Surveillance of Surgical site Infections

March, 2023

- Estimated 1,10,800 surgical site infections (SSIs) associated with inpatient surgeries in 2015 in USA .

- 2021 NHSN’s HAI Progress Report: 3% increase in the SSI standardized infection ratio (SIR) related to all NHSN operative procedure categories combined compared to the previous year.

Surveillance Setting

- Surveillance of surgical patients will occur in any inpatient facility where the selected operative procedure(s) are performed.

Requirements

- Perform surveillance for SSI following at least one operative procedure category.
- Collect SSI event (numerator) and operative procedure (denominator) data on all procedures decided by the facility .
- Operative Procedures for which SSI surveillance is to be done will be decided by Dept. of Microbiology/ HIC Committee, AIIMS

- All procedures included SSI surveillance plan will be monitored for superficial incisional, deep incisional, and organ/space SSI events

- Type of SSI reported must reflect the deepest tissue level where SSI criteria are met during the surveillance period.

- An SSI event is attributed to the facility in which the operative procedure is performed.

Surveillance Methods

- SSI monitoring requires active, patient-based, prospective surveillance.

- **Concurrent** and **post-discharge** surveillance methods should be used to detect SSIs following inpatient and outpatient operative procedures (TBD by HIC Committee).

Methods include:

- Review of medical records or surgery patient records
- Admission, readmission
- ED, and OR logs
- Patient charts for signs and symptoms of SSI
- Acceptable documentation includes patient-reported signs or symptoms within the SSI surveillance period (telephonic review)

- Lab, imaging, other diagnostic test reports
- Clinician/healthcare professional notes
- ICD-10-CM Infection Diagnosis Codes
- Visit the ICU and wards
- Patient surveys by mail or telephone (though patients may have a difficult time assessing their infections).

- Any combination of these methods (or other methods identified by the facility) with the capacity to identify all SSIs is acceptable for use
- To minimize workload of collecting denominator data, operating room data may be imported.

Operative Procedure Codes

- The operative procedure codes are required to determine the correct operative procedure category to be reported.

- International Classification of Diseases, 10th Revision (ICD-10) codes

Definition of Operative procedure

An Operative Procedure is a procedure:

- That is included in the operative procedure code mapping

And

- Takes place during an operation where at least one incision (including laparoscopic approach and cranial Burr holes) is made through the skin or mucous membrane, or entry is through an existing incision (such as an incision from a prior operative procedure)

And

- Takes place in an operating room (OR)

This may include an operating room, C-section room, interventional radiology room, or a cardiac catheterization lab.

SSI Event Details

The infection window period (IWP), present on admission (POA), healthcare-associated infection (HAI), and repeat infection timeframe (RIT) definitions do not apply to the SSI protocol.

Surveillance Period for SSI

- The timeframe following an operative procedure for monitoring and identifying an SSI event.
- The surveillance period is determined by the operative procedure category (30-day - 90-day surveillance period)
- Superficial incisional SSIs are monitored for a 30-day period for all procedure types.

Date of Event (DOE) for SSI

- For an SSI, the DOE is the date when the first element used to meet the SSI infection criterion occurs for the first time during the SSI surveillance period.
- The DOE must fall within the SSI surveillance period to meet SSI criteria.
- The type of SSI (superficial incisional, deep incisional, or organ/space) reported, and the DOE assigned must reflect the deepest tissue level where SSI criteria are met during the surveillance period.
  - Synonym: infection date.

Timeframe for SSI elements

- SSI guidelines do not offer a strict timeframe for elements of criteria to occur
  - In NHSN's experience, all elements required to meet an SSI criterion usually occur within a 7-10 day timeframe with typically no more than 2-3 days between elements.
- To ensure that all elements associate to the SSI, the elements must occur in a relatively tight timeframe.

- Example
  - An element that occurs on day 2 of the surveillance period with another element that occurs three weeks later should not be used to cite an SSI.

- Each case differs based on the individual elements occurring and the type of SSI but the DOE for an SSI must occur within the appropriate 30- or 90- day SSI surveillance period.

Denominator for Procedure Details

- ASA physical status: Assessment by the anesthesiologist of the patient's preoperative physical condition using the American Society of Anesthesiologists' (ASA) Physical Status Classification System.
  - Patients are assigned an ASA score of 1-6 at time of surgery. Patients with an ASA score of 1-5 are eligible for SSI surveillance.
  - Patients that are assigned an ASA score of 6 (a declared brain-dead patient whose organs are being removed for donor purposes) are not eligible for SSI surveillance.

