Surgical Site Infection Surveillance in Ambulatory Surgical Facilities
Why survey?

• Many surgical site infections (SSI) may not require readmission.

• Presently, there is a great deal of heterogeneity and a lack of standardization of postdischarge healthcare-associated infection surveillance data in ambulatory surgical facilities (ASFs).

• The Centers for Medicare and Medicaid Services (CMS) currently proposes measures and data submission relating to events occurring between January 1, 2013, and June 30, 2013, for the calendar year 2014 payment.
Surveillance Criteria

• CMS stipulates ASF compliance with generally accepted standards or national guidelines.

• The Centers for Disease Control and Prevention (CDC) surveillance criteria for the identification of SSIs are a current standard of SSI definitions used for surveillance purposes.

• Currently, several efforts are under way that are aimed at overcoming the lack of standardized or validated methods to identify SSIs that result from procedures performed at ASFs but that are diagnosed in hospitals or other healthcare settings.
Pennsylvania’s Medical Care Availability and Reduction of Error (Mcare) Act requires ASFs to report serious events in the Pennsylvania Patient Safety Reporting System (PA-PSRS).

- Serious Events are occurrences or situations involving the clinical care of a patient in a medical facility that either
  - results in death, or
  - compromises patient safety and results in an unanticipated injury requiring the delivery of additional healthcare services to the patient.
- If an SSI is deemed by the facility to be a Serious Event, it should be reported to PA-PSRS.

The ASF may want to formalize a standard SSI criteria based on national standards, document the case investigations, and specify how infections are classified and reported to PA-PSRS.
A **superficial incisional SSI** must meet one of the following criteria:

Infection occurs within 30 days after the operative procedure,

And,

Involves only skin and subcutaneous tissue of the incision,

And,

Patient has at least one of the following:

a. Purulent drainage from the superficial incision
b. Organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision
c. At least one of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness, or heat, and the superficial incision is deliberately opened by surgeon and is culture-positive or not cultured (a culture-negative finding does not meet this criterion)
d. Diagnosis of superficial incisional SSI by the surgeon or attending physician

**NOTE:** There are two specific types of superficial incisional SSIs:

1. **Superficial incisional primary (SIP)** – a superficial incisional SSI that is identified in the primary incision in a patient who has had an operation with one or more incisions (e.g., cesarean section incision, chest incision for a chest and donor site incision [CBGB])
2. **Superficial incisional secondary (SIS)** – a superficial incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (e.g., donor site [leg] incision for CBGB)
A deep incisional SSI must meet one of the following criteria:
Infection occurs within 30 days after the operative procedure if no implant is left in place or within one year if implant is in place and the infection appears to be related to the operative procedure,
And,
Involves deep soft tissues (e.g., fascial and muscle layers) of the incision,
And,
Patient has at least one of the following:

a. Purulent drainage from the deep incision but not from the organ/space component of the surgical site
b. A deep incision spontaneously dehisces or is deliberately opened by a surgeon and is culture-positive or not cultured and the patient has at least one of the following signs or symptoms: fever (>38°C) or localized pain or tenderness (a culture-negative finding does not meet this criterion)
c. An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination
d. Diagnosis of a deep incisional SSI by a surgeon or attending physician

NOTE: There are two specific types of deep incisional SSIs:
1. Deep incisional primary (DIP) – a deep incisional SSI that is identified in a primary incision in a patient that has had an operation with one or more incisions (e.g., cesarean section incision, chest incision for CBGB)
2. Deep incisional secondary (DIS) – a deep incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (e.g., donor site [leg] incision for CBGB)
CDC Organ Space SSI Criteria

An **organ/space SSI** must meet one of the following criteria:

Infection occurs within 30 days after the operative procedure if no implant is left in place or within one year if implant is in place and the infection appears to be related to the operative procedure,

And,

Infection involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure,

And,

Patient has at least one of the following:

And,

Patient has at least one of the following:

a. Purulent drainage from a drain that is placed through a stab wound into the organ/space
b. Organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space
c. An abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination
d. Diagnosis of an organ/space SSI by a surgeon or attending physician
CMS Statements—Surveillance

• Activities should be conducted in accordance with recognized infection control surveillance practices, such as, for example, those used by CDC’s National Healthcare Safety Network (NHSN).

• Monitoring includes follow-up with patients after discharge in order to gather evidence about whether they have developed an infection associated with their stay in the ASF.
CMS Survey Question—Surveillance

• “Does the ASF have a system to actively identify infections that may have been related to procedures performed at the ASF?”
  – The ASF sends e-mails to patients after discharge.
  – The ASF follows up with the primary care physician after discharge.
  – The ASF relies on the physician performing the procedure to obtain this information at the follow-up visit after discharge and report it to the ASF.
  – The patient is admitted to a hospital as a result of infection.
Methods of Postdischarge Surveillance

• Wide variation in methods and statistical tools
• Patient follow-up and tracking is difficult especially if >30 days postprocedure
• Baseline data absent or difficult to obtain
• Criteria and definitions may not always be aligned with surveillance systems in ASFs
• Can be either passive or active
  – CMS specifies “active”
Methods of Postdischarge Surveillance

• ASFs may wish to make attempts to actively gather information related to alleged infections that happen postdischarge.

• Potential data sources include:
  – Physicians as informants
  – Facilities as informants
  – Patients as informants
  – Integrated surveillance

• Once cases are identified, NHSN criteria for SSIs can be applied to investigate, rule out, or classify infection.
Physicians as Informants

- Involves contacting the physician who performed the procedure, the patient’s primary care physician, or both for the purpose of answering a survey about the patient.
- Usually done by postal mail or e-mail.
- May involve multiple attempts.
- Can include contact attempt records (certified mail receipts, maintaining a “sent” folder that is backed up).
- ASF has little control over response rate once a reasonable attempt has been made to obtain data.

