Guidelines for Validation of Selected AHRQ Quality Indicators

(Version 1.2_11/08/2007)

PSI 9: Postoperative Hemorrhage and Hematoma

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of
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Getting started

Prior to starting data abstraction, familiarize yourself with the medical record, pertinent health information policies and procedures specific for your medical center, as well as the specific Patient Safety Indicator (PSI) abstraction guideline and instrument.

Review the “Getting Started” document (AHRQ_Pilot_Getting_Started.doc).

The abstraction Instrument is provided as Appendix A of this document.

General Instructions for Completing the AHRQ Study Record

Please complete all data fields: All data fields must be completed to enable submission of a Patient Record to the AHRQ Patient Safety Indicator (PSI) Database. If you do not have the information for a given field, check the “Not Documented” box. Except as noted, avoid leaving any questions blank. Most questions that relate to specific findings or data elements default to “no” if left unchecked.

We assume that if a finding is not documented in the medical records that it does not occur. Questions that relate to specific times, physical findings or laboratory values generally can be answered with”9”, “99”, “999”, “99:99” etc., if the necessary information is missing or uninterpretable. If you believe that a question should be answered in this manner, but the computer entry system does not allow it, contact your supervisor and/or AHRQ.

Use leading “zeros” to complete a number string **EXCEPT** for DRG and/or procedure codes. For example, if given a double digit entry and the number of events to be entered is less than 10, precede the entry with a zero (e.g., 07 for 7). ENTER all DRG and procedure codes as written with careful consideration of the decimal point. Do not right or left margin adjust and do not add any additional digits including ‘zeros”. For example, 38.9 should be entered as [_ 3 8.9 _].

Date/time: All dates are recorded in the [MM/DD/YYYY] format. All times are recorded using a 24-hour clock (or military time) [_ _ : _ _]. To convert clock time to military time, with the exception of midnight and noon, add 12 to any time after noon. For estimating time, use time anchors such as important events, television shows or other references to narrow the time window.

Information sources: All information entered into the database must be gleaned from the medical record. Many hospitals are in the process of converting from paper to an electronic medical record (EMR or eMR). It is acceptable to use a combination of sources, as long as the record retrieved was an approved component of the record system at the time care was rendered. It

is permissible to obtain missing reports. For example, if the patient had a MRI but the final MRI report is missing. It is acceptable to access the report on-line or to obtain a copy from the radiology department. Electronic generated reports used for diagnoses should contain an electronic signature.

Conflicting information: For conflicting information in the record, document the finding of the most senior member of the patient care team. The hierarchy from most senior to junior is as follows:

- ❑ Primary, attending or consulting physician
- ❑ Chief or senior resident (e.g., generally 3rd or 4th year or higher depending on specialty)
- ❑ Junior resident (e.g. 2nd year or PG2)
- ❑ Intern (e.g., 1st year or PG1)
- ❑ Medical student (with MD signature)
- ❑ Physician extender [physician assistant (PA), Nurse Practitioner (NP), mid-wife, or advanced practice RN [clinical nurse specialists (CNS), certified registered nurse anesthetists (CRNA) or other]
- ❑ PA student or NP student (with physician signature)
- ❑ RN (registered nurse with or without further certifications regardless of level of entry into practice such as ASN, BSN, MSN, etc).
- ❑ Other licensed and applied healthcare professionals such as a licensed practical nurse (LPN), vocational nurse (LVN) nurse, physical therapist (PT), dietician, etc.
- ❑ Unlicensed assistive personnel (e.g., physical therapy aid, nutritional aid, laboratory assistant, nursing assistant or nursing aid).

Notes completed by students should not be used for review unless cosigned by a physician or other appropriate level staff. Medical student notes are often labeled MS3, MSIII, MS4, MSIV, or AI (acting intern). Residents notes may be labeled as R4, R3, R2, R1 or RPN" (for resident progress note with the corresponding year of training), PG4, PG3 etc., or PGY4, PGY3 respectively (for postgraduate year); or HO3, HO4, etc. (for house officer followed by the training year). The more senior resident in a leadership role may use the title "chief resident".

