linen that contacted patient or was in a patient's room requires gown and gloves. (Contact and droplet only.)
Needles and other sharps	Do not recap, bend, break or hand-manipulate used needles. If recapping is required, use a one-handed scoop technique only. Use safety features when available and place used sharps in a puncture-resistant container.	Same as SP
Patient resuscitation	Use a mouthpiece, resuscitation bag or other ventilation devices to prevent contact.	Based on the situation, if time permits, wear gown and gloves. (Contact and droplet only.)

four areas that need to be regularly analyzed within a healthcare institution. Leadership, communication, collaboration, and sharing are key elements that need to be present to help a healthcare team create the most effective patient-safe environment.³ Leadership on all levels must be functional for the team to accomplish patient safety initiatives. VHA proposes that healthcare facilities take part in leadership programs where participants learn implementation and evaluation, so that they can change and improve the patient care culture within their team and facility.⁷

When leadership is missing, views of exceptionalism may surface as team members may feel they are above each other. Selfish mind frames not only takes the focus away from the patient, but can divide a team and create an environment of blame. Leaders who can enforce discipline if unethical conduct or inappropriate practice has taken place are critical when building a strong team that trusts and respects each other. Due to this, strong leadership at the departmental and management level may be one of the most important components in reducing the number of SSIs.³ These employees have the power to create and foster a positive, healthy environment and drive change if needed. They also have the power to eliminate negative behavior or practices. When these leaders are committed and focused on reducing SSIs, the entire surgical team benefits.

Communication and collaboration between team members

Figure 2 first appeared in the March 2011's *Surgical Technologist*

go hand in hand. Strong and effective communication can be linked to successful collaboration in the surgical suite. Respect also plays a crucial part in team work as members who respect each other will work harder for the patient and their team members, even when something goes wrong. Strong communication, whether formal or informal, creates a sense of unity among coworkers and that bond can keep the entire team engaged and focused on their main goal: patient safety.

A report that came out of the IPLS offered suggestions for creating effective communication and collaboration across team members. The suggestions included job shadowing, departmental open houses, briefing and debriefing meetings before/after each operation, monthly meetings to discuss surgical infection prevention, in-house educational sessions, and staff recognition.³ The belief is that these actions help acknowledge hard work and encourage employees to keep an open dialogue about what's working, what's not working, and possible solutions.

Industry leaders also felt employees should have access to data sharing. Sharing results and findings between leaders, staff members, and across departments is a way for the complete entity to improve communication and education. By sharing information, departments can form a focus on certain markers whether those may be actual numbers or a general decrease in SSIs. Charts and visuals should be kept and prepared so that all staff members are aware of a department's specific goal so they can view their department's progress. By sharing this information with staff members, leaders can create a unified and open environment so that all staff may have the opportunity to change the outcomes of patient care. With a clear measurement of progress, staffers are able to see the impact they are making on patient safety and, in return, take a sense of pride in their work and further unite their team. A risk index can also be used as surgical team members can learn how to gauge the risk of SSI infection on certain procedures. CDC has coordinated a couple of indexes based on specific variables and newer predictors have emerged to allow practitioners to continue to estimate the SSI risk and overcome obstacles that may present an infection, such as unsterile instruments.

MOVING FORWARD

There are many obstacles that continually need to be studied to help combat the number of SSIs. Superbugs, such as MRSA, and the increase in the number of patients electing for surgical procedures, raises awareness to how important

With a clear measurement of progress, staffers are able to see the affect they are making on patient safety and, in return, take a sense of pride in their work and further unite their team.

it is for healthcare facilities to reduce SSIs. Since the risk of SSIs always will be present, all surgical technologists should be committed to surgical safety every time they step into the operating room. By being vigilant and aware of what is taking place before, during, and after an operation, team members can take an active role in decreasing the number of SSIs that occur in their hospitals, thus reducing the overall number of SSIs worldwide.

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CE REFRESHER

What is the goal when implementing the principles of asepsis?

Explain why the term irreducible minimum is used in relation to the microbial count when discussing sterility.

List the three principles of asepsis.

List and describe the three available options if a break in sterile technique occurs.

List several patient factors that increase their risk of acquiring a surgical site infection (SSI).

Define the term disinfect and describe the three levels of disinfection.

Define the term sterile.

Describe the principles for storage of sterile items and outline the technique for storing, handling, and distributing sterile supplies.

**Pages 116 and 117 are for the reader's benefit only. Please do not submit these pages to AST. The CE exam follows on 119.*

Define the following terms related to infection control.

