SSI surveillance: What's new, what's next and what is over the horizon

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Glossary of terms

- BSI-bloodstream infections
- CA-BSI-catheter associated bloodstream infections
- HAI-healthcare associated infection
- HCW-Healthcare worker
- NNIS-National nosocomial infection surveillance system
- NHSN-new NNIS or National healthcare surveillance network
- SENIC-study on the efficacy nosocomial infections
- SSI-surgical site infection
- UTI-urinary tract infection
- VAP-ventilator associated infection
Objectives

- Review basics of surveillance
- Review definition changes for NHSN
- Discuss impact of post discharge surveillance
- Identify opportunities using electronic surveillance and claims data
- Review new trends in measurement

Surveillance

- “the ongoing, systematic collection, analysis, interpretation, and dissemination of data regarding a health-related event for use in public health action to reduce morbidity and mortality and to improve health”

Surveillance

To watch
Implies systematic observation of the occurrence and distribution of a specific disease process
• Routine collection of data
• Utilize standardized definitions for cases
• Utilize common denominator populations
• Allows for assessment and comparison of rates
  – e.g. surgical site infection rates in patients having a procedure – SSI per 100 procedures

Purpose of surveillance

• Define background “endemic rates” of nosocomial events
• Identify increases in adverse event rates above the endemic level
• Identify specific risks for nosocomial events
• Inform hospital personnel of the risks of the care or procedures they provide
THE EFFICACY OF INFECTION SURVEILLANCE AND CONTROL PROGRAMS IN PREVENTING NOSOCOMIAL INFECTIONS IN US HOSPITALS

ROBERT W. HALEY,1,4 DAVID H. CULVER,3 JOHN W. WHITE,1 W. MEADE MORGAN,1 T. GRACE EMORI,1 VAN P. MUNN1 AND THOMAS M. Hooton2,8

• Infection surveillance and control programs strongly associated with:
  – Reduced UTI, SSI, pneumonia, BSI
  – HAI with IC programs: ↓ 32%
  – HAI without HAI programs ↑ 18%

• Essential components of program:
  – Organized surveillance
  – 1 ICP per 250 beds
  – Trained MD
  – System to report SSI rates to surgeons

Haley RW et al Am J Epidemiol
1985;121:182-205

Is SSI surveillance efficacious?

<table>
<thead>
<tr>
<th>Hospital</th>
<th>SSI Rate</th>
<th>1st 6 months</th>
<th>2nd 6 months</th>
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<tr>
<td>clean</td>
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<tr>
<td>overall</td>
<td>8.4</td>
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<tr>
<td>clean</td>
<td>3.6</td>
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<tr>
<td>overall</td>
<td>5.7</td>
<td>3.3</td>
<td></td>
</tr>
</tbody>
</table>

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Pick Your Definition: Surgical Site Infection

- Wound with purulent drainage
- Wound with culture + drainage
- Red, warm, or draining wound requiring opening by an MD
- Physician diagnosis
- Radiologic presence of abscess
SSI Surveillance

- CDC definition – Modified in 2012
- Defined denominator populations based on ICD-9-CM procedure codes (this will change in 2014—ICD10 procedure codes)
- Standardized, field-tested
- Utilizes:
  - Clinical data
  - Microbiologic data
  - Radiologic data

An SSI

- Event is associated with an operative procedure that is closed primarily but can include drains or other devices. The closure must include the entire length of the incision otherwise do not include in numerator or denominator.
- Categorize by depth of incision and infection.
- Risk factor information should be included
  - Gender, age, duration of procedure, emergency, anesthesia type, wound class, ASA, endoscopic procedures.
  - Procedure specific risk factors
    - C section: duration of labor, Ht, Wt or BMI
    - Spinal infusion: DM, # of levels; approach
    - TKR; THR: revision, partial
Monitoring

- 30 days post-operatively for most procedures
- 90 days monitoring for the following procedures
  - Breast
  - THR/TKR
  - CABG (B and C)
  - Ventricular Shunt
  - Laminectomy with fusion
  - Craniotomy
  - Pacemaker
  - Fx
  - Peripheral bypass graft procedures
  - Herniorrhaphy

CDC NHSN SSI material: July 2013 revisions

Wound Class

**Clean**
Operation where no inflammation encountered
Respiratory, alimentary, genital, urinary tracts *not* entered
Operation following non-penetrating (blunt) trauma
Primarily closed with no open drainage