- Diabetes: The SSI surveillance definition of diabetes indicates that the patient has a diagnosis of diabetes requiring management with insulin or a non-insulin anti-diabetic agent.
- Duration of operative procedure: The interval in hours and minutes between the Procedure/Surgery Start Time and the Procedure/Surgery Finish Time.
- Procedure/Surgery Start Time (PST): Time the procedure is begun (for example, incision for a surgical procedure).
- Procedure/Surgery Finish (PF): Time when all instrument and sponge count are completed and verified as correct, all postoperative radiologic studies to be done in the OR are completed, all dressings and drains are secured, and the physicians/surgeons have completed all procedure-related activities on the patient.

- Emergency operative procedure: A procedure that is documented per the facility's protocol to be an Emergency or Urgent procedure.

- General anesthesia: The administration of drugs or gases that enter the general circulation and affect the central nervous system to render the patient pain free, amnesic, unconscious, and often paralyzed with relaxed muscles.

- Height: The patient's most recent height documented in the medical record in feet (ft.) and inches (in.), or meters (m).

- Non-primary Closure: The closure of the surgical wound in a way which leaves the skin level completely open following the surgery.

- For surgeries with non-primary closure, the deep tissue layers may be closed by some means (with the skin level left open), or the deep and superficial layers may both be left completely open.

- Wounds with non-primary closure may or may not be "packed" with gauze or other material, and may or may not be covered with plastic, “wound vacs,” or other synthetic devices or materials.

- Weight: The patient’s most recent weight documented in the medical record prior to or otherwise closest to the procedure.

- Primary Closure: The closure of the skin level during the original surgery, regardless of the presence of wires, wicks, drains, or other devices or objects extruding through the incision.
    - When a procedure has multiple incision/laparoscopic trocar sites and any of the incisions are closed primarily then the procedure technique is recorded as primary closed.
- Scope: An instrument used to reach and visualize the site of the operative procedure

- Wound class: An assessment of the degree of contamination of a surgical wound at the time of the surgical procedure.
- Wound class is assigned by a person involved in the surgical procedure (for example, surgeon, circulating nurse, etc.) based on the wound class schema that is adopted within each organization.

Four wound classifications

- Clean
- Clean-Contaminated
- Contaminated
- Dirty/Infected

Table 1. Surgical Site Infection Criteria

Criterion	Surgical Site Infection (SSI)
	Superficial incisional SSI Must meet the following criteria:
	Date of event occurs within 30 days following the NHSN operative procedure (where day 1 = the procedure date) **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. organism(s) identified from an aseptically-obtained specimen from the superficial incision or subcutaneous tissue by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing [ASC/AST]). c. a superficial incision that is deliberately opened by a surgeon, physician* or physician designee and culture or non-culture based testing of the superficial incision or subcutaneous tissue is not performed **AND** patient has at least one of the following signs or symptoms: localized pain or tenderness; localized swelling; erythema; or heat. d. diagnosis of a superficial incisional SSI by a physician* or physician designee. * The term physician for the purpose of application of the NHSN SSI criteria may be interpreted to mean a surgeon, infectious disease physician, emergency physician, other physician on the case, or physician's designee (nurse practitioner or physician's assistant).
	Superficial incisional SSI
Comments	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 that has had an operation with one or more incisions (for example, C-section incision or chest incision for 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 (for example, donor site incision for CBGB) **Note:** Refer to SSI Event Reporting Instruction #7 for NHSN operative procedure categories with secondary incision sites available for SSI attribution
Reporting Instructions for Superficial incisional SSI	**The following do not qualify as criteria for meeting the NHSN definition of superficial incisional SSI:** • Diagnosis/treatment of cellulitis (redness/warmth/swelling), by itself, does not meet superficial incisional SSI criterion 'd'. • A stitch abscess alone (minimal inflammation and discharge confined to the points of suture penetration). • A localized stab wound or pin site infection; depending on the depth, these infections might be considered either a skin (SKIN) or soft tissue (ST) infection. **Note**: For an NHSN operative procedure, a laparoscopic trocar site is considered a surgical incision and not a stab wound. If a surgeon uses a laparoscopic trocar site to place a drain at the end of a procedure this is considered a surgical incision.