Several types of inconsistencies may occur in the medical record. Except as described in subsequent sections, inconsistencies should be resolved as follows:

a. If two notes are directly contradictory (e.g., one physician describes the patient's medical problem as stable but another specially states unstable), record the findings of the more senior person. If the contradictory notes are written by individuals at the same level (e.g., two attending physicians), record the findings of the person with more specialized knowledge and expertise in the specific area (e.g. a surgeon for surgical findings and an internist or cardiologist for cardiopulmonary findings).

b. If two notes are inconsistent but not directly contradictory (e.g., one physician reports “an accidental laceration of the bladder”, but another “does not report that any accidental laceration occurred”, record the findings of the more senior person. If the inconsistent notes are written by individuals at the same level (e.g., two attending) look for other evidence in the chart (e.g. nursing, laboratory or radiology notes) that corroborates the more specific or serious finding. If such evidence cannot be found, record the findings of the person with more specialized knowledge and expertise.

c. If two notes are inconsistent due to omission of relevant information (e.g. one physician states “deep vein thrombosis ” but another does not mention deep vein thrombosis), the note that provides the most specific information relative to that data element should always be used (regardless of seniority).

Data verification: Each page of the medical record should contain at least two unique patient identifiers (e.g., medical record number, patient name, date of birth, etc.). While abstracting data, please confirm that each page of the medical record is for the index patient and associated hospital admission. It is not uncommon for portions of the record to be misfiled.

Case Ascertainment

Patients included in the AHRQ PI validation database: This is a retrospective chart review based on a computer randomized sample (without replacement) generated from administrative data. This sample includes patients discharged within the last 12-24 months. Data collection should occur between March 2008 and May 2008. Each hospital participating in the AHRQ PSI Validation Project will receive a computer generated list of patients for data abstraction. This list is subsequently referred to as the sampling list. The sampling list will contain an AHRQ unique patient identification code number as well as the medical record or patient control number to be used for chart identification.

It is extremely important that you include only patients listed on your sampling list. Do not substitute a patient with a like diagnosis. Patients selected for this validation project were sampled based on the following inclusion and exclusion criteria.

Inclusion criteria

Selected patients should have ALL of the following criteria:

- Have an elective surgical discharge DRG code*
- An ICD-9-CM code for an operating room procedure (meaning that the procedure was performed in the operating room)
- Be 18 years of age or older

In addition, the patient should have an ICD-9-CM code for at least one of the following:

- Postoperative hemorrhage OR postoperative hematoma in any secondary diagnosis field (e.g., 99811 or 99812)
- Postoperative control of hemorrhage or for drainage of hematoma in any procedure code field (e.g., 287, 3880-9, 3941, 3998, 4995, 5793 and 6094).

*A list of all medical and surgical codes is available on the AHRQ Quality Web Site: http://www.qualityindicators.ahrq.gov.

Exclusion criteria

Patients in the sample should have none of the following exclusions:

- A postoperative hemorrhage or postoperative hematoma that was known at the time of admission (principal diagnosis or secondary diagnosis present on admission, if known)
- Where the only operating room procedure is postoperative control of hemorrhage or drainage of hematoma.
- A procedure for postoperative control of hemorrhage or drainage of hematoma that occurs before the first operating room procedure.
- A major diagnosis category code related to pregnancy, childbirth, and puerperium (MDC 14).

For additional information on inclusion and exclusion criteria, refer to the AHRQ technical guidelines (March 2007).

COMPLETING THE PATIENT RECORD

Section 1: Abstractor details

QUESTION 1.1: Date abstraction completed

Abstraction date: Enter the date of the chart abstraction using the MM/DD/YYYY format.

QUESTION 1.2: Abstractor identification number

Abstractor identification: Each abstractor will have a unique log-in identifier linked to a unique abstractor identification number. It is essential that each abstractor use their assigned identifier and password when signing into the AHRQ PSI program and in completing data abstraction. For most hospitals, this will be the abstractors initials.

Section 2: Record identification/validation

QUESTION 2.1: AHRQ Study identification number

AHRQ study identification number: Enter the AHRQ study identification code of the record you are abstracting. This number can be found on the computer generated sampling list. It is important that you have the correct chart before proceeding.