**Clean - Contaminated**
Operation entering respiratory, alimentary, genital, or urinary tracts
No evidence of infection, no major break in technique, no unusual contamination encountered
Operation involving biliary tract, appendix, vagina, and oropharynx

**Contaminated**
Operation following open, fresh, accidental wounds
Operation with major breaks in sterile technique (e.g., open cardiac massage) or gross spillage from GI tract
Includes operation where acute, non-purulent inflammation encountered

**Dirty**
Operation involving old traumatic wounds with retained devitalized tissue, or existing clinical infection or perforated viscosa
Definition suggests the organisms causing post-op infection were present before the operation

NHSN Manual Ch16, p 11-12

CDC NHSN SSI material: July 2013 revisions

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Superficial Incisional SSI

- Events occurs within 30 days after the surgical procedure AND
- Involves only skin and subcutaneous tissue of incision AND
- At least one of the following
  - Purulent drainage from the superficial incision
  - Organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision
  - At least 1 of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness, or heat, AND superficial incision is deliberately opened by surgeon and is culture-positive or not cultured.
  - Diagnosis of a superficial incisional SSI by the surgeon or attending physician

Organism/Space Organism(s) or surgical site infection

An organism SSI involves any part of the body, excluding the skin incision, fascia, or muscle layers that is opened or manipulated during the operative procedure. Specific sites are assigned to organism SSI to identify the location of the infection. Listed below in reporting instructions are the specific sites that must be used to differentiate organism SSI. An example is appendectomy with subsequent multidrug therapy, which would be reported as an organism SSI as the intraperitoneal specific site (SSIS and Syn).
Deep Incisional SSI

- Events occurs within 30 days (or 90 days) after the surgical procedure AND
- Involves deep tissues of incision (i.e., fascial and muscle layers) AND
  - Purulent drainage from deep incision
  - Spontaneously dehisces or opened by surgeon and organisms isolated or not cultured AND
    - fever (>38°C)
    - Localized pain or tenderness
    - An abscess or other evidence of infection; direct examination, during reoperation, or by histopathologic or radiologic examination
- Diagnosis made by surgeon or attending physician

Organ Space SSI

- Events occurs within 30 days (or 90 days) after the surgical procedure AND
- Involves parts of the body manipulated during the procedure but not fascia and incision AND
  - Purulent drainage from deep incision
  - Organisms isolated from tissue/fluids in organ space
  - An abscess or other evidence of infection; direct examination, during reoperation, or by histopathologic or radiologic examination
- Diagnosis made by surgeon or attending physician
- Meets criteria for specific organ space infections (Table 4 of NHSN manual, 9-14)
Surveillance: Changes

- Healthcare associated infections
- Problem pathogens: MDROs, influenza, *C. difficile*, RSV etc....
- Process measures: compliance with influenza vaccine, hand hygiene, isolation, surgical prophylaxis recommendations
- Syndromes that are epidemiologically significant
- Epidemiologically significant events in healthcare workers (HCW)

How valid are definitions: lessons from SSI

<table>
<thead>
<tr>
<th></th>
<th>Gold std. (n=)</th>
<th>Nurses (%)</th>
<th>CI&lt;sub&gt;95 (%)&lt;/sub&gt;</th>
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<tbody>
<tr>
<td>General surgery</td>
<td>50</td>
<td>94</td>
<td>83-98</td>
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<tr>
<td>Trauma surgery</td>
<td>50</td>
<td>82</td>
<td>71-93</td>
</tr>
<tr>
<td>Overall</td>
<td>100</td>
<td>88</td>
<td>82-94</td>
</tr>
<tr>
<td>Run in period</td>
<td>16</td>
<td>63</td>
<td>36-85</td>
</tr>
<tr>
<td>Post intervention</td>
<td>34</td>
<td>91</td>
<td>76-98</td>
</tr>
</tbody>
</table>

Cardo, ICHE 1993

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Agreement among IP’s: Europe

CI95 (%)

Intra specialty agreement for SSI diagnosis: 0.04 (0.00-0.62)-0.65 (0.45-0.82)
Intra specialty agreement for depth: 0.05 (0.00-0.10)-0.5 (0.45-0.55)