	Deep incisional SSI Must meet the following criteria:
	Date of event occurs within 30 or 90 days following the NHSN operative procedure (where day 1 = the procedure date) according to the list in Table 2 **AND** involves deep soft tissues of the incision (for example, fascial and muscle layers) **AND** patient has at least ***one*** of the following: a. purulent drainage from the deep incision. b. a deep incision that is deliberately opened or aspirated by a surgeon, physician* or physician designee or spontaneously dehisces **AND** organism(s) identified from the deep soft tissues of the incision by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing [ASC/AST]) or culture or non-culture based microbiologic testing method is not performed. A culture or non-culture based test from the deep soft tissues of the incision that has a negative finding does not meet this criterion. **AND** patient has at least ***one*** of the following signs or symptoms: fever (>38°C); localized pain or tenderness. c. an abscess or other evidence of infection involving the deep incision detected on gross anatomical exam, histopathologic exam, or imaging test. * The term physician for the purpose of application of the NHSN SSI criteria may be interpreted to mean a surgeon, infectious disease physician, emergency physician, other physician on the case, or physician's designee (nurse practitioner or physician's assistant).

Comments	**Deep incisional SSI** 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 (for example, C-section incision or 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 (for example, donor site incision for CBGB) **Note:** Refer to SSI Event Reporting Instruction #7 for NHSN operative procedure categories with secondary incision sites available for SSI attribution.

	Organ/Space SSI Must meet the following criteria:
	Date of event occurs within 30 or 90 days following the NHSN operative procedure (where day 1 = the procedure date) according to the list in Table 2 **AND** involves any part of the body deeper than the fascial/muscle layers that is opened or manipulated during the operative procedure **AND** patient has at least ***one*** of the following: a. purulent drainage from a drain placed into the organ/space (for example, closed suction drainage system, open drain, T-tube drain, CT-guided drainage). b. organism(s) identified from fluid or tissue in the organ/space by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing [ASC/AST]). c. an abscess or other evidence of infection involving the organ/space detected on gross anatomical exam or histopathologic exam, or imaging test evidence definitive or equivocal for infection. **AND** meets at least ***one*** criterion for a specific organ/space infection site listed in Table 3. These criteria are found in the Surveillance Definitions for Specific Types of Infections (Chapter 17)

Table 2. Surveillance Periods for SSI Following Selected NHSN Operative Procedure Categories. Day 1 = the date of the procedure.

30-day Surveillance			
Category	**Operative Procedure**	**Category**	**Operative Procedure**
AAA	Abdominal aortic aneurysm repair	LAM	Laminectomy
AMP	Limb amputation	LTP	Liver transplant
APPY	Appendix surgery	NECK	Neck surgery
AVSD	Shunt for dialysis	NEPH	Kidney surgery
BILI	Bile duct, liver or pancreatic surgery	OVRY	Ovarian surgery
CEA	Carotid endarterectomy	PRST	Prostate surgery
CHOL	Gallbladder surgery	REC	Rectal surgery
COLO	Colon surgery	SB	Small bowel surgery
CSEC	Cesarean section	SPLE	Spleen surgery
GAST	Gastric surgery	THOR	Thoracic surgery
HTP	Heart transplant	THYR	Thyroid and/or parathyroid surgery
HYST	Abdominal hysterectomy	VHYS	Vaginal hysterectomy
KTP	Kidney transplant	XLAP	Exploratory laparotomy

90-day Surveillance	
Category	**Operative Procedure**
BRST	Breast surgery
CARD	Cardiac surgery
CBGB	Coronary artery bypass graft with both chest and donor site incisions
CBGC	Coronary artery bypass graft with chest incision only
CRAN	Craniotomy
FUSN	Spinal fusion
FX	Open reduction of fracture
HER	Herniorrhaphy
HPRO	Hip prosthesis

Table 3. Specific Sites of an Organ/Space SSI

Category	Specific Site	Category	Specific Site
BONE	Osteomyelitis	MED	Mediastinitis
BRST	Breast abscess or mastitis	MEN	Meningitis or ventriculitis
CARD	Myocarditis or pericarditis	ORAL	Oral cavity infection (mouth, tongue, or gums)
DISC	Disc space infection	OREP	Deep pelvic tissue infection or other infection of the male or female reproductive tract
EAR	Ear, mastoid infection	PJI	Periprosthetic joint infection
EMET	Endometritis	SA	Spinal abscess/infection
ENDO	Endocarditis	SINU	Sinusitis
GIT	Gastrointestinal (GI) tract infection	UR	Upper respiratory tract, pharyngitis, laryngitis, epiglottitis
IAB	Intraabdominal infection, not specified elsewhere	USI	Urinary System Infection
IC	Intracranial infection	VASC	Arterial or venous infection
JNT	Joint or bursa infection	VCUF	Vaginal cuff infection
LUNG	Other infection of the lower respiratory tract		

SSI Event (Numerator) Reporting

Numerator Data:

- All patients having any of the procedures included in the selected NHSN operative procedure category(s) are monitored for SSI.
- The Surgical Site Infection (SSI) form is completed for each SSI.
- If no SSI events are identified during the surveillance month, Report No SSI.