QUESTION 2.2: Medical record number/Patient control number

Medical record number (MRN, MR# or Patient control number): The medical record/patient control number will be used for audit purposes and patient verification only. If the medical record/patient control number does not match the AHRQ study identification code, do not continue. If the patient has been admitted under more than one medical record number, ensure that the primary and final medical record numbers match the sampling list. If there are any questions regarding the validity of the medical record number(s), notify your supervisor and/or appropriate departments to establish the correct number for the patient. If there is a conflict in the medical record number and AHRQ study number that cannot be easily rectified or resolved, notify the coordinating center.

Preferred data source: Admission record.

QUESTION 2.3: What is the patient's date of birth?

Date of birth (DOB): Use the DOB on the admission or face sheet. Data used for analysis will contain the calculated age. Use a leading zero when entering single digit months (e.g., 03 for March).

Preferred data source: Admitting form.

QUESTION 2.4: What is the patient's gender?

Gender: Enter if the patient is a male or female.

Preferred data source: Use the admission or face sheet followed by the physician's admission history and physical followed by the nurse's admission assessment.

Common Problems/ Questions: *Often there is conflicting information concerning demographic information. If the data element (e.g., gender, birth date, etc.) is recorded differently on the admission sheet and on other parts of the medical record, check several sources to verify the correct response. If an incorrect demographic is entered on admission, it will appear on all system generated reports until changed (i.e., laboratory test, diagnostic procedures, etc). Use reports that are not automatically generated to verify information (e.g. history and physical).*

QUESTION 2.5: What was the date of hospital admission?

Admission date: Verify the month, day and year the patient was admitted to the hospital. If there are conflicting times in the medical record, use the time on the face sheet followed by the admitting assessment form. If there are conflicts greater than 24-hour between the sampling list admit date and chart date, notify the coordinating center.

Preferred data sources: Face sheet, Nursing Admission Assessment Record, History and Physical (H&P), pre-operative assessment form if admitted directly to the pre-op area.

QUESTION 2.6: What was the discharge date?

Discharge date: Enter the month, day and year the patient was discharged from the acute care hospital or index facility. This includes transfer to a non-acute care area associated within the same hospital system (e.g., a sub-acute care unit, long-term care, or rehabilitation area). For patients that expired during hospitalization, use the date the patient was pronounced.

Section 3: Record identification/validation

QUESTION 3.1: Was the principal diagnosis related to pregnancy or a pregnancy related condition?

Major diagnostic code (MDC) 14: Pregnancy related conditions are those associated with pregnancy, childbirth, and the puerperium. For yes answers, give a brief description in the TEXT BOX provided on why these patients may have been included in the sample and then END the FORM. Do not exclude pregnant women admitted for other conditions (those conditions unrelated to childbirth). For example: Include a woman who is pregnant admitted for elective knee surgery but exclude a woman admitted for bleeding complications related to pregnancy.

Preferred data sources: History and physical, face sheet/coding sheet, progress notes, operating room records, surgical notes and consultative records.

QUESTION 3.2: Was the patient's primary reason for hospitalization related to a post-operative hemorrhage or hematoma from a previous operative procedure?

Prior condition: Answer YES and provide a brief explanation in the TEXT BOX of the circumstances related to the reason for admission if the patient's admission was related to a post-operative hemorrhage or hematoma from a surgery associated with a previous admission or outpatient procedure (not associated with this admission). Although an exclusion criterion, continue to abstract the chart. This will help us in the identification of false-positive cases and with the functionality of the PSI. Outpatient procedures associated with this admission should be included as previous procedures or a YES response (e.g., a patient admitted under observation status because of an ambulatory procedure that is then changed to an inpatient).

Preferred data sources: History and physical, progress notes, face sheet/coding record, operating room records, surgical notes and consultative records.

QUESTION 3.3: Did the patient undergo a surgical procedure in an operating room?

Operative room: State whether or not the patient had an operation in an operating room regardless of severity or the level of anesthesia. Answer NO, for surgical procedures performed outside of the operating room. For example: an aneurysm coiling performed in a neuro-interventional suite or a tracheostomy or intraventricular catheter placement performed at the patient's beside.

Preferred data sources: Operating room records, anesthesia records, procedure notes, surgical notes, progress notes and consultative records.

Branching patterns:

For NO answers, proceed with question 3.4.
For YES answers, skip to question 3.5.

QUESTION 3.4: If Q 3.3=NO, did the patient have an operative procedure that took place outside of the operating room?