Intra specialty agreement among surgeons: 0.24 (0.14-0.42)
Intra specialty agreement among IPs: 0.41 (0.28-0.61)

After reading SSI definitions
Intra specialty agreement among surgeons: 0.09
Intra specialty agreement among IPs: 0.57
Depth no change

Birgand etal Plos One 2013:8;1-9

An apparent excess of SSI: analyses to evaluate false-positive diagnoses

– The infection preventionist at a 200-bed general community hospital reported that a neurosurgeon’s SSI rate was excessive
– When the surgeon proposed to terminate his practice, the hospital administrator asked consultants to perform an independent investigation
– False-positive diagnoses
  • Serous, serosanguineous, or bloody wound drainage, or hematoma at the wound site; wound separation or mild wound erythema or, in two instances, simply the recovery of staphylococcal species from a wound swab culture

Ehrenkranz N. ICHE 1995

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# TABLE 1

**HOST ATTRIBUTES AT OPERATION**

<table>
<thead>
<tr>
<th>Patient Characteristics, Preoperative Status, and Preparation</th>
<th>Controls</th>
<th>Documented OSI</th>
<th>Presumptive OSI</th>
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<tbody>
<tr>
<td>Total number</td>
<td>18</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Male sex</td>
<td>10</td>
<td>2</td>
<td>4</td>
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<tr>
<td>Caucasian</td>
<td>18</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Medicare payment</td>
<td>12</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Private insurance</td>
<td>16</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Remote site infection</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Serum albumin &lt;35g/dL</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Body mass index (kg)/height (m)</td>
<td>6</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Concurrent systemic corticosteroid Rx</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>&gt;1 Significant medical condition*</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

**Operation indication:**

- Spinal stenosis
- Spinal disease
- Progressive paralysis
- Repeat operation
- Clean classification
- Skin hair shaved
- Antimicrobial shower/bath
- Myelogram before operation
- Current nonsteroidal anti-inflammatory drugs
- Current anticoagulant drug
- Abnormal skin near planned incision
- Antibiotic prophylaxis with 2 hrs of incision
- ASA >3

*Significant medical conditions: diabetes, bleeding diathesis, current cancer, current cancer therapy, current alcoholism, current severe liver disease, paralysis.

Abbreviations: OSI, operating room perioperative assessment scores.

Ehrenkranz NJ. *ICHE* 1995

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# TABLE 3

**THERAPEUTIC CONSEQUENCES OF OSI DIAGNOSES: DURATION OF HOSPITALIZATION AND USE OF INTRAVENOUS ANTIMICROBIALS**

<table>
<thead>
<tr>
<th>Median Duration</th>
<th>Controls</th>
<th>Documented OSI</th>
<th>Presumptive OSI</th>
<th>Documented OSI Versus Controls</th>
<th>Presumptive OSI Versus Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days of hospitalization (range)</td>
<td>7 (5-9) 27 (10-33)</td>
<td>9.5 (4-17)</td>
<td>0.001</td>
<td>0.04</td>
<td></td>
</tr>
<tr>
<td>Days of administration of intravenous antimicrobial (range)</td>
<td>0 (0-6) 9 (1-43)</td>
<td>1.5 (0-9)</td>
<td>0.001</td>
<td>0.005</td>
<td></td>
</tr>
</tbody>
</table>

Ehrenkranz NJ. *ICHE* 1995
### Case Finding

- Follow cases as identified systematically—ICD-9 or ICD-10 codes
- Reporting mechanisms
  - Surgeons and OR Staff
  - Surgical units and rounds
  - ID consults
- Microbiology reports
- Readmissions/Re-operations
- Pharmacy records for ABX use
- Post-discharge surveillance

### Surveillance Methods

- 100% Chart Review and Wound Examination
- 100% Chart Review
- Targeted SSI Surveillance: 100% Chart Review for Selected Procedures
- Targeted SSI Surveillance: 100% Chart Review of Patients at High Risk
- Selective Chart Review
- Postdischarge Surveillance
- Electronic Data Surveillance
Challenges

• 100% Chart Review and Wound Examination
  – Includes daily wound examination
  – Not practical & feasible in large hospitals
• 100% Chart Review
  – The ICP identified 84% of SSIs noted by the hospital epidemiologist
  – Quality depends on completeness of medical records & on the reviewer’s experience

