Surgical Site Infections (S.S.I.): SYSTEM Tracer

Begin with Large Group General Questions:

1. Describe your surgical and then medical process related to surgical site infection.
2. The Project Leader will create questions that come from synthesized Strengths, Weaknesses, Opportunities, Threats (S.W.O.T.) analysis.
3. Review current state policies, protocols, standards specific to the prevention of S.S.I.
4. Describe your preoperative or anesthesia screening "intake" area processes.
5. What S.S.I. prevention education is provided to all surgical/medical staff disciplines? Physicians, Nursing, Anesthesia, Pharmacy staff, etc.
6. Describe the patient care areas that you would like to trace: Preoperative area, Operating Room (O.R.), Post-Anesthesia Care Unit (P.A.C.U.), a medical/surgical unit. We recommend that you trace a "service" with higher rates of S.S.I. (for example orthopedics, general "colon" surgery or abdominal hysterectomy O.B.-G.Y.N. service.
7. Do you have all staff involved in the tracer that you would like to have? (Laboratory, Pharmacy, Surgical and Anesthesia Techs., O.R., Service- specific representatives, Sterile Processing, Surgeon, Medicine)

SCIP-Inf-1a Prophylactic antibiotic received within 1 hour prior to surgical incision
SCIP-Inf-2a Appropriate prophylactic antibiotic selection for surgical patients
SCIP-Inf-3a Prophylactic antibiotic discontinued within 24 hours after surgery
SCIP-Inf-4 Cardiac surgery patients with controlled 6 a.m. post operative blood glucose
SCIP-Inf-6 Surgery patients with appropriate hair removal
SCIP-Inf-9 Urinary catheter removed on postoperative day 1 (P.O.D.1) or postoperative day 2 (P.O.D.2) with operative day being zero
SCIP-Card-2 Surgery patients on beta-blocker therapy prior to arrival who received beta-blocker perioperatively
SCIP-V.T.E.-1 Surgery patients with recommended venous thromboembolism prophylaxis ordered

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SCIP-V.T.E.-2 Surgery patients who received appropriate venous thromboembolism prophylaxis within 24 hours prior to surgery and 24 hours after surgery

S.S.I. System Tracer	Sample Tracer Observations/Questions:	Comments/Notes while tracing:
For all preoperative screening and O.R. Intake areas	1. Has a risk assessment been completed in the preop screening process? (Glucose, pre-existing infection, etc.) 2. Do you screen for M.R.S.A.? 3. Describe the patient education specific to preoperative skin preparation and chlorhexidine scrubs? How do they teach patients and is teach back used to ascertain understanding? 4. Are patients encouraged to scrub the umbilical area which had been cited as a high risk area for M.R.S.A.? 5. Some physicians recommend clean pajamas and clean sheets on the preoperative night after skin preparation. Do your staff recommend this? 6. Do you use a standardized surgical safety checklist? 7. What is the process by which the preop antibiotic is given? (Where, When, How and By Whom?) 8. How do you know that your antibiotics are given within 1 hour of surgical incision? Has anesthesia assumed responsibility of giving the preop antibiotic? If not why? 9. Review preop orders. 10. Review time stamp and medication administration record (M.A.R.).	

	11. Review surgical incision time. 12. Review method of data capture. 13. What barriers/issues exist? 14. What solutions have been trialed?	
Physician review of the following questions:	1. Describe the process that is used for antibiotic selection. 2. Are there inpatient versus outpatient similarities and differences? 3. What subspecialty service specific standards are in place? Where can they be found? 4. Describe the orientation/education of physicians 5. Describe accountability mechanisms that in place for use of best practice standards	

S.S.I. System Tracer	Sample Tracer Observations/Questions:	Comments/Notes while tracing:
For the multidisciplinary team:	1. What is the process by which the preoperative antibiotic is discontinued? (Where, When, How and By Whom?) 2. How do you know that the antibiotics are discontinued within 24 hours post surgical incision? 3. Review postoperative orders. 4. Review time stamp and M.A.R. 5. Review surgical incision time. 6. Review method of data capture. 7. What barriers/issues exist? 8. What solutions have been trialed? 9. For Venous-Thromboembolism (V.T.E.) prevention, describe the process of V.T.E. risk assessment and prophylaxis. 10. Describe the process by which sequential compression devices are prescribed. 11. Review anticoagulation prophylaxis use and standardization across services. 12. Describe barriers or issues that exist.	