Multiple tissue levels are involved in the infection:

- The type of SSI (superficial incisional, deep incisional, or organ/space) reported must reflect the deepest tissue level where SSI criteria are met during the surveillance period.
- Report infection that meets criteria for organ/space SSI as an organ/space SSI, regardless of superficial or deep tissue involvement.
- Report infection that meets criteria for deep incisional SSI as a deep incisional SSI, regardless of superficial tissue involvement.
- If an SSI starts as a deep incisional SSI on day 10 of the SSI surveillance period and a week later (day 17 of the SSI surveillance period) meets criteria for an organ space SSI, the DOE is the date of the organ/space SSI.

- **Attributing SSI to procedures that involve multiple primary incision sites**
- When multiple primary incision sites of the same operative procedure become infected, report as a single SSI, and assign the type of SSI (superficial incisional, deep incisional, or organ/space) that represents the deepest tissue level.

Examples:

- If one laparoscopic incision meets criteria for a superficial incisional SSI and another laparoscopic incision meets criteria for a deep incisional SSI, report one deep incisional SSI.
- If an operative procedure is limited to a single breast and involves multiple incisions in that breast that become infected, report a single SSI.

Denominator for Procedure Reporting

- Denominator data are collected for each individual operative procedure category selected for monitoring.

- For all patients having any of the procedures included in the operative procedure category(s) for which SSI surveillance is being performed during the month, complete the Denominator for Procedure form.

- **Patient expires in the OR:** If a patient expires in the operating room, do not complete a *Denominator for Procedure* form. This operative procedure is excluded from the denominator.

Data Analyses

- Once procedure (denominator) and SSI (numerator) data are collected, the data can be analyzed in various ways including with descriptive analysis reports and Standardized Infection Ratio (SIR) reports.

SSI Rate Reports

- SSI rates per 100 operative procedures are calculated by **dividing the number of SSIs by the number of operative procedures and multiplying the results by 100.**

- SSIs will be included in the numerator of a rate based on the date of procedure, not the date of event (DOE).

SSI SIR Reports

- The SIR is calculated by dividing the number of observed infections by the number of predicted infections.

  - SIR = Observed (O) HAIs
  - Predicted (P) HAIs

- The number of predicted infections is calculated using SSI probabilities estimated from multivariate logistic regression models constructed from data during a baseline time period, which represents a standard population's SSI experience.
- The procedures/SSI occurring in adults are modeled separately from those occurring in pediatrics.

- The SSI surveillance programme should measure both infection rates and compliance rates with surgical infection prevention processes

Process measures

- In the pre-operative phase, hand hygiene, accurate assessment of patient status and risk factors, and initiating specific procedures such as maintaining normothermia, are some of the IPC processes.
- In the intra-operative stage, IPC processes include skin antisepsis, maintaining normothermia and glucose monitoring. Postoperatively, aseptic wound care is a primary prevention process.

SSI Surveillance
All Indian Institute of Medical Sciences
Case Report Form

Primary Admission:		
Patient ID:		
Patient Name:		
Gender: ☐ Female ☐ Male ☐ Other	**Date of Birth:**	
Event Type: SSI	**Date of Event:**	
NHSN Procedure Code:	**ICD-10-PCS or CPT Procedure Code:**	
Date of Procedure:	**Outpatient Procedure**: ☐ Yes ☐ No	
Date Admitted to Facility:	**Location:**	

Event Details

Specific Event:

☐ Superficial Incisional Primary (SIP)		☐ Deep Incisional Primary (DIP)
☐ Superficial Incisional Secondary (SIS)		☐ Deep Incisional Secondary (DIS)
☐ Organ/Space (specify site): _____		

Infection present at the time of surgery (PATOS): ☐Yes ☐No

Specify Criteria Used (check all that apply):