Targeted SSI Surveillance: 100% Chart Review for Selected Procedures

– Target only clean operative procedures
  ▪ Approximately 70% of operative procedures and relatively low SSI risk
  ▪ the SENIC project; SSI surveillance of contaminated or dirty procedures reduced SSI rates as effectively as did SSI surveillance of clean or clean-contaminated procedures
– Target surveillance to high-volume procedures at an institution
– Target surveillance to high-risk of morbidity and mortality procedures
  ▪ Craniotomy or coronary artery bypass procedures vs. hernia repair
– Target surveillance to high-risk of infection rates
Surveillance by microbiology reports

- Not all infections are cultured
- Not all cultures are handled properly
- Certain etiologic agents are difficult to culture, i.e. viruses
- The presence of microbial agents is not equivalent to an infection

Post Discharge Surveillance

- Majority of SSIs occurs in the outpatient setting
  - 45–72% of SSIs were detected after discharge from the hospital
- Post discharge SSI
  - More outpatient visits, readmissions, emergency department visits, and use of home health services, increased costs ($5,155 for the 8 weeks after discharge, vs $1,773 for in-hospital SSI)
- The cost and time required to perform post discharge surveillance may discourage many infection prevention and control programs from instituting such systems
- Integrated electronic medical records will likely to identify SSIs after hospital discharge
Methods to perform post-discharge SSI surveillance

- 501 randomly selected surgeries
- 38% contacted by telephone
- 89% reported no complications
- 1% reported no complications and had documented SSI while in hospital
- 9.5% had symptoms: pus, pain, fever
- 89% of patients with symptoms had seen an MD and no MDs reported an SSI
- Required 15 minutes per patient

Manian ICH 1993

Finding SSIs: post-discharge

Sands, JID 1996
Why use electronic data?

- **Potential advantages**
  - ↑ accuracy/objectivity/consistency/timeliness
  - Broaden scope of surveillance
  - ↓ burden of data collection, more time for prevention

- **Data:** numerator (events), denominator (risk adjustment)

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SSI rates
routine vs enhanced surveillance

SSI detection: Claims data


SSI detection: Can you just look in one hospital?

- Retrospective cohort 1/1/2006-31/12/2009
- 91,121 THR and 121,640 TKR were identified with SSI rates of 2.3% (2214) and 2.0% (2465), respectively
- 17% of SSI missed is surveillance was limited to one hospital
- Hospital ranking affected in 61% of cases

SSI detection: Can you just look in one hospital?


Reporting the Results

- Make comparisons (external or internal) only when
  - surveillance intensity, collection methods, definitions and populations are the same or similar
- User-friendly
  - accurate and interpretable and short
  - use graphs whenever possible
- Stimulate performance improvement
  - give recommendations
Equations

- **SSI rate**

\[
\text{SSI Rate} = \frac{\text{No. SSI in patients during specified time}}{\text{No. operations during specified time}} \times 100
\]

- For NHSN surveillance, the denominator needs to include the procedures with the International Classification of Diseases, Ninth Edition (ICD-9) procedure codes

- Various SSI rates
  - Service-specific incidence (i.e. neurosurgery)
  - Surgeon-specific incidence
  - Procedure-specific incidence (i.e. cholecystectomy)
  - Risk-specific incidence

- The surgeon-specific incidence and procedure-specific incidence more closely reflect the true SSI incidence

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**TABLE 3. Comparison of Surgical Site Infection (SSI) Rates in the Hospitals of the International Nosocomial Infection Control Consortium (INICC) and the US Centers for Disease Control and Prevention National Healthcare Safety Network (CDC-NHIS)**

