Surgical Infection Monitoring and Prevention Initiative (SIMPI): Experiences from Sierra Leon

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Concurrent Education Session:
Surgical Site Infection Monitoring and Prevention in Low- and Middle-income Settings
Friday, June 14, 2019
1:30 PM – 2:30 PM

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Presentation Overview

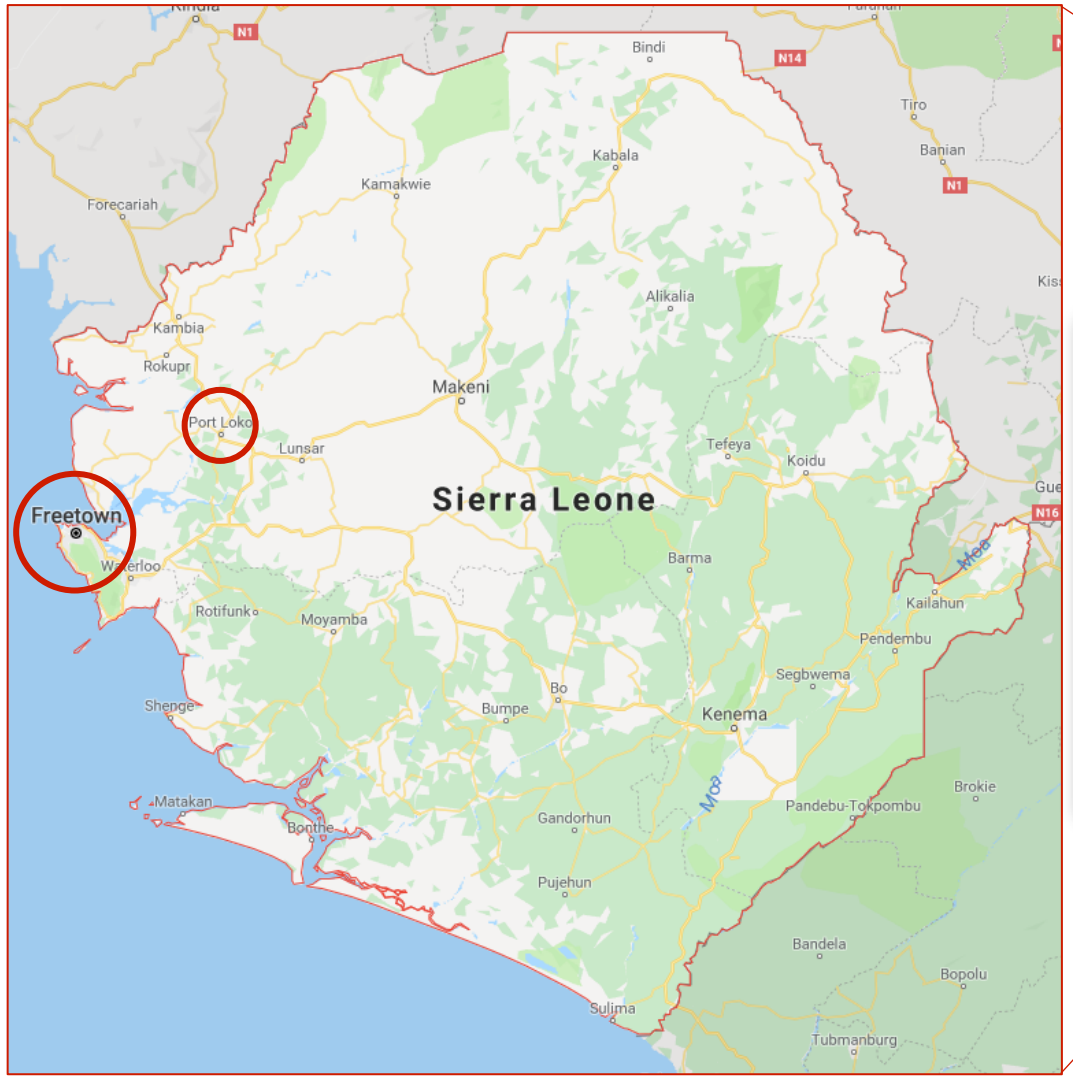
Christiana Conteh | June 14, 2019

Presentation Goal: Discuss the Sierra Leone SSI surveillance initiative as an illustrative example of responsible establishment of SSI surveillance with limited resources.

Today, I hope to briefly

1. Provide an overview of the SSI Surveillance Initiative in Sierra Leone
2. Describe the HAI/SSI surveillance context for Sierra Leone
3. Describe surveillance methods
4. Estimate resource requirements
5. Discuss expected outputs and information use

Sierra Leone



Freetown

3 facilities

- **Public, Military**
- **Public, General**
- **Public, Maternity**

Port Loco

1 facility

- **Public, General**

Surveillance Settings

- Post-surgical inpatient surveillance in acute care health facilities with a provision for post-discharge surveillance, if feasible.
- Minimum Pilot Site Criteria:
  1. Public Facility
  2. Established IPC Program (IPC Focal Person)
  3. Engaged facility administration and surgical teams
  4. Represent a variety of implementation settings:
     - Patient populations
     - Surgical Volume
     - Administrative Structure