Analyzing, Educating and Collaborating for Patient Safety
Facilities as Informants

- Involves setting up an agreement with all of the facilities that may receive your patients if they are admitted for alleged infection as a result of a procedure performed at your ASF
- Mostly useful as an adjunct to another surveillance activity
- Difficult to ensure all potential cases are identified
- ASF has little or no control over response rate
Patients as Informants

• Involves contacting the patient for the purpose of answering a survey about the potential presence of infection at the surgery site

• Usually done by postal mail or e-mail (whichever the patient prefers)

• May involve multiple attempts

• Can include contact attempt records (certified mail receipts, maintaining a “sent” folder that is backed up)

• ASF has little control over response rate once a reasonable attempt has been made to obtain data
Considering the Patient as Informant

- Questionnaire must be simple and specific:
  - A postdischarge surveillance questionnaire consisting of only the items “pain,” “swelling,” and “diagnosis of surgical site infection by your physician” has been effective in a study of 599 patients in Germany.
  - If the patient answers yes to any of the items, a follow-up phone call is made to assess more thoroughly using CDC SSI criteria, and specific antibiotic treatment information is collected.
  - Questionnaires were sent 10 days after discharge.
Considering the Patient as Informant

– A postdischarge surveillance questionnaire consisting of only the response of “antibiotic use” at four to six weeks postdischarge has been effective in a study of 290 patients in Australia.

– If the patient answers yes, a follow-up phone call is made to the patient’s physician in order to assess the specific antibiotic treatment information and if the antibiotic was ordered to treat an SSI.
Hybrid Surveillance

- Physician questionnaire
- Patient questionnaire
- Follow-up phone calls
- Formal facility agreements
  - May facilitate the most complete surveillance data acquisition
  - Labor intensive
Surveillance Integrated with Home Care

• Home care coordinator is assigned to and follows patients.
• If signs of infection are identified using CDC criteria during follow-up visits, a wound care nurse is consulted and performs a home visit.
• Treatment is initiated by the wound care nurse using evidence-based wound care interventions.
• Physician is involved to collaborate during treatment and for local or systemic antibiotic treatment if needed.
Integration with Home Care

Potential benefits:

• Reduction of the financial impact of SSIs through early detection
• Timely and comprehensive data collection
• Supportive of best practices in wound management
• Better patient outcomes
Documenting Surveillance Activity

• “Is there supporting documentation confirming this tracking activity?”
  – Can range from simple to complex
  – Manual or electronic
  – Organization is the key
  – Leadership “buy in” is essential
  – Be mindful of privacy issues
Generating SSI Rates

• From the postdischarge surveillance criteria
  – Create a line list—patients with SSI (I)
    • Include useful demographics
    • Deidentify and code if necessary
  – Collection of procedural volume (P)

• Infection rate calculation for SSI (CDC):

\[ \frac{I}{P} \times 100 = \text{infection rate} \]
Measurement of Performance

• Compare current rate to historic rate
  – Surgeon-specific rates
  – Procedure-specific rates

• Rates provide an indicator of incidence, prevalence, and severity of problems in an area

• Track quality of service line

• Measure intervention success
Integration of Infection Control Data

- Form a multidisciplinary infection control committee (ICC)

1. Senior management recognizes ICC and its scope through a statement of authority.
2. Send ICC minutes up to senior management.
3. Integrate ICC data into the ASF’s quality assessment and performance improvement (QAPI)/patient safety committee (CMS requirement), with action plans for immediate correction.
4. Post results of activities for staff to see and respond to, and elicit comments.
Infection Control Program Design Goals

• Decrease infection rate
• Data driven:
  – Rates are drivers
  – Design interventions that are evidence-based, and break chain of infection
• Improve quality, rearrange the cheese
  – Cheaper to do it right the first time
  – Patient satisfaction
  – Physician satisfaction
  – Safer care
• Design systems that meet goals and maintain workflow
Tying It All Together

• Surveillance
  – Identifies the trends—points out a direction
  – Measures success (or failure)
• Root-cause analysis
  – Examines failure
  – Gets to the root of the problem
• Intervention
• Document activities
Surveillance and Reporting Notifiable Diseases

- "Does the ASF have a policy/procedure in place to comply with state notifiable disease reporting requirements?"
  - Formal written agreement with lab or labs that test for the ASF—lab reports
  - Formal written agreement with physicians that perform procedures at the ASF—doc reports
  - Formal written agreement stipulated data is fed back to ASF by doc and/or lab—ASF reports
Let’s Review

• Define what is meant by surveillance criteria.
  – Nationally recognized criteria for the classification of SSI
  – CDC NHSN

• Compare and contrast various surveillance methodologies.
  – Physicians as informants
  – Patients as informants
  – Facilities as informants
  – Hybrid
Let’s Review

Describe methods to comply with the CMS documentation requirement pertaining to tracking of infection surveillance activities.

– Contact/e-mail/postal records
– Case forms
– Line lists
Let’s Review

• Provide examples of how to integrate infection data into the individual ASFs quality improvement program.
  – Infection control reports included in minutes of QAPI committee/patient safety committee
  – Establishment of an ICC that reports up through patient safety committee

• Explain methods that comply with state notifiable disease and infection reporting requirements.
  – Agreements with those who report and a policy that outlines how it happens
References


References


References


Questions and Answers