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S.S.I. System Tracer	Sample Tracer Observations/Questions:	Comments/Notes while tracing:
For the Cardiac Multidisciplinary team:	1. Review cardiac schedule from previous day—review E.M.R./M.R. 2. Audit post-operative day cardiac charts for blood sugar levels. 3. Describe the process across cardiothoracic surgeon practice. 4. Describe the use of beta-blockers prior to arrival for cardiac surgery. 5. Describe practice across surgeons. 6. Describe data collection/capturing process. 7. Describe concurrent monitoring practice. 8. Responsibility, Authority, and Accountability?	
Preoperative, Central Sterile, and O.R. staff team discussion on:	1. Describe your surgical schedule and subsequent processes with central sterilization department. How are surgical cases scheduled based on availability of surgical trays? 2. What is your immediate-use sterilization rate? (Flashing) Is flashing used for implant cases? 3. What processes have been used to reduce the immediate use sterilization rate? 4. Describe your process for cleaning scopes and whether or not best practices for high and low disinfection are being used. 5. Describe your hair removal process/procedure? Your skin preparation procedure? 6. Review current state policy. 7. Do you have issues with shaver's vs clippers?	

	8. Approximately what percent of surgeons do not order hair removal? What percent do? 9. Review the hair removal process during tracer. 10. Is the hair removal process performed outside of the O.R.? (Preoperative holding area?) 11. What are your policies and procedures specific to traffic in the Operating Rooms? Are vendors permitted in the O.R. and how are they distinguished? 12. Is the surgical schedule aligned with case types and instrument availability? If not, why not? 13. Is standardization in place with surgical trays and case carts? If not, why not? 14. Describe any issues/resistance to change.	

S.S.I. System Tracer	Sample Tracer Observations/Questions:	Comments/Notes while tracing:
Multidisciplinary team including E.D., Preop., O.R., Anesthesia, P.A.C.U., and I.C.U. representatives:	1. What is the process by which urinary catheters are inserted? (Where, When, How and By Whom?) 2. What policies and procedures exist related to the use of urinary catheters in the perioperative areas? 3. How do you know that the catheter is removed on Post-operative day 1 or 2? 4. What is the process by which central lines are placed in the E.D. and O.R.? Is the C.L.A.B.S.I. best practice bundle used? 5. Review preoperative and post operative orders. 6. Review time stamp and documentation of foley and/or intravenous catheter insertion and removal. 7. Review the P.A.C.U. and I.C.U. processes for skin care and wound management. 8. Dose antibiotic re-dosing occur as per protocol? 9. Is the antibiotic discontinued as per protocol? 10. Review hospital-wide method of data capture (Is it standardized?). 11. What barriers/issues exist? 12. What solutions have been trialed?	
Patient	1. For the post operative care of the incision site, does the patient have bathing facilities? Do they have running water? Do they have assistance available for dressing changes? 2. How do you assess the patient's understanding of their condition; of their treatment; of their medications; of their need to act on early signs and	

	symptoms? 3. How is the patient's language, culture, religious, and social-economic status considered? Describe how this relates to the preparation of preventing readmissions. 4. What strategies are used when the patient continues to not participate/partner in their care?	
S.S.I. System Tracer	**Sample Tracer Observations/Questions:**	**Comments/Notes while tracing:**
Meet as a multidisciplinary team after the system tracer to: 1. Build your high level process map for all patient care areas that were traced. 2. Ask each team member to brainstorm risk points that were observed within each patient care area—including entry and exit points for the patient. 3. Analyze and prioritize the root causes that the team will address. 4. Target system related solutions and best practice solutions that will target root causes.	The team will complete key findings and themes from the tracer and then begin building a high level process map inclusive of risk points for each step in the process. Please refer to the "How To" guides on the J.C.R. H.E.N.'s website in the toolkit section and talk with your J.C.R. consultant about the team's tracer.	

Preventing S.S.I.: PATIENT Tracer

First complete the System tracer. The purpose of the Patient tracer is to assess whether the related protocols and policies are actually in use with patients.

Preventing S.S.I. Patient Tracer	Sample Tracer Observations/Questions:	Comments/Notes while tracing:
Select a Patient to trace: Patient admitted from the Operating Room, Procedure area, or other entry point and is currently on a surgical unit.	1. Where was the patient admitted from? (Home, skilled nursing facility, acute care hospital transfer?) 2. Ask the patient and family what procedure they came in for and what pre-procedure education they received. 3. Did they understand the risk for surgical infection and what measures did they or their providers take to prevent it? 4. Did staff teach the patient how to use a surgical skin prep/scrub on the night before their surgery? Did the staff ask the patient to teach back the process? 5. Did the patient receive any care and treatment before their surgical procedure to reduce the risk for S.S.I.? (Reduction of fever, previous infection treatment, glucose management, skin preparation at	