Procedural suites: If the patient had a surgical procedure performed outside of the operating room, select YES and then select the location that best describes where the procedure took place. Although this indicator targets procedures that are performed in the operating room, continue to abstract the record. If the patient did not have an operative procedure, regardless of location, select NO and provide an explanation on why this chart was flagged for review and then END the form. Select "other" for locations not listed such as an ambulatory surgery suite.

Interventional radiology or cardiology suite synonyms and inclusions:

- ☐ Cardiac interventional suite
- ☐ Neuroradiology interventional suite
- ☐ Radiology interventional suite

Post-anesthesia Care Unit (PACU) synonyms and inclusions:

- ☐ Recovery room
- ☐ Room within a PACU used for special procedures

Intensive Care Unit synonyms and inclusions:

- ☐ Any critical care or intensive care unit
- ☐ Coronary care unit (CCU)
- ☐ Medical intensive care unit (MICU)
- ☐ Surgical intensive care unit (SICU)
- ☐ Trauma intensive care unit (TICU)
- ☐ Neurosurgical intensive care unit (NSICU)
- ☐ Room within an ICU used for special procedures

Emergency department synonyms and inclusions:

- ☐ Urgent care
- ☐ Fast-track unit

Special procedure suite synonyms and inclusions:

- ☐ GI laboratory
- ☐ Respiratory laboratory

Preferred data sources: Operating room records, anesthesia records, procedure notes, surgical notes, progress notes and consultative records.

QUESTION 3.5: Did the patient experience a post-operative hemorrhage or hematoma during this hospitalization?

Hemorrhage/hematoma: Only answer YES if the patient underwent a surgical procedure during this hospitalization and then subsequently experienced a post-operative associated hemorrhage or hematoma. IF the patient did not experience a post-operative hemorrhage or hematoma during this hospitalization, answer NO and provide an explanation on why you believe that the chart was flagged for review in the TEXT BOX provided and then end the form.

A hematoma is a localized mass of extravasated blood that is relatively or completely confined within an organ or tissue, a space, or a potential space; the blood is usually clotted (or partly clotted), and depending on how long it has been there, may manifest various degrees of organization and decolorization. This is not to be confused with a seroma. A seroma is a mass or tumefaction caused by the localized accumulation of serum within a tissue or organ.

Hematoma and hemorrhage synonyms and inclusions:

- Excessive bleeding
- Pocket or pooled blood
- Desanguination
- Exsanguination (sic)
- Blood tumor
- Hemorrhage stages I-IV
- Hypovolemia secondary to blood loss
- Copious blood loss

Exclusions: Seroma, pus pocket, and abscess.

Preferred data sources: History and physical, progress notes, face sheet/coding record, operating room records, surgical notes and consultative records.

QUESTION 3.6: IF Q 3.5 = YES, was the post-operative hemorrhage or hematoma associated with the operative site?

Source: Answer YES if the hemorrhage or hematoma was associated with an operative site (either primary or secondary tissues and/or structures). This includes tissues that were divided or cavities that were entered in the course of the operation. If the bleed occurred at a non-surgical site, select if the site was the gastrointestinal tract or other. For bleeds elsewhere, answer YES and then select if the bleed was associated with the gastrointestinal tract or other. For “other” answers, specify the location of the bleed in the space provided. There may be a rare case where the patient may have had a marginal ulceration post-enterectomy or post-gastric resection that was not related to operative site, although near the anastomosis site. These should be considered as a “no” response.

Do not rely on coding alone. The majority of the time, the 998.11 post op hemorrhage code is used to represent bleeding directly related to the operative site(s). Hemorrhage that occurs in the post-operative period that is not related to the operative site or documented as directly related to the surgery is typically classified to site-specific hemorrhage codes. However, there may be occurrences where the 998.11 code is used for non-operative site bleeding.

Preferred data sources: Operating room records, anesthesia records, procedure notes, surgical notes, progress notes and consultative records.

Section 4: Risk factors

QUESTION 4.1: How many operations did the patient undergo during this hospitalization?

Number of operative events: State the number of separate operative events that the patient underwent during the hospital stay. Include all major operative procedures regardless of location.

Preferred data sources: Operating room records, anesthesia records, procedure notes, surgical notes, progress notes, consultative records and coding form.