Term	Definition
1. Antiseptic	
2. Asepsis	
3. Bacteriocidal	
4. Bacteriostatic	
5. Bioburden	
6. Contamination	
7. Cross-contamination	
8. Decontamination	
9. Disinfectant	
10. Event related sterility	
11. Fomite	
12. Fungicide	
13. Infection	
14. Nosocomial	
15. Pathogen	
16. Resident flora	
17. Sepsis	
18. Spore	
19. Sporicidal	
20. Sterile	
21. Sterile technique	
22. Sterilization	
23. Strike through contamination	
24. Surgically clean	
25. Terminal disinfection	
26. Terminal sterilization	
27. Transient flora	
28. Vector	
29. Virucide	



**BE A
PART OF THE
GOOD NEWS**

Join your coworkers and peers in abiding by the AST Code of Ethics and obeying surgical conscience every time you go to the OR to help reduce SSIs and create an even safer environment for the most important element of the procedure: the patient.

AST Code of Ethics

1. To maintain the highest standards of professional conduct and patient care.
2. To hold in confidence, with respect to the patient's beliefs, all personal matters.
3. To respect and protect the patient's legal and moral rights to quality patient care.
4. To not knowingly cause injury or any injustice to those entrusted to our care.
5. To work with fellow technologists and other professional health groups to promote harmony and unity for better patient care.
6. To always follow the principles of asepsis.
7. To maintain a high degree of efficiency through continuing education.
8. To maintain and practice surgical technology willingly, with pride and dignity.
9. To report any unethical conduct or practice to the proper authority.
10. To adhere to the Code of Ethics at all times in relationship to all members of the healthcare team.²

Surgical Conscience

Creating and maintaining a sterile environment dates back to Biblical times and in modern times, the safety of the patient never has been greater. Patient safety is a driving force behind sterile technique. Reducing the number of SSIs is one of the greatest missions of the surgical team. The surgical technologist plays a huge role in preventing SSIs as they should not only monitor their surgical precautions, but their team members' as well. Adherence to asepsis principles is a crucial skill of the surgical technologist. Surgical conscience should be taken with the highest level of commitment. Every surgical technologist should uphold the highest level of honesty and moral integrity to deliver the highest quality of patient care. Surgical conscience is the belief that there is a responsibility toward the patient and oneself to be consistent, accurate, and safe.⁶



Test Your Knowledge

Think quick: The goal of asepsis is _____.

Do you know the answer? Test your knowledge on the basics of infection control with the entire CE refresher available ONLY on our website. Visit <http://www.ast.org/publications/journal.aspx> and click on CE Refresher to review the principles of asepsis, what the term sterile means and refers to, what microbial barriers must have to be used for sterilization purposes, and more.

This refresher is not a comprehensive review and should be used only for general review of infection control.

> Find the answers to the quick refresher (on pages 116 and 117) online along with the entire infection control refresher. Visit the publications section on our website and click on Journal. Look for the "Definition Answers" link on the current Journal page.

Refresh Online

Need or want more general refresher sections related to the Journal CE articles? Then log in to our Journal archives. *You must be an AST member to access the archives.* Just log in on our home page and when your account information comes up, search for Journal Archives and click on February 2012. There you will find a refresher dedicated to microbiology.

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You will be awarded continuing education (CE) credits toward your recertification after reading the designated article and completing the test with a score of 70% or better. If you do not pass the test, it will be returned along with your payment.

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- The CDC estimates that there are as many as _____ SSIs each year.
 - 650,000
 - 550,000
 - 500,000
 - 1,000,000
- The first component of the E3 discipline is _____.
 - Empowerment
 - Education
 - Energy
 - Engagement
- IPLS came to the conclusion that a combination of elements is crucial to reducing the number of SSIs at healthcare facilities. They do NOT include _____.
 - Leadership
 - Communication
 - Collaboration
 - Social activities
- _____ is a great tool to help staff members see where their facility and department stands in the fight against SSIs.
 - Data sharing
 - Newsletters
 - Facebook posts
 - Team work
- Surgical conscience is the belief that there is a responsibility toward the _____ to be consistent, accurate, and safe.
 - Oneself
 - Patient
 - Both a and b
 - Neither a or b
- In the AST Code of Ethics, rule number six states _____.
 - To hold in confidence, with respect to the patient's beliefs, all personal matters.
 - To report any unethical conduct or practice to the proper authority.
 - To not knowingly cause injury or any injustice to those entrusted to our care.
 - To always follow the principles of asepsis.
- Healthcare institutions should empower their staff by creating a(n) _____.
 - Culture of accountability
 - Respectful environment
 - Open-minded atmosphere
 - Positive workplace
- Strong and effective communication can be linked to successful _____ in the surgical suite.
 - Team work
 - Collaboration
 - Surgery
 - Practices
- Examples such as job shadowing, departmental open houses, briefing and debriefing meetings can help create a(n) _____ atmosphere among team members.
 - Effective
 - Happy
 - Successful
 - None of the above
- When staff members are _____ in their position, they care about the well-being of the patient, their team members and themselves.
 - Energetic
 - Enthused
 - Engaged
 - Satisfied

TAKING CONTROL OF INFECTION CONTROL 339 March 2012 1 CE credit

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Mark one box next to each number. Only one correct or best answer can be selected for each question.