Preventing S.S.I. Patient Tracer	Sample Tracer Observations/Questions:	Comments/Notes while tracing:
	home) 6. Assess the patient: What tubes are in place, how have they been secured, what dressings are in place, are they clean and applied as per protocol, are their vital signs normal, are post operative orders in place with antibiotic therapy and discontinuation? 7. What can the patient or family member tell you about hand hygiene methods. Do all care providers use hand hygiene products upon entering and leaving the room? 8. Assess bathing of the patient and their perception of being kept clean, dry, and comfortable. 9. If feasible, observe a wound dressing change. Has the procedure been followed as best practice per protocol? 10. Does the patient have a foley and does it meet medical necessity? 11. Review the patient's medical record: 12. Are care protocols followed: a. Anticoagulation in place? b. Sequential Compression	

Preventing S.S.I. Patient Tracer	Sample Tracer Observations/Questions:	Comments/Notes while tracing:
	Device (S.C.D.) properly placed and available? c. Does laboratory work align with absence of a S.S.I.? d. What type of diet is the patient on? Is the glucose being managed to prevent S.S.I.? e. Respiratory management: Is the patient in need of oxygen therapy? Is their P.O.2 consistent with protocol for wound healing? f. Post operative drainage system management: Does this patient have a drainage tube in place? What is the process for managing it? Will they be discharged with it in place? What is the patient or family understanding of how to care for the drainage tube? g. What post operative education has the patient and family received? h. What educational tools have been used?	

Preventing S.S.I. Patient Tracer	Sample Tracer Observations/Questions:	Comments/Notes while tracing:
	i. What education will the patient and family receive before discharge? j. Has a nutritional assessment been performed and specific teaching of foods to avoid? k. Ask the patient to describe what happened to him or her and what will prevent signs and symptoms of an infection.	
Surgical patient with V.T.E. prophylaxis in place as part of the Surgical Care Improvement Project (S.C.I.P.) protocol	1. Is there documented evidence of adherence to the hospital's protocol for S.S.I. and V.T.E. prevention as defined by the S.C.I.P. measures?: a. Does this post operative surgical patient have recommended V.T.E. prophylaxis orders in place? b. Did this patient receive appropriate V.T.E. prophylaxis within 24 hours prior to surgery and 24 hours after? c. Is this patient receiving anticoagulation overlap therapy? If so, what is the protocol? And what is their	

Preventing S.S.I. Patient Tracer	Sample Tracer Observations/Questions:	Comments/Notes while tracing:
	discharge plan? d. Is this patient receiving unfractionated heparin (U.F.H.) with dosages/platelet count monitoring by protocol or nomogram? e. Are standardized warfarin therapy discharge instructions in place for this patient? f. Is there evidence of how the patient's care providers and primary practice physician will be involved once the patient goes home? g. Has case management coordinated post discharge blood draws for I.N.R. monitoring? h. Does the patient have any barriers to post discharge care provision: Funding for meds, lab draws, etc.	
Final conclusions from the tracer team:	Has the healthcare team implemented all strategies to reduce the risk for S.S.I. post operatively in this patient? What immediate interventions can be used	

Preventing S.S.I. Patient Tracer	Sample Tracer Observations/Questions:	Comments/Notes while tracing:
	to correct any potential risks for the patient at this time?	

The team will complete key findings and themes from the tracer and then begin building a high level process map inclusive of risk points for each step in the process. Please refer to the "How To" guides on the J.C.R. H.E.N.'s website in the toolkit section and talk with your J.C.R. consultant about the team's tracer.

Please refer to the attached high level map for harm across the board in the surgical continuum.

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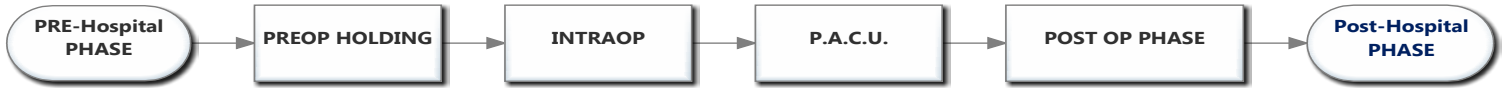
SURGICAL CARE CONTINUUM SUB TASKS AND POTENTIAL RISK POINTS



SUB TASKS:

PRE-Hospital PHASE

- History & Physical
- Informed Consents
- Risk Assessments
- Hand Hygiene
- Schedule Procedure
- Med Reconciliation
- Opioid Management
- Pain Consult
- Preop Labs - Glucose
- M.R.S.A. Nare Screen
- Infection Prevention Education
- Skin Preparation Education
- Temperature - normal
- Pre-existing infections
- Financial Assessment
- Safe Surgical Checklist
- Surgical Schedule Accuracy
- Anticoagulation Management
- V.T.E. Risk Assessment
- Consider Obstructive Sleep -Apnea Evaluation (O.S.A.)
- Hand Off

