

Update and Comment on the National Healthcare Safety Network (NHSN) Surgical Site Infection (SSI) 2014 Changes

CDC has rigorously reviewed NHSN SSI methodology in partnership with external surgical, infection prevention, and perioperative nursing experts. The consensus input is a call for NHSN to collect and analyze additional SSI data that will enable improved risk adjustment and procedure-specific analyses. CDC concurs with these recommendations and will introduce several important additions and modifications to the NHSN SSI protocol data requirements in 2014, including: height and weight; diabetes status; incisional closure type (primary vs. non-primary); and a modified definition of procedure duration.

In planning for modifications to existing NHSN data requirements, CDC considers the implications for NHSN users in terms of added burden and availability of data in electronic health records systems. Some NHSN users have expressed concerns that some important SSI risk factors are not consistently available in the perioperative record systems used in their hospitals, and they may not have sufficient time or resources to capture these elements in existing records systems in time to meet 2014 reporting requirements. CDC acknowledges these concerns and is taking immediate steps to address them. Although all SSI data fields are built into the NHSN application scheduled for release in 2014, CDC has decided to provide interim guidance for reporting diabetes and incisional closure type, which may be particularly burdensome for some NHSN users. **NHSN users are strongly encouraged to work with their operating room (OR) liaisons, information technology (IT) departments, or other groups within their facility as needed, to ensure that diabetes and incisional closure type are readily available for mandatory reporting to NHSN beginning 2015.**

Instructions for entering diabetes and incisional closure data into the NHSN SSI Denominator for Procedure Form, including interim methods for data entries for NHSN users who may not have sufficient time or resources to establish electronic data capture in 2014.

Diabetes (Y/N):

The diabetes data field calls for a Yes/No data entry depending on whether the patient is a diagnosed diabetic on the basis of documentation in the medical record regarding diabetes management, either insulin or oral anti-diabetic agent(s). Indicate Y if the patient has a diagnosis of diabetes requiring management with insulin or a non-insulin anti-diabetic agent. This includes patients with “insulin resistance” who are on management with an anti-diabetic agent. This also includes patients with a diagnosis of diabetes requiring management with an anti-diabetic agent, but who are noted to be non-compliant with their prescribed medications. Indicate N if the patient has no known diagnosis of diabetes, or a diagnosis of diabetes that is controlled by diet alone. Also indicate N if the patient receives insulin for perioperative control of hyperglycemia but has no diagnosis of diabetes.

Information about a patient’s diabetes status should be routinely available in the admission H&P, preoperative patient evaluation, and other hospital records. However, we are aware that in many facilities the diabetes status may not be a standard element in the perioperative record. The interim method for data entry by NHSN users who lack time or resources to capture this information in 2014 is as follows: default to “N” value for all patients until a system is in place to identify and report this information. The diabetes field, with “Y” or “N” data entries in accordance with the NHSN protocol, will be required for all NHSN users beginning in 2015.

Incisional Closure Type:

Primary Closure is defined as closure of all tissue levels during the original surgery, regardless of the presence of wires, wicks, drains, or other devices or objects extruding through the incision. This category includes surgeries where the skin is closed by some means, including incisions that are described as being “loosely closed” at the skin level. Thus, if any portion of the incision is closed at the skin level, by any manner, a designation of primary closure should be assigned to the surgery.

Non-primary Closure is defined as closure that is other than primary and includes surgeries in which the superficial layers are left completely open during the original surgery and therefore cannot be classified as having

primary closure. For surgeries with non-primary closure, the deep tissue layers may be closed by some means (with the superficial layers left open), or the deep and superficial layers may both be left completely open. *The NHSN protocol includes numerous examples; but in short, anything not meeting the definition of primary closure is by default non-primary closure.*

Information about a patient's incisional closure type should be available in the operative report. However, we are aware that in many facilities the incisional closure type may not be a standard element in the perioperative record. The interim method for data entry by NHSN users who lack time or resources to capture this information in 2014 is as follows: continue to report the procedure denominators exactly as you were doing for 2013. Further, we ask that for each SSI identified, a thorough evaluation be conducted to determine if the linked procedure was a primary closure or non-primary closure and update the procedure record (as non-primary closure) if necessary. From feedback we have gathered, this is likely the method most similar to the current practice, which has not been accurately removing all non-primarily closed procedures, but will at least allow NHSN to identify the SSIs linked to primarily closed procedures. We anticipate that this will not cause any large shift in the 2014 data used for inter-facility comparison.

Note: We are aware that some clinicians disagree with the NHSN definition of primary closure, as relates to loosely or partially closed incisions in unusual scenarios (e.g., the skin is only approximated at a single point or several points in an otherwise open incision). We contemplated such scenarios when crafting the definition and it was not feasible to write a surveillance definition that could be standardly applied that would account for the potentially limitless variety of closure techniques under actual use in clinical practice. In essence, NHSN is not going to attempt to define "how closed is closed." NHSN has closely adapted the American College of Surgeons, NSQIP definition of primary closure. Please keep in mind that for risk adjustment purposes, the emergency status of the procedure, wound classification, and other patient factors will still be taken into account, as appropriate.

Instructions for entering height, weight, and procedure duration into the NHSN SSI Denominator for Procedure Form; no interim methods accepted.

NHSN duration of an operative procedure: The interval in hours and minutes between the Procedure/Surgery Start Time, and the Procedure/Surgery Finish Time, as defined by the Association of Anesthesia Clinical Directors (AACD): Procedure/Surgery Start Time (PST): Time when the procedure is begun (e.g., incision for a surgical procedure). Procedure/Surgery Finish (PF): Time when all instrument and sponge counts 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.

The modified definition of duration is needed because the requirement for primary incisional closure is being removed from the NHSN definition of an operative procedure in 2014; the previous definition included a procedure stop time that was defined by the time of incisional closure. The data elements for the new definition should be routinely available in the operative record. If you are not sure how to access them, please first consult with your OR liaison or a member of the perioperative team who is responsible for recording operative times. Please also note that the PST is, essentially, the incision time for a surgical procedure, so only the PF is a new part of the definition.

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

Weight: The patient's most recent weight documented in the medical record in pounds (lbs) or kilograms (kg) prior to or otherwise closest to the procedure

Previously, height and weight were collected for Cesarean procedures only; these data will now be required for all NHSN operative procedures under SSI surveillance beginning 2014. NHSN does not anticipate difficulty capturing height or weight, and these fields should be collected as instructed.