QUESTION 4.2: Did the patient have any of the following conditions (known prior to or diagnosed during this hospitalization)? Select all that apply.

History: Select as many risk factors that the patient had that were either known on admission or diagnosed during the hospitalization. Only include antiplatelet or anticoagulant medication if the patient had therapeutic effects of the medication at the time of admission. For example, do not select “therapeutic effects of anticoagulant medication” if the patient stopped their Warfarin in the week prior to admission in preparation for surgery.

Inherited coagulopathy synonyms and inclusions:

- ☐ Hemophilia (A or B)
- ☐ Christmas disease
- ☐ Other clotting factor deficiency
- ☐ von Willebrand disease
- ☐ Glanzmann thrombasthenia
- ☐ Bernard-Soulier syndrome,
- ☐ Other inherited platelet disorder

Severe liver disease synonyms and inclusions:

- ☐ Severe alcoholic liver disease
- ☐ Liver disease with hepatorenal failure syndrome

- ☐ Liver disease with hepatic encephalopathy
- ☐ Liver disease with hepatopulmonary syndrome
- ☐ Liver disease associated with multi-system symptomology such as ascites, portal hypertension, and/or endocrine disturbances.
- ☐ Significant liver disease due to hepatitis A, B or C (non A-non-B)

Do not include:

- Minor or transitory elevations in liver enzymes
- Focal nodular hyperplasia
- Hemangiomas
- Hepatic adenomas
- Noninfectious cystic lesions
- Positive serology for hepatitis without major symptomology and significant impairment in liver function.

History of anticoagulant medication use synonyms and inclusions:

- ☐ Warfarin (Coumadin)
  Synonyms/inclusions for warfarin include:
  - Coumadin
  - Vitamin K inhibitor
  - Dicoumarol or Dicumarol
  - Athrombin-K
- ☐ Heparin
- ☐ Low molecular weight heparin
  Synonyms/inclusions for low molecular weight heparin (LMWH) include;
  - Enoxaparin (Lovenox)
  - Dalteparin (Fragmin)
  - Fondaparinux (Arixtra)
  - Danaparoid (Orgaran)
  - Tinzaparin (Innohep)
- ☐ Synthetic pentasaccharide inhibitors of factor Xa
  - Fondaparinux
  - Idraparinux
- ☐ Direct thrombin inhibitors
  - Argatroban
  - Lepirudin
  - Bivalirudin

History of anti-platelet medication use

- ☐ Aspirin (ASA) or aspirin containing products
  - Note: Many arthritis medications contain aspirin
  - Acetylsalicylic acid
  - Alka-Seltzer Pain Reliever
  - Aggrenox
  - Adprin B®
  - Anacin
  - Asriptin ®

- Aspergum®
- Bufferin®
- Cope®
- Easprin®
- Endodan®
- Excedrin®
- Fortabs®
- Genacote®
- Magnaprin®
- Percodan®
- Stanback®
- Sureprin®
- Talwin®
- Zorprin®
- Bayer® aspirin
- Butalbital®
- Darvon®
- Ecotrin®
- Equagesic®
- Fiorinal®
- Gelpirin®
- Halfprin®
- P-A-C®
- Roxiprin®
- Supac®
- Synalgos
- Vanquish®

☐ Adenosine diphosphate (ADP) receptor inhibitors
- Clopidogrel (Plavix)
- Ticlopidine (Ticlid)

☐ Phosphodiesterase inhibitors
- Cilostazol (Pletal)

☐ Glycoprotein IIB/IIIA inhibitors (intravenous use only)
- Abciximab (ReoPro)
- Eptifibatide (Integrilin)
- Tirofiban (Aggrastat)

☐ Adenosine reuptake inhibitors
- Dipyridamole (Persantine)

Exclusions: Do not include the following.

(1) Non-steroidal anti-inflammatory drugs (NSAID) other than aspirin such as Advil, Aleve, Anaprox, Ansaid, Arthrotec, Cataflam, Clinoril, Daypro, Diclofenac, Etodolac, Excedrin IB, Feldene, Fenoprofen, Flurbiprofen, Ibuprofen, Indomethacin, Indameth, Indocin, Ketoprofen, Ketorolac, Lodine, Meclofenamate, Meclodium, Medipren, Mefenamic acid, Meloxicam, Midol, Mobic, Motrin, Nabumetone, Nalfon, Naproxen, Naprosyn, Nuprin, Orudis, Oruvail, Oxaprozin, Pamprin IB, Piroxicam, Ponstel, Relafen, Rufen, Sulindac, Tolmetin, Tolectin, Tolectin DS, Toradol, and Voltaren.