<table>
<thead>
<tr>
<th>CODE</th>
<th>Procedure name</th>
<th>INICC 2005-2010, SSI rate, %</th>
<th>INICC 2005-2010, SSI rate risk categories, %</th>
<th>CDC-NHIS 2006-2008, SSI rate pooled risk categories, %</th>
<th>RR</th>
<th>95% CI</th>
<th>P</th>
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</thead>
<tbody>
<tr>
<td>RAA</td>
<td>Abdominal anastomosis repair</td>
<td>7.7</td>
<td>3.2</td>
<td>2.4</td>
<td>0.33-17.40</td>
<td>0.000</td>
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<tr>
<td>AMP</td>
<td>Limb amputation</td>
<td>2.7</td>
<td>2.3</td>
<td>1.18</td>
<td>0.80-1.74</td>
<td>0.000</td>
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<tr>
<td>APPY</td>
<td>Appendectomy</td>
<td>3.9</td>
<td>1.4</td>
<td>2.03</td>
<td>1.83-2.59</td>
<td>0.000</td>
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<tr>
<td>BILI</td>
<td>Bile duct, liver or pancreatic surgery</td>
<td>9.2</td>
<td>9.0</td>
<td>0.03</td>
<td>0.70-1.22</td>
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<td>BIST</td>
<td>Breast surgery</td>
<td>1.7</td>
<td>2.3</td>
<td>0.07</td>
<td>0.35-1.06</td>
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<tr>
<td>CIRG</td>
<td>Coronary bypass with and without incision</td>
<td>4.3</td>
<td>2.6</td>
<td>1.52</td>
<td>1.44-1.62</td>
<td>0.001</td>
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<td>CARD</td>
<td>Cardiac surgery</td>
<td>4.6</td>
<td>1.3</td>
<td>4.32</td>
<td>3.81-4.88</td>
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<td>CSHL</td>
<td>Cholecystectomy</td>
<td>0.2</td>
<td>0.6</td>
<td>0.94</td>
<td>0.10-5.01</td>
<td>0.001</td>
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<td>COLO</td>
<td>Coloanastomosis</td>
<td>4.4</td>
<td>5.6</td>
<td>1.69</td>
<td>1.52-1.87</td>
<td>0.001</td>
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<td>CRAN</td>
<td>Craniofacial surgery</td>
<td>4.4</td>
<td>2.6</td>
<td>1.69</td>
<td>1.46-1.96</td>
<td>0.001</td>
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<td>CSFC</td>
<td>Cranial fracture</td>
<td>0.7</td>
<td>1.8</td>
<td>0.39</td>
<td>0.14-0.65</td>
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<tr>
<td>PUSN</td>
<td>Splenic fracture</td>
<td>3.2</td>
<td>1.5</td>
<td>2.10</td>
<td>1.48-3.00</td>
<td>0.001</td>
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<td>PK</td>
<td>Open reduction of fracture</td>
<td>4.2</td>
<td>1.7</td>
<td>2.44</td>
<td>1.82-3.20</td>
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<td>TAST</td>
<td>Gastrointestinal surgery</td>
<td>5.5</td>
<td>2.3</td>
<td>2.41</td>
<td>1.82-5.19</td>
<td>0.001</td>
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<td>HDR</td>
<td>Herniorrhaphy</td>
<td>1.8</td>
<td>2.2</td>
<td>0.78</td>
<td>0.49-1.26</td>
<td>0.001</td>
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<td>HPRO</td>
<td>Hip prosthesis</td>
<td>2.8</td>
<td>2.6</td>
<td>1.06</td>
<td>1.40-1.27</td>
<td>0.001</td>
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<td>HIST</td>
<td>Abdominal hysterectomy</td>
<td>2.7</td>
<td>1.6</td>
<td>1.66</td>
<td>1.36-2.03</td>
<td>0.001</td>
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<td>HPHI</td>
<td>Knee prosthesis</td>
<td>1.6</td>
<td>0.9</td>
<td>1.84</td>
<td>1.56-2.18</td>
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<td>LAM</td>
<td>Laminectomy</td>
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<td>1.0</td>
<td>1.67</td>
<td>1.33-2.09</td>
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<td>NECK</td>
<td>Neck surgery</td>
<td>1.7</td>
<td>1.5</td>
<td>1.17</td>
<td>0.86-1.61</td>
<td>0.814</td>
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<td>NEPI</td>
<td>Kidney surgery</td>
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<td>1.5</td>
<td>2.12</td>
<td>1.87-4.18</td>
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<td>NWY</td>
<td>Nerve surgery</td>
<td>2.1</td>
<td>1.2</td>
<td>1.82</td>
<td>0.97-3.43</td>
<td>0.098</td>
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<td>PBW</td>
<td>Peripheral vascular bypass surgery</td>
<td>2.3</td>
<td>6.7</td>
<td>0.37</td>
<td>0.28-0.49</td>
<td>0.001</td>
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<td>PIC</td>
<td>Rectal surgery</td>
<td>2.3</td>
<td>4.0</td>
<td>0.52</td>
<td>0.36-0.72</td>
<td>0.000</td>
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<td>S</td>
<td>Small bowel surgery</td>
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<td>6.1</td>
<td>0.91</td>
<td>0.62-1.34</td>
<td>0.057</td>
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<td>SPLI</td>
<td>Spinal surgery</td>
<td>3.6</td>
<td>2.3</td>
<td>2.19</td>
<td>0.93-5.10</td>
<td>0.006</td>
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<td>STOM</td>
<td>Thoracic surgery</td>
<td>6.1</td>
<td>1.1</td>
<td>5.20</td>
<td>3.59-6.64</td>
<td>0.001</td>
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</tr>
<tr>
<td>THYR</td>
<td>Thyroid and parathyroid surgery</td>
<td>0.3</td>
<td>0.3</td>
<td>1.27</td>
<td>0.13-12.18</td>
<td>0.966</td>
<td></td>
</tr>
<tr>
<td>VIYIS</td>
<td>Vaginal hysterectomy</td>
<td>2.0</td>
<td>0.6</td>
<td>2.03</td>
<td>1.52-5.32</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>VISH</td>
<td>Vaginal delivery</td>
<td>12.9</td>
<td>5.6</td>
<td>2.20</td>
<td>1.86-2.69</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>XCAP</td>
<td>Exploratory abdominal surgery</td>
<td>4.1</td>
<td>2.0</td>
<td>2.05</td>
<td>1.64-2.55</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>ALL</td>
<td>All</td>
<td>2.9</td>
<td>2.0</td>
<td>1.45</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
</tbody>
</table>