PREOP HOLDING

- History & Physical
- Universal Protocol
- Hair Removal Policy
- Point of Care Testing
- Hand Hygiene
- Antibiotic Prophylaxis
- Anesthesia Permit
- Operative Consent
- Sequential Compression
- Medication Reconciliation
- Outstanding Labs/Tests
- Skin Preparation
- Safe Surgical Checklist
- Patient / Family Engaged
- Hand Off

INTRAOP

- Glucose Management
- Anesthesia Monitoring
- Antibiotic Prophylaxis
- Hand Hygiene
- Normothermia
- Surgical Trays - purchasing
- Air Flow Management
- Protective Equipment
- Hepa Filtration
- Skin Scrubs
- Traffic Control
- Case Cart Management
- O.R. Schedule Management
- Foley Use Protocols
- Line Placement
- Anticoagulation Management
- Pressure Ulcer Devices
- Blood and Wound Management
- Hand Off

P.A.C.U.

- V.S., Recovery, Med Reconciliation
- Glucose Monitoring
- Antibiotic Dosing
- Respiratory Management
- Hand Hygiene
- Blood and Wound Management
- Anesthesia Monitoring
- Accurate Bed Placement
- Functional Status
- Nutritional Status
- Line Management
- Foley Discontinuation
- Communication with Family
- Anticoagulation Management
- Pain Management
- Sedation Management
- Hand Off

POST OP PHASE

- Post op Care Orders
- Antibiotic Management
- DC Antibiotic / 24 hours
- DC P.O.D. 2 Foley
- Wound Management
- Hand Hygiene
- Sedation Management
- O.S.A. Management
- Pain Management
- Respiratory Management
- Anticoagulation Management
- Prevention of Falls/Injury
- Mobilize the patient
- Literacy and Teach Back
- Discharge Preparation
- Family Engagement
- Case Management
- Hand Off

Post-Hospital PHASE

- Communication with P.C.P.
- Coordination of F/U Visit
- Post Hospital Phone Call
- Outstanding Tests
- Rehabilitation Orders
- Nutritional Status
- Hand Hygiene
- Wound Management
- Pain Management
- Respiratory Management
- Anticoagulation Management
- Medication Access / Funding
- Understanding of Care Plan
- Equipment Access
- Family Engagement
- Care Management
- Hand Off

Examples of Potential Risk Points:

PRE-Hospital PHASE

- Lack of lab results
- Nare Screens
- Inconsistent Education
- Skin Breakdown
- Skin prep signs and symptoms
- Lack of cardiac clearance
- Medication error
- Pre-existing Infection
- Incomplete documentation
- Lack of family involvement
- Lack of Team Communication
- Lack of clearly defined plan -->
- Lack of proper instruments/ case carts, etc
- Go/No Go Decisions
- Medications Not Stopped
- Inaccurate scheduling
- Handoff Failure

PREOP HOLDING

- Skin Tears
- Lack of Clipper Training
- Skin condition/abrasions
- Colorectal antibiotic
- Inconsistent V.T.E. Prophy
- Lack of team based timeout
- Lack of documentation
- Lack of coordination
- S.C.D. par levels
- Handoff Failure

INTRAOP

- Flashing Rates
- Colorectal Antibiotic Selection
- Normothermia Failure
- Traffic, Environmental Issues
- Door Closures
- Temp, Humidity, Pressure
- P.P.E. Breaches
- Out of OR Dress Code
- Surgical technique
- Handoff Failure

P.A.C.U.

- Projection of DC Antibiotic
- Projection of DC Foley
- Omission of Antibiotic
- Lack of Aseptic Dressing Change
- Oversedation
- V.A.P. / V.A.E.
- Lack of anticoagulation
- Lack of anesthesia oversight
- Lack of immediate post op note
- Lack of team clarity @ plan
- Over-hydration and Heart Failure
- Handoff Failure

POST OP PHASE

- Failure to DC antibiotic
- Failure to DC Foley
- Failure to Monitor Glucose
- Hand Hygiene Breaches
- Equipment Cleaning
- Medication Reconciliation
- Respiratory Sedation
- Delirium
- Immobility issues
- Falls, D.V.T.' P.E.' C.A.U.T.I.'
- C.L.A.B.S.I., Pressure Ulcer
- S.S.I.' V.A.P.' V.A.E.
- Readmission
- Inaccurate/Timely Handoff

Post-Hospital PHASE

- Urinary Tract Infection
- Venous Thromboembolism
- Falls and Immobility, S.S.I.'
- Pressure Ulcer
- Lack of Follow Up P.C.P.Visit
- Lack of Timely DC Summary
- Lack of Coordinated Handoff
- Misunderstanding of Care Plan
- Lack of Medication Funding
- Lack of Labs (I.N.R. testing)
- Lack of Mobility equipment
- Lack of care management
- Over-hydration / Heart Failure