



*The following quality measure was developed for use in reporting through the Society's proposed qualified clinical data registry:*

**MEASURE #: ASBS 2**

**MEASURE TITLE:** Surgical Site Infection and Cellulitis After Breast and/or Axillary Surgery

**NATIONAL QUALITY DOMAIN:** Person & Caregiver-Centered Experience and Outcomes

**MEASURE DESCRIPTION:** Percentage of patients who develop a surgical site infection (SSI) or cellulitis within 30 days of undergoing a breast operation and/or an axillary operation.

**INSTRUCTIONS:** This measure is to be reported each time a patient aged 18 and older undergoes a breast and/or axillary operation. This measure may be reported by clinicians who perform the quality actions described in the measure based on the services provided and the measure-specific denominator coding.

**MEASURE REPORTING:** CPT codes and patient demographics are used to identify patients who are included in the measure's denominator.

**DENOMINATOR:** The number of patients aged 18 years and older on date of encounter undergoing a breast and/or axillary operation.

**Eligible Cases:** Patient aged 18 and older on date of encounter **AND CPT codes indicating breast or axillary procedure.**

**Patient encounter during the reporting period (CPT): 19120, 19125, 19126, 19301, 19302, 19303, 19304, 19305, 19306, 19307, 38525, 38530, 38740, 38745**

**19120** Excision of cyst, fibroadenoma, or other benign or malignant tumor, aberrant breast tissue, duct lesion, nipple or areolar lesion (except 19300), open, male or female, 1 or more lesions

**19125** Excision of breast lesion identified by preoperative placement of radiological marker, open; single lesion

**19126** Each additional lesion separately identified by a preoperative radiological marker (list separately in addition to code for primary procedure) Use 19126 in conjunction with 19125

**19300** Mastectomy for gynecomastia

**19301** Mastectomy, partial (e.g. lumpectomy, tylectomy, quadrantectomy, segmentectomy)

**19302** Mastectomy, partial (e.g. lumpectomy, tylectomy, quadrantectomy, segmentectomy) with axillary lymphadenectomy

**19303** Mastectomy, simple, complete

**19304** Mastectomy, subcutaneous

**19305** Mastectomy, radical, including pectoral muscles, axillary lymph nodes

**19306** Mastectomy, radical, including pectoral muscles, axillary and internal mammary lymph nodes (Urban type operation)

**19307** Mastectomy, modified radical, including axillary lymph nodes, with or without pectoralis minor muscle, but excluding pectoralis major muscle

**38525** Open, deep axillary node(s)

**38530** Open, internal mammary node(s)

**38740** Axillary lymphadenectomy; superficial

**38745** Axillary lymphadenectomy complete

**Inclusion Criteria:** Includes all breast and axillary procedures, even when combined with other procedures, such as breast and axilla, breast and reconstructive procedures, ipsilateral and contralateral breast procedure; breast and ovarian procedure; other combined procedures.

**Exclusion Criteria:** Patients aged less than 18; patients who develop SSI after midnight on the 30<sup>th</sup> day after procedure; patients who had a combined procedure (breast/axillary procedure and additional procedure at a non-breast/axillary site) synchronous with breast/axillary procedure who develop infection only at the non-breast/axillary surgical site. Patients undergoing delayed breast reconstructive procedures without concurrent primary breast resection procedure.

**NUMERATOR:** Number of patients aged 18 and over who developed an SSI or cellulitis within 30 days of undergoing a breast and/or an axillary operation.

### **Cellulitis**

**Definition:** Cellulitis is an infection that involves skin at the surgical incision site and does not meet NSQIP criteria for designation as a superficial SSI.

**Criteria:** An infection that occurs within 30 days after the principal operative procedure and involves skin and has the following:

Incisional pain or tenderness, localized swelling, redness, or heat that is treated with:

- A. Antibiotics without deliberate opening of the wound, or
- B. Deliberate opening of the wound, even if a culture is obtained and negative, and whether or not antibiotics are prescribed
- C. Diagnosis of cellulitis by the surgeon or attending physician that does not meet NSQIP criteria for superficial SSI.

**Scenarios to clarify (Assign Variable; ie, classify as cellulitis):** Patient did not present to surgeon or other care provider by midnight of 30th postoperative day, but patient history is compatible with clear symptoms and signs of cellulitis by this date. For cases that meet criteria for both cellulitis and superficial SSI, report them as superficial SSI.

**Scenarios to clarify (Do Not Assign Variable):** Cases of presumed breast lymphedema are not included; this consists of mild swelling or redness for which antibiotics may be prescribed but the inflammation persists beyond 1 month and does not resolve with antibiotic treatment.

Cellulitis is not assigned if “superficial incisional SSI” is present as defined below.

### **Superficial Incisional SSI\***

**Definition:** Superficial incisional SSI is an infection that involves only skin or subcutaneous tissue of the surgical incision.

**Criteria:** An infection that occurs within 30 days after the principal operative procedure **AND** the infection involves only skin or subcutaneous tissue of the incision **AND** at least **ONE** of the following:

- A. Purulent drainage, with or without laboratory confirmation, 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** superficial incision is deliberately opened by the surgeon, unless wound culture is negative
- D. Diagnosis of superficial incisional SSI by the surgeon or attending physician

**Scenarios to clarify (Assign Variable; i.e. classify as SSI):** Superficial SSI which occurs at a drain site, in which the drain was placed during the principal operative procedure. Patient did not present to surgeon or other care provider by midnight of 30th post-operative day, but patient history is compatible with clear symptoms and signs of superficial SSI by this date.

**Scenarios to clarify (Do Not Assign Variable):** Stitch abscess (minimal inflammation and discharge confined to the points of suture penetration) that is not treated with oral or intravenous antibiotics.

Incisional SSI that extends into the fascia and muscle layers (see deep incisional SSI). Report infection that involves both superficial and deep tissues as deep incisional SSI. Do not assign superficial SSI if only criteria for cellulitis are present as defined above.

### **Deep Incisional SSI\***

**Definition:** Deep incisional SSI is an infection which involves deep soft tissues. Deep soft tissues are typically any tissue beneath skin and immediate subcutaneous fat, for example, fascia and muscle layers. For breast surgery, “deep” SSI applies only to infection deep to the pectoralis fascia, and/or resulting in muscle, autogenous flap, alloderm, or prosthetic suture line disruption or requirement for autogenous flap, mesh, or any type of prosthetic material removal or debridement.

**Criteria:** An infection that occurs at the surgical site within 30 days after the principal operative procedure **AND** involves deep soft tissues **AND** at least **ONE** of the following:

- A. Purulent drainage involving the deep tissues.
- B. A deep incision spontaneously dehisces or is deliberately opened by a surgeon when the patient has at least one of the following signs or symptoms: fever ( $> 38.0$  C), localized pain, or tenderness, unless the site is culture-negative
- C. An abscess or other evidence of infection involving the deep tissues is found on direct examination, during reoperation, or by radiologic examination
- D. Infection involving muscle, autogenous flap, alloderm, or prosthetic material or prosthetic suture line disruption or requirement for removal or debridement of autogenous flap tissue, mesh, or any type of prosthetic material removal or debridement.
- E. Diagnosis of a deep incision SSI by a surgeon or attending physician

**Scenarios to clarify (Assign Variable):**

- 1. An infection that involves both superficial and deep tissues should be reported as deep

incisional SSI.

2. If patient history is compatible with clear symptoms and signs of deep SSI by midnight of 30<sup>th</sup> postoperative day, then SSI should be reported even if patient did not present to surgeon or other care provider by midnight of 30th postoperative day.

**Scenarios to clarify (Do Not Assign Variable):** Only an SSI at the site of the breast/axillary operative procedures should be assessed. Incision sites for “other” or “concurrent” procedures, if they are in distinctly different anatomical sites should not be assessed. If there is question as to whether or not an incision site was an integral portion of the principal operative procedure, include this site in your SSI assessment.

**RATIONALE:** Postoperative SSI is the most common cause of healthcare associated infection. SSI causes substantial morbidity, can contribute to mortality and is costly. SSI and cellulitis may occur more often in patients undergoing breast operations compared to other Class one “clean” general surgical operations. In patients undergoing reconstructive breast operations, SSI can lead to loss of reconstruction, and the need for secondary surgeries. The American College of Surgeons National Surgical Quality Improvement Program (NSQIP), the Center for Disease Control’s National Healthcare Safety Network (NHSN), and the Institute for Healthcare Improvement (IHI) have all developed major initiatives to lower SSI rates. Cellulitis is not included in the current CDC and NSQIP definitions of SSI, but the importance of postoperative breast cellulitis has been recently emphasized because it is more common than breast SSI.

Risk Adjustment:

- 1) BMI > 30.
- 2) Smoker (within the last year)
- 3) Diabetes requiring medication.
- 4) Immediate reconstruction.
- 5) Wound class
- 6) History of radiation

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#### REFERENCES

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2. American College of Surgeons. Surgical Site Infection definition. In: Chapter 4. Variables & Definitions. *2014 American College of Surgeons NSQIP® Operations Manual* Effective date: January 1, 2014–June 30, 2014: 86-96.
3. The American Society of Breast Surgeons Position Statement on Antibiotics and Breast Surgery. Available at: [https://www.breastsurgeons.org/new\\_layout/about/statements/index.php](https://www.breastsurgeons.org/new_layout/about/statements/index.php).
4. Degnim AC, Throckmorton AD, Boostrom SY, et al. Surgical site infection after breast surgery: impact of 2010 CDC reporting guidelines. *Ann Surg Oncol*. 2012;19:4099-403. doi: 10.1245/s10434-012-2448-6. Epub 2012 Jun 26.
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\*Adapted from 2014 American College of Surgeons NSQIP Operations manual