Chapter 2

THE DATA COLLECTION PROCESS

2.1 Overview

The data collection process begins with case selection. Surgical procedures are selected from the operative log based upon Program inclusion and exclusion criteria. The next step for the included case is to establish its existence in the ACS NSQIP Pediatric database. Following that, the reviewer will collect the preoperative risk factors, preoperative laboratory values, and intraoperative information via a thorough review of the electronic and/or paper medical record. At 30 days from the date of surgery, these included cases are reviewed for postoperative outcome information. This data is then entered into the ACS NSQIP Pediatric workstation. For reinforcement of this description, please refer to the last page of this chapter for the flowchart depicting the data collection process.

2.2 Case Selection

The first step of the data collection process is case selection. This is a two part process:

= Part 1 is a ‘Systematic Sampling Process’ that is to be utilized for those surgical services that have a significant volume of surgical cases. The expected annual number of cases one Surgical Clinical Reviewer (SCR) can collect is 1400 cases. If a surgical service performs more than this number of cases annually, systematic sampling of the cases must be utilized. This process will be explained in Section 2.2.1.

= Part 2 involves determining case inclusion by applying specific criteria to select the appropriate cases for the ACS NSQIP. This will be described in section 2.2.2.

2.2.1 Systematic Sampling Process

Large surgical services normally experience a significant volume of surgical cases. This presents the nurse reviewer with the problem of managing an overwhelming workload. In order to prevent bias in choosing cases for assessment, a systematic sampling plan was developed; referred to in this Program as the ‘8-day cycle’. The 8-day cycle works as follows: If, for example, the first ‘cycle’ begins on a Monday, it continues through to the following Monday (an 8-day period of time). The next cycle then begins on Tuesday and continues through to the following Tuesday and so on. This process assures that cases have an equal chance of being selected from each day of the week.

You must utilize this schedule to determine what dates/days that operations are performed on where you are to begin your case selection. For example, if January 1st
is the first day of a cycle, you would want to begin case selection with those cases performed on January 1st.

The 8-day cycle schedule is found in Appendix A. **It is mandatory that this schedule is followed to assure a proper systematic sampling of your hospital’s surgical caseload.**

2.2.2 Determining Case Inclusion

Once you have determined **when** you are starting case selection (via the 8-day cycle schedule), you must then determine **what** you are collecting.

For the next step, you will need the operative log. The operative log provides the list of surgical cases from which to apply inclusion and exclusion criteria. The availability of the final operative log for each day can vary from site to site. Ideally the operative log is available the day after surgery is performed, but it can take up to 30 days for some sites to finalize their operative log. This is okay. **It is imperative to utilize the operative log and not the operative schedule as the operative log includes any emergent, urgent or add-on procedures that were performed as well as excludes any scheduled cases that were not performed.**

Armed with the operative logs for start date and subsequent dates of the applicable 8-day cycle, the following criteria should be applied to determine case inclusion.

**Step 1:** Is the CPT code for the surgical procedure listed on the CPT code inclusion list? This list is located in Appendix B (codes only) or Appendix C (codes with procedure description).

If the CPT code is not on the operative log, the location of the codes needs to be determined. **It is important to note that hospitals bill by ICD-9 codes for inpatient procedures and CPT codes for outpatient procedures; however, surgeons bill by CPT code.** The CPT codes can be located through the surgeons’ offices or through an electronic billing program (e.g. IDX or Star) if this is available. Discuss with your surgeon champion where the CPT codes can be found at your

**Step 2:** Apply the following exclusion criteria to determine if the case should be excluded:

- Patients 18 years, or older.
- Exclude a return to the operating room/ICU setting as the principal operative procedure, if it is related to an occurrence or complication from any procedure (surgical or otherwise) regardless of where the procedure was performed, within 30 days.
or within the same admission, regardless of if the prior procedure was a NSQIP assessed surgical procedure.

**Examples:**

Patient undergoes a vascular femoral-femoral bypass; you do not pick this case up in your cycle for review. On postoperative day 10, the graft becomes infected and the patient returns to the OR for graft removal; this case is selected for review. As the RTOR was for a complication from the femoral-femoral bypass, the reoperation for the graft infection complication would not be reviewed as a principal operative procedure.

Patient has an outpatient colonoscopy. During the procedure the bowel is perforated and the patient must go emergently to the OR for a colectomy. As the bowel perforation was a complication from a procedure (colonoscopy) the colectomy would not be reviewed as a principal operative procedure.