(2) Cyclooxygenase (COX) inhibitors such as Celecoxib (Celebrex), Meloxicam (Mobic) and Valdecoxib (Bextra).

Preferred data sources: History and physical, pharmacy records, nursing records.

QUESTION 4.3: Record whether (and when) the patient received any of the following medications during this hospitalization prior to the episode of postoperative hemorrhage or hematoma.

Antithrombotic medication: Select all agents that the patient received prior to the episode of postoperative hemorrhage or hematoma. For all agents select, state the data when it was administered. See question 4.2 for list of anticoagulants and antiplatelet agents.

If either Q4.3b (warfarin) or Q4.3c (heparin) is answered "yes," please answer Q4.4. If Q4.3b (warfarin) and Q4.3c (heparin) are both answered "no," please go to Section 5.

Preferred data sources: Medication administration records (MAR), physician orders, and physician progress records.

Section 5: Evaluation and treatment

Questions 5.1-5.10 refer to the first operative procedure. At a minimum, Q 5.1-5.6 should be answered for all patients.

QUESTION 5.1: List the name(s) and ICD-9-CM code(s) for each major procedure performed during the first operation of this hospitalization. Limit your answer to the top five procedures.

First operation: Only include major procedures performed during the first trip to the operating room (or designated area). Do not include incidental or minor procedures such as an EKG or radiologic procedure performed as part of the operation.

Preferred data sources: Operating room records, anesthesia records, procedure notes, surgical notes, progress notes, consultative records and coding form.

QUESTION 5.2: Using physician notes or operative notes, describe the indication(s) for the procedure(s). Use exact wording from the medical record.

Indication: Succinctly describe, using physician documentation, the primary indication(s) for the procedure.

Preferred data sources: Operating room records, anesthesia records, procedure notes, surgical notes, progress notes, and consultative records.

QUESTION 5.3 State the incision start date __/_ _ / _ _ _ _

Start date: Enter the date that the incision was made. If the incision time is not available, use the anesthesia start date followed by the operative start date.

Preferred data source: Operating room records, anesthesia records, procedure notes, surgical notes, progress notes, and consultative records.

QUESTION 5.4 State the operation incision time _ _ : _ _

Incision time: Enter the incision time (the time the surgeon made the first cut). Do not confuse this time with the anesthesia or operation start time. If the incision time is not present, then use the anesthesia start time followed by the time the operation was started.

Preferred data source: Operating room records, anesthesia records, procedure notes, surgical notes, progress notes, and consultative records.

QUESTION 5.5: Record the urgency of the procedure(s) performed during this first operation.

Urgency: Select emergent or unscheduled if the surgery was unplanned and could not be delayed until a subsequent admission. Examples include a patient that presents with chest pain requiring cardiac by-pass surgery or a patient that presents with right upper quadrant pain that undergoes an emergent appendectomy. If the surgery can be delayed but is scheduled during the index admission for convenience, select “scheduled non-emergently during this admission”. These surgeries may or may not be associated with the admitting diagnosis. An example would be a patient admitted for a urinary tract infection that that is later found to have a small tumor. For convenience, the patient is scheduled for the tumor removal during the present hospitalization. Select non-emergent or elective for patients admitted for a priorly scheduled admission. Only check critical documentation missing if records are missing and you cannot surmise the urgency of the surgery from the medical records.

Preferred data source: Operating room records, anesthesia records, procedure notes, surgical notes, progress notes, consultative records and coding sheet.

QUESTION 5.6: Did the procedure(s) involve an attempt at control of hemorrhage, or drainage or evacuation of hematoma, that was either known or suspected to be ongoing at the time this operation began?

Known hemorrhage: If the hemorrhage or hematoma was present at the time of the first surgery, answer YES. End the abstraction if this was the only hematoma or hemorrhage that the patient experienced. However, if the patient goes on to develop a post-operative hemorrhage or hematoma either related to this surgery or a subsequent surgery, continue to abstract the case