Signs & Symptoms		**Laboratory**
☐ Drainage or material†	☐ Sinus tract	☐ Organism(s) identified
☐ Pain or tenderness	☐ Hypothermia	☐ Culture or non-culture based testing not performed
☐ Swelling or inflammation	☐ Apnea	☐ Organism(s) identified from blood specimen
☐ Erythema or redness	☐ Bradycardia	☐ Organism(s) identified from ≥ 2 periprosthetic specimens
☐ Heat	☐ Lethargy	
☐ Fever	☐ Cough	☐ Other positive laboratory tests†
☐ Incision deliberately opened/drained	☐ Nausea	☐ Imaging test evidence of infection
☐ Wound spontaneously dehisces	☐ Vomiting	
☐ Abscess	☐ Dysuria	Clinical Diagnosis
☐ Other evidence of infection found on invasive procedure, gross anatomic exam, or histopathologic exam†		☐ Physician diagnosis of this event type ☐ Physician institutes appropriate antimicrobial therapy† ☐ Relevant Investigation (USG, X-ray, HMG)
☐ Other signs & symptoms†		
†per specific site criteria		

Detected:	☐ A (During admission)	☐ P (Post-discharge surveillance)
	☐ RF (Readmission to facility where procedure performed)	
	☐ RO (Readmission to facility other than where procedure was performed)	

Secondary Bloodstream Infection: ☐ Yes ☐ No	**Died**: ☐ Yes ☐ No	**SSI Contributed to Death**: ☐ Yes ☐ No
Discharge Date:	**Pathogens Identified:** ☐ Yes /☐ No	

Denominator for Procedure

Patient ID:	Ward/Bed:	Date of Admission:
Patient Name, Last:	First:	Middle:
Gender: F M Other	Date of Birth:	
Date of Procedure:	ICD-10-PCS or CPT Procedure Code:	
Patient's Co-morbidities:		

Procedure Details

Outpatient: Yes No
Wound Class: C CC CO D
ASA Score: 1 2 3 4 5
Trauma: Yes No Scope: Yes No

Height: _____feet_____inches
(choose one) _____meters
Weight: _____lbs/kg (circle one)

BMI:_____
☐ Under-weight ☐ Normal ☐ Over-weight ☐ Obese

H/O Smoking: Yes/No Alcohol: Yes/No

Duration: _____Hours_____Minutes
General Anesthesia: Yes No
Emergency: Yes No
Diabetes Mellitus: Yes No
Closure Technique: Primary Other than primary

Surgeon: _____
☐ Consultant ☐ Resident

NSAIDs:_____

Steroids:_____

Circle one: HPRO KPRO

ICD-10-PCS Supplemental Procedure Code for HPRO/KPRO: _____

Check one: ☐Total ☐Hemi ☐Resurfacing (HPRO only)

If Total: ☐Total Primary ☐Total Revision

If Hemi: ☐Partial Primary ☐Partial Revision

If Resurfacing (HPRO only): ☐Total Primary ☐Partial Primary

*If total or partial revision, was the revision associated with prior infection at index joint? ☐Yes ☐No

Name of the Procedure, Site and Date

Comments

Cesarean Section Surgical Site Infection Surveillance Initiative (CS-SIMPI)

March, 2023

SIMPI Steps

1. Surgical / HICC Team completes the Surgical Safety Checklist / Surveillance Form for every C-section patients (denominator - surveillance population)
2. Day-3 (first) wound check – record findings on Surgical Safety Checklist/Surveillance Form
3. Discharge wound check – record findings on Surgical Safety Checklist/Surveillance Form
4. File Surgical Safety Checklist/Surveillance Form
5. Contact patient on or around day 30 for interview and record findings on Surgical Safety Checklist/Surveillance Form

6. Review data in the surveillance database to find errors and/or missing information
7. When possible, fix data errors
8. Analyze data (calculate rates)
9. Report results

Why focus on C-section procedures?

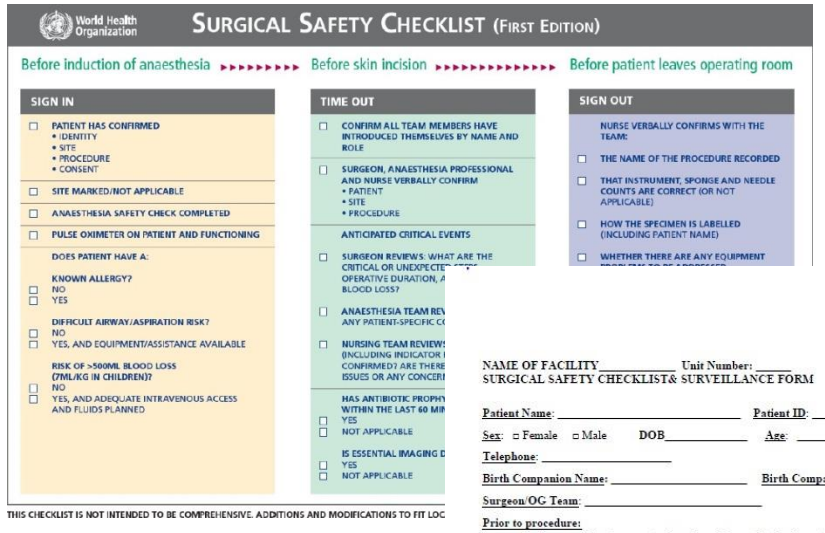
- C-sections procedures have a low procedure-level risk of infection (CLEAN Wound Type)
- Women having a C-section are generally healthy with a low patient-level risk of infection
- Most surgical site infections after C-section are preventable
- Mothers and their infants are an important and vulnerable patient population