Notes: CI, confidence interval; RR, relative risk.


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SIR

- SIR is a ratio of observed events divided by the number of expected events. SIR = O/E
- Similar to other standardized ratios such as the standardized mortality ratio (SMR).
- Expected values calculated from local, national or international benchmarks.
- The SIR “standardizes” values across units, procedures, hospitals, etc in order to compare performance.
- SIR provides not only direction of performance but also magnitude. It does not give your relation to “0”.

Basics: General SIR Interpretation

- SIR < 1 means performance was better than expected based on benchmark.
- SIR = 1 means performance was the same as expected based on benchmark.
- SIR > 1 means performance was worse than expected based on benchmark.
Basics: Significance

- SIR allows you to calculate statistical significance to see if your performance is “significantly” better or worse. Since SIR = 1 is rare, numbers close to one are often adjudicated using statistics to see if there was a more significant difference than expected.
- Obtained by confidence intervals or p-value.

Challenges in a HealthSystem

![Challenges in a HealthSystem graph]

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Johns Hopkins Medicine
Challenges in a HealthSystem

JHHS Standardized Infection Ratio (SIR)
SSI - CY11Q4-CY12Q3

- **SIR > 1.00**: Performance worse than expected based on national experience in comparison units.
- **SIR = 1.00**: Performance meeting the expected based on national experience in comparison units.
- **SIR < 1.00**: Performance better than expected based on national experience in comparison units.

January 2, 2014
In Practice: JHM Mission Objectives
Scoring

<table>
<thead>
<tr>
<th>Stretch Target</th>
<th>Target</th>
<th>Threshold</th>
<th>Did Not Meet</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIR = &lt; 0.75</td>
<td>SIR = 0.75 – 0.99</td>
<td>SIR = 1.00 – 1.25</td>
<td>SIR &gt; 1.25</td>
</tr>
<tr>
<td>3 pts</td>
<td>2pts</td>
<td>1pt</td>
<td>0pts</td>
</tr>
</tbody>
</table>

JHM Scoring matches with scoring for other indicators (Core measures, Hand Hygiene, Patient Satisfaction, etc).

Conclusions

• Although methods of case-finding are hard to choose, the infection control team should focus on patients or procedures at high risk of infection, if their resources are limited
• Collecting data and calculating rates are useless if epidemiology and surgical staff do not use the data to prevent SSI
• Infection prevention and control personnel must collaborate closely with surgical teams and utilize available guidelines and recommendations to implement, monitor, and improve compliance with SSI prevention measures
As healthcare delivery shifts to the outpatient setting, numerous aspects of SSI surveillance must change, because many factors that influence the risk of SSI also will change.

Surveillance methods that worked well in the past and were supported by well-designed studies may no longer be efficacious.