SSI Surveillance in Sierra Leone: A Situational Analysis

- Lack of standardized patient charting / record keeping
  - Limits use of existing patient data for surveillance
- Strong Infection Prevention and Control Focal Persons
  - Capacity for SSI surveillance limited by other important duties
- Strong surgical teams
  - Recognition of infections following surgery as important
  - Recognition that risk of infection can be reduced
- Recognition of IPC improvements
  - Staff able to identify relevant IPC areas that may need improvement

Photo: Post-discharge Maternity Patient Records

System Objectives

1. Provide an economical methodology for the systematic collection, analysis, and presentation of actionable information on the occurrence of SSIs in Sierra Leone
2. Provide a platform for measuring the impact of infection prevention strategies on SSI rates
3. Provide a safer surgical context for patients

Photo: Entrance to Port Loco Operating Theatre

Case Definition

A patient within 30 days of the surgical procedure with the following observed or reported:

A purulent (pus) discharge in, or coming from, the wound (including evidence of an abscess)

OR

Evidence of fever with painful, spreading erythema surrounding the surgical site

OR

Any reopening of the surgical wound

Surveillance Methods

- Surveillance / Surgical Population: C-section and inguinal hernia repair
  - Low-baseline infection risk
  - High Volume
- Data collection using a combined surgical safety checklist and surveillance form
  - Demographics
  - Clinical Checks: Before Anesthesia
  - Clinical Checks: Before Incision
  - Clinical Checks: After Wound Closure
  - Infection Surveillance

"NAME OF FACILITY"
SURGICAL SAFETY AND SURVEILLANCE

Date: DD/MM/YYYY

Patient Name: _____ **Patient ID**: _____

Sex: □ Female □ Male **Age**: □ Infant (< 1 year) □ Child (1-17) □ Adult (18-64) □ Elderly (65+)

Telephone: _____ Surgeon/Team: _____

Procedure: _____ □ Elective □ Emergent

[Before Anesthesia - Checks]

□ Patient identity □ Patient allergies □ Surfaces and Environment cleaned
□ Procedure and Site □ Consent signed □ Instrument sterility verified

[Before Incision - Checks]

□ Team Introductions
Hand Hygiene Performed: □ Yes □ No/Inadequate
□ antimicrobial soap and water □ alcohol-based hand rub

□ Patient Identity
□ {Item}
Antibiotic Prophylaxis: □ Yes □ No □ NA
□ {Agent 1} □ {Agent 2} □ {Agent 3} □ Other

□ {Item}
Patient skin preparation: □ chlorhexidine □ betadine □ other

[After Wound Closure – Before Patient Leaves]

□ Instrument, sponge, needle counts
Procedure Longer than Expected: □ No □ Yes
Equipment Problems: □ No □ Yes: _____
Supply Problems: □ No □ Yes: _____
Wound Class: □ Clean □ Contaminated □ Dirty

[Infection Surveillance]

	First Check	Discharge	Final Check
Days after procedure			
Purulent Drainage / Abscess	□ Yes □ No	□ Yes □ No	□ Yes □ No
Wound Reopened	□ Yes □ No	□ Yes □ No	□ Yes □ No
Fever & Increased Wound Pain	□ Yes □ No	□ Yes □ No	□ Yes □ No
Fever & Wound Redness	□ Yes □ No	□ Yes □ No	□ Yes □ No
Fever & Wound Swelling	□ Yes □ No	□ Yes □ No	□ Yes □ No
Fever & Wound Warmth	□ Yes □ No	□ Yes □ No	□ Yes □ No
Infection was Diagnosed:	□ Yes □ No	□ Yes □ No	□ Yes □ No
Infection Depth: □ Superficial Only □ Deep/Organ Space □ Unknown			

Surveillance Methods

- Case Finding (in-patient)
  - Wound Assessments (Day 3 and at Discharge)
  - Verbal review with clinical and surgical teams
- Case Finding (post-discharge)
  - Telephone interview
  - Optional

All patients contacted at least once (on or around day 30) and interviewed to determine if the case definition has been met

Resource Requirements

- Established IPC Program with the willingness and ability to take action based on surveillance results
- Engaged facility administration and surgical teams willing to consider surveillance findings and lead evidence-based changes to prevent surgical infection
- Ensured availability of estimated resources required for SSI surveillance activities for at least 1-year:
  - Surgical Team Member to start Surgical Safety Checklist & Surveillance Form
    < 5 min per patient
  - Patient Care Staff to complete wound checks (2 checks per patient)
    ~5 min per check
  - SSI Surveillance Coordination / IPC focal person (Data Management)
    Dedicated 8 hours / 1 day per week
  - Post-discharge telephone interview
    Average 20 minutes per patient/interview

Data and Information Use

Expected Data Outputs

- SSI Rate over time and by:
  - Select demographics
- Rate of adherence to surgical safety checklist items
- Count of procedures performed by:
  - Select demographics
  - Surgical Teams
- Length of stay following procedures
- Discharge disposition rates (maternal and infant in-patient death)

Information Use

- Inform the establishment of additional HAI/ SSI surveillance initiatives in Sierra Leone
- Describe and quantify SSI rates at higher functioning public hospitals in Sierra Leone
- Facilitate IPC and SSI prevention efforts at participating facilities (practice change)
- Inform national IPC and surgical guidelines for Sierra Leone

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