Surveillance Methods

Surgical Safety and Checklist and Surveillance Form

Five Areas of Data Collection:

- Demographics
- Clinical Checks: Before Anesthesia
- Clinical Checks: Before Incision
- Clinical Checks: After Wound Closure
- Infection Surveillance



World Health Organization

SURGICAL SAFETY CHECKLIST (FIRST EDITION)

Before induction of anaesthesia ▸▸▸▸▸▸▸▸▸ Before skin incision ▸▸▸▸▸▸▸▸▸▸▸▸▸ Before patient leaves operating room

SIGN IN

- ☐ PATIENT HAS CONFIRMED
  - IDENTITY
  - SITE
  - PROCEDURE
  - CONSENT
- ☐ SITE MARKED/NOT APPLICABLE
- ☐ ANAESTHESIA SAFETY CHECK COMPLETED
- ☐ PULSE OXIMETER ON PATIENT AND FUNCTIONING
- DOES PATIENT HAVE A:
- KNOWN ALLERGY?
  - ☐ NO
  - ☐ YES
- DIFFICULT AIRWAY/ASPIRATION RISK?
  - ☐ NO
  - ☐ YES, AND EQUIPMENT/ASSISTANCE AVAILABLE
- RISK OF >500ML BLOOD LOSS (7ML/KG IN CHILDREN)?
  - ☐ NO
  - ☐ YES, AND ADEQUATE INTRAVENOUS ACCESS AND FLUIDS PLANNED

TIME OUT

- ☐ CONFIRM ALL TEAM MEMBERS HAVE INTRODUCED THEMSELVES BY NAME AND ROLE
- ☐ SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE VERBALLY CONFIRM
  - PATIENT
  - SITE
  - PROCEDURE
- ANTICIPATED CRITICAL EVENTS
- ☐ SURGEON REVIEWS: WHAT ARE THE CRITICAL OR UNEXPECTED [illegible] OPERATIVE DURATION, [illegible] BLOOD LOSS?
- ☐ ANAESTHESIA TEAM REVIEWS ANY PATIENT-SPECIFIC CONCERNS
- ☐ NURSING TEAM REVIEWS (INCLUDING INDICATOR [illegible] CONFIRMED? ARE THERE ISSUES OR ANY CONCERNS
- HAS ANTIBIOTIC PROPHYLAXIS WITHIN THE LAST 60 MIN
  - ☐ YES
  - ☐ NOT APPLICABLE
- IS ESSENTIAL IMAGING DISPLAYED?
  - ☐ YES
  - ☐ NOT APPLICABLE

SIGN OUT

- NURSE VERBALLY CONFIRMS WITH THE TEAM:
- ☐ THE NAME OF THE PROCEDURE RECORDED
- ☐ THAT INSTRUMENT, SPONGE AND NEEDLE COUNTS ARE CORRECT (OR NOT APPLICABLE)
- ☐ HOW THE SPECIMEN IS LABELLED (INCLUDING PATIENT NAME)
- ☐ WHETHER THERE ARE ANY EQUIPMENT [illegible]

THIS CHECKLIST IS NOT INTENDED TO BE COMPREHENSIVE. ADDITIONS AND MODIFICATIONS TO FIT LOC

NAME OF FACILITY_____ Unit Number: _____
SURGICAL SAFETY CHECKLIST& SURVEILLANCE FORM

Date: DD/MM/YYYY

Patient Name: _____ Patient ID: _____

Sex: ☐ Female ☐ Male DOB_____ Age: _____

Telephone: _____

Birth Companion Name: _____ Birth Companion Telephone: _____

Surgeon/OG Team: _____

Prior to procedure:

Surfaces and Environment cleaned: ☐ Yes ☐ No/Inadequate

Hand Hygiene Performed: ☐ Yes ☐ No/Inadequate

☐ antimicrobial soap and water ☐ alcohol-based hand rub

Patient Skin Preparation: ☐ chlorhexidine ☐ betadine ☐ other

Antibiotic Prophylaxis: ☐ Yes ☐ No ☐ NA

☐ Cefazolin ☐ Cefuroxime ☐ Other _____

Procedure: ☐ C-Section ☐ Other _____ ☐ Elective ☐ Emergent

Wound Class: ☐ Clean ☐ Contaminated ☐ Dirty

Supply Problems:[1] ☐ No ☐ Yes: _____

[Infection Surveillance]

	First Check	Discharge	Final Check
Days after procedure	_____Days	_____Days	_____Days
Purulent Drainage / Abscess	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Wound Reopened	☐ 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 & Increased Wound Pain	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Infection was Diagnosed:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

[1] Supply problems may include equipment (IV pump, lighting,) or availability of needed sterile or clean supplies.

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

Why does the SIMPI protocol and case definition not include laboratory findings?

- The diagnosis of wound infection does not require bacteriology / laboratory confirmation
- Because multiple organisms are often found in a single infected wound, it is often unclear which caused the infection
- Culture facility not available in DH

Surveillance Settings

- Surveillance of surgical patients will occur in inpatient and/or outpatient settings where C-sections are performed.

- Designate a dedicated staff nurse to lead the SSI surveillance in the healthcare facility, a ICN will be preferable.

Surveillance Methods

1. **Baseline Infection Control Assessment**

   Identify relevant gaps in infection control policies and practices before surveillance started

2. **Identify Surveillance Population**

   Patients undergoing a surgical procedures of interest

   - C-section

Surgical Safety and Checklist and Surveillance Form

- The surveillance population is established when the surgical team starts the Surgical Safety Checklist and Surveillance Form
  - This form will be maintained throughout the follow-up period and will be used to document case finding and establish denominators
  - Designed as a combined clinical checklist (patient safety) and surveillance form:

Surveillance Methods

3. Case finding

Clinical and/or surveillance staff shall systematically evaluate all hospitalized patients (in-patient) in the surveillance population as possible cases and document findings for surveillance as described.

Existing clinical assessment and documentation for post-surgical patients can remain unchanged

Methods for in-patient case finding may include:

- **Surgical wound assessment (Day 3 and at Discharge).**
- Review of surgery notes/records (if available/feasible)
- Review of nurses/physicians' notes (if available/feasible)
- Verbal review with the clinical/surgical care team

Surveillance Methods

Wound Assessments

Infection Surveillance Section – Surgical Safety Checklist and Surveillance Form

[Infection Surveillance]

	First Check	Discharge	Final Check
Days after procedure	_____Days	_____Days	_____Days
Purulent Drainage / Abscess	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Wound Reopened	☐ 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 & Increased Wound Pain	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Infection was Diagnosed:	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