**Guidance:** A reoperation based on pathology results would not be considered an occurrence or complication from the initial biopsy or resection and the case could be reviewed as the principal operative procedure.

**Example:** Patient undergoes a breast biopsy and postoperatively margins return positive and the patient is taken back to the OR for a resection, the take back for the resection could be reviewed as the principal operative procedure as this is not considered a complication.

**Example:** Patient undergoes a liver resection and postoperatively margins return positive and the patient is taken back to the OR for further resection. The take back for the resection could be reviewed as the principal operative procedure as this is not considered a complication.

- More than 5 of each of the following types of procedures (see CPT code list in Appendix D for the specific CPT codes of each of these procedure types)
  - Appendectomy
  - Laparoscopic Cholecystectomy
  - Gastrostomy
- **Trauma cases** – specifically: Any injury with a principal ICD-9 diagnostic code within the range of 800-959.9. Additionally, exclude any surgical procedure related to the index trauma procedure(s), which occur during the same hospitalization. Any operation performed after the patient has been discharged from the trauma stay will be included, if they meet NSQIP-P program inclusion criteria. Any suspected abuse/neglect with ICD-9 diagnostic code within the range of 995.50 – 995.59 will be excluded.
Exception to Trauma criteria: Include cases where there is an isolated limb section fracture and included CPT code.

Transplant cases – specifically: A patient who is admitted to the hospital for organ transplant surgery, and has additional surgical procedures performed during the same hospital stay, will be excluded. Any operation performed after the patient has been discharged from the transplant stay will be included.

ASA 6: (Declared brain-dead patient whose organs are being removed for donor purposes)

Concurrent Case – An additional operative procedure performed by a different surgical team (e.g., a different specialty/service) under the same anesthetic.

CPT code different from that of the Principal Operative Procedure an additional operative procedure performed by a different surgical team under the same anesthetic (for example, coronary artery bypass graft procedure on a patient who is also undergoing a carotid endarterectomy) – does not require a separate assessment form. Report this additional procedure as ‘concurrent’ in the operative section for the assessed case.

SCR on vacation. Each site is allowed to assign six of the 46 8-day cycles in a year (hospital contract year) as vacation cycles and therefore do not need to collect cases during those cycles.

2.2.3 Selecting the First 35 Consecutive Cases

Once cases meeting criteria for inclusion have been identified, the next step is to select the first 35 cases in consecutive order for final inclusion and assessment for that cycle. The necessary information to determine consecutive order is as follows: (1) date of operation, (2) the time the patient is moved into the operating room (known as “Patient in Room” time) and (3) the OR room number. Arrange cases in consecutive order first by the date of operation and then by the Patient in Room time, from earliest to latest. If multiple patients have the same ‘in room’ time, utilize the OR room number (from lowest to highest) to determine the consecutive cases.

As a practice, consider the following included cases that were performed on the same day. How would you place these cases in ‘consecutive order’ based upon the above criteria?

<table>
<thead>
<tr>
<th>Room Number</th>
<th>Operation Date</th>
<th>Patient Name</th>
<th>Procedure</th>
<th>Anesthesia Type</th>
<th>CPT Code</th>
<th>In Room time</th>
<th>Out Room time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8/4/08</td>
<td>Jones, John</td>
<td>Appendectomy</td>
<td>General</td>
<td>44950</td>
<td>0645</td>
<td>1010</td>
</tr>
<tr>
<td>Room 1</td>
<td></td>
<td>Smith, Rebecca</td>
<td>Lap Cholecystectomy</td>
<td>General</td>
<td>47562</td>
<td>0800</td>
<td>1045</td>
</tr>
<tr>
<td>Room 2</td>
<td>8/4/08</td>
<td>Jameson, Joseph</td>
<td>MAC</td>
<td></td>
<td></td>
<td>0700</td>
<td></td>
</tr>
</tbody>
</table>
As the date of operation for the above cases is the same, the next criteria to consider in the In Room time. The earliest In Room time of these four cases is 0645, so John Jones would be case #1. The next In Room time is 0700, but there are two cases that begin at this time. Now the selection criteria moves to the OR room number, beginning from lowest to highest, so Joseph Jameson in room 3 would be the next consecutive case (case #2) and Kylie White would be case #3. The next In Room time is 0800 so Rebecca Smith would be case #4.

**Remember:** To determine ‘consecutive order’, start with the date of operation (the first date of which is the first day of the 8-day cycle), then the Patient In Room time (earliest to latest). If multiple patients have the same In Room time, utilize the OR room number from lowest to highest.