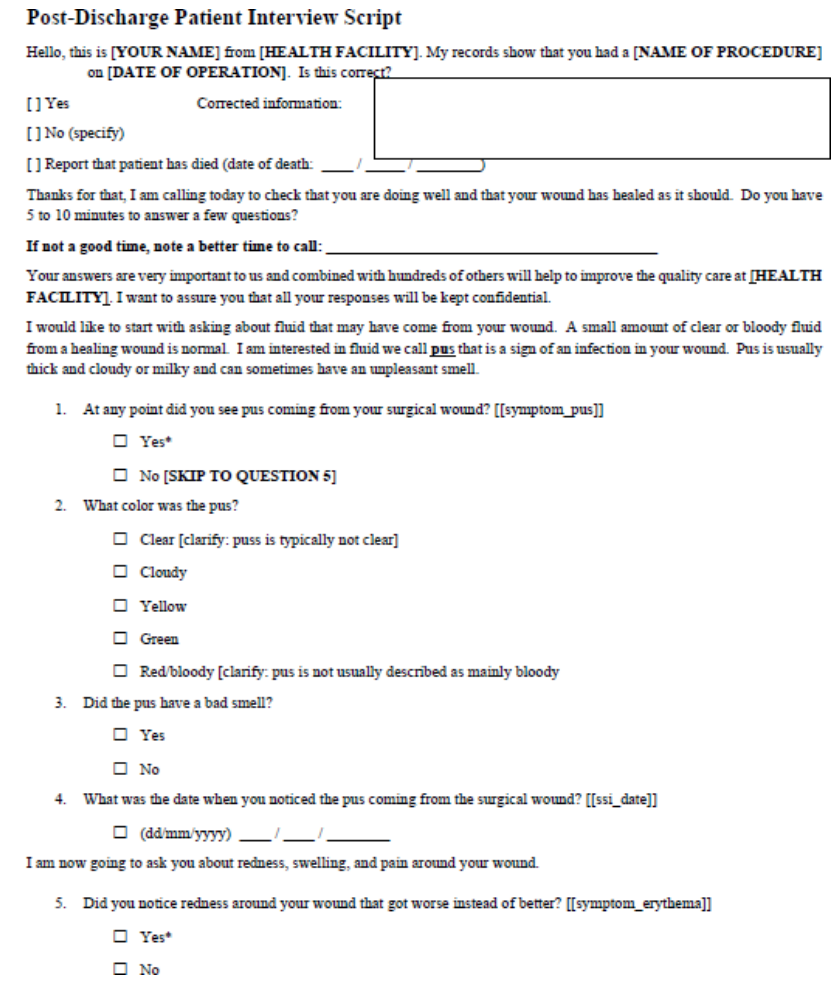
Surveillance Methods

Post-discharge Case Finding: Telephone Interview The method of post-discharge case fining recommended is:

- **Telephone interview with patients**

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

An example script for post-discharge case finding interviews are provided as Appendix 2 of the protocol.



Post-Discharge Patient Interview Script

Hello, this is **[YOUR NAME]** from **[HEALTH FACILITY]**. My records show that you had a **[NAME OF PROCEDURE]** on **[DATE OF OPERATION]**. Is this correct?

[ ] Yes Corrected information:

[ ] No (specify)

[ ] Report that patient has died (date of death: ____ / ____ / _____)

Thanks for that, I am calling today to check that you are doing well and that your wound has healed as it should. Do you have 5 to 10 minutes to answer a few questions?

If not a good time, note a better time to call: _____

Your answers are very important to us and combined with hundreds of others will help to improve the quality care at **[HEALTH FACILITY]**. I want to assure you that all your responses will be kept confidential.

I would like to start with asking about fluid that may have come from your wound. A small amount of clear or bloody fluid from a healing wound is normal. I am interested in fluid we call **pus** that is a sign of an infection in your wound. Pus is usually thick and cloudy or milky and can sometimes have an unpleasant smell.

1. At any point did you see pus coming from your surgical wound? [[symptom_pus]]
   - ☐ Yes*
   - ☐ No **[SKIP TO QUESTION 5]**
2. What color was the pus?
   - ☐ Clear [clarify: puss is typically not clear]
   - ☐ Cloudy
   - ☐ Yellow
   - ☐ Green
   - ☐ Red/bloody [clarify: pus is not usually described as mainly bloody
3. Did the pus have a bad smell?
   - ☐ Yes
   - ☐ No
4. What was the date when you noticed the pus coming from the surgical wound? [[ssi_date]]
   - ☐ (dd/mm/yyyy) ____ / ____ / _____

I am now going to ask you about redness, swelling, and pain around your wound.

5. Did you notice redness around your wound that got worse instead of better? [[symptom_erythema]]
   - ☐ Yes*
   - ☐ No

FAQ - If the Surveillance Team finds an SSI before 30 days, do we still need to call the patient at 30 days?

- No

- If a surgical site infection is noted during the suture removal or during the follow up visit before 30 days, then the case forms will be closed as a case of SSI.

FAQ - If the Surveillance Team is unable to contact a patient after discharge how should the case be recorded?

- If post-discharge case finding is not being done or is lost to follow-up (e.g. patient phone number not reachable or patient moved to a different state)
- The discharge assessment will be the final wound assessment
  - For example - If there was no evidence of a SSI at discharge, then the case will be recorded as No SSI.

Surveillance Methods

Denominator Data

First Day of Surveillance Period	Last Day of Surveillance Period	Number of **ALL** Procedures* Performed	Number of **Emergent** Procedures* performed	Number of **Elective** Procedures* Performed
DD/MM/YYYY	DD/MM/YYYY			
DD/MM/YYYY	DD/MM/YYYY			
DD/MM/YYYY	DD/MM/YYYY			
DD/MM/YYYY	DD/MM/YYYY			

Data Analysis

SSI rate: SSI per 100 procedures.

Divide the total number of SSI recorded by the number of procedures performed and then multiply by 100.