### 2.3 Data Collection Worksheet

Once case inclusion has been determined, document the pertinent data from the operative log on the ACS NSQIP Pediatric data collection worksheet. This worksheet will help guide the variables to be collected on each case. A master copy of this worksheet is located in Appendix E.

### 2.4 Data Collection Process for the Included Case

Refer to the last page of this chapter for a visual overview of the data collection process if needed. This flowchart may help you to further comprehend the following discussion of the data collection process.

#### 2.4.1 Establish the Included Case in the ACS NSQIP Pediatric Workstation

Once you have selected the case based on the inclusion/exclusion criteria, it is important that the case be entered into the workstation to establish the existence of the case in the ACS NSQIP Pediatric database. This mandatory function also allows the nurse reviewer and the coordinating center to monitor case accrual. The minimal information needed to set up a case in the workstation is as follows:

- Patient’s Medical Record Number (this number is encrypted in the ACS NSQIP Pediatric database and is therefore HIPAA compliant)
- Date of the Patient’s Birth
- Date of Operation
- Surgical Subspecialty

Detailed instructions to perform this function are provided in Chapter 5.

#### 2.4.2 Collect the Preoperative and Intraoperative Variables
Preoperative Risk Factors: Review the patient’s electronic and/or paper medical record for the preoperative risk factors. Preoperative information can be obtained from, but not limited to, the history and physical exam note, the pre-anesthesia assessment, progress notes, and reports from diagnostic studies. This information may be obtained from the initial patient workup, upon transfer of the patient to the surgical service, or through a patient self-assessment.

*Note: Preoperative risk factors should only be reported if they are documented in the medical record preoperatively. Any preoperative risk factor first noted in the intraoperative, or postoperative, period is not to be reported as a preoperative risk factor.

Preoperative Laboratory Values: Review the patient’s electronic and/or paper medical record for the preoperative blood work. You should select the lab values obtained closest to the date/time of surgery within 30 days prior to surgery.

Intraoperative Information: Intraoperative information can be obtained through a review of the patient's electronic and/or paper medical record. Data may be found in, but not limited to, the following locations: Operative Report, Nurse Intraoperative Record, Anesthesia Intraoperative Flow Sheet, Brief Operative Note, and/or Surgical Billing System.

2.4.3 30-day Postoperative Outcomes

The ACS NSQIP Pediatric has two primary 30-day outcome variables: Surgical mortality and surgical morbidity. Each case must have the mortality and morbidity followed out to 30 days postoperatively from the date of surgery.

The ACS NSQIP Pediatric collects 22 categorized postoperative morbidities. An optional ‘Other Occurrence’ category is available to report other occurrences that your site may wish to track (please note that any reported ‘Other Occurrences’ are not utilized in the statistical analysis).

Outcome information can be obtained in a variety of ways in addition to a thorough review of the patient’s electronic and/or paper medical record. Your institution may utilize a separate clinic medical record to document outpatient follow-up visits. These records may be located either in the clinic or the private surgeon’s office. Another way to obtain outcome information is through attending Morbidity & Mortality conferences where surgical complications are discussed in depth by the surgical attendings and residents. Additional methods to obtain complete 30 day follow-up include either a phone call placed to the patient’s parents or guardian or a follow-up letter mailed to the patient’s parents or guardian for a written response.

*Note: Detailed guidelines for the 30-day follow-up are located in Appendix H. Please refer to these guidelines for suggestions on the best strategies for obtaining complete 30-day follow-up.

REMEMBER: Each patient must be followed out to 30 days, not just
through discharge from the hospital.

2.4.4 Disagreement Resolution

If you encounter disagreement between your case assessment and what the surgeon of record believes should be reported, the Surgeon Champion should make the final decision. To aid the Surgeon Champion in his/her decision, provide him/her with a copy of the definitions to verify that they have been applied correctly.

If you encounter disagreement between the data you have reported and what the Surgeon Champion believes should be reported, please contact your Nurse Coordinator. Provide him/her with details of the case and the area of conflict. S/he can then discuss the issue with the Surgeon Champion to arrive at a decision.

2.4.5 Data Entry in the ACS NSQIP Pediatric Workstation

Chapter 5 will detail the process of data entry into the ACS NSQIP Pediatric workstation.

2.4.6 File the data collection worksheet

Once the case is submitted, file the data collection worksheet. Retain the worksheet for one fiscal year after the current fiscal year of data collection or for a longer period as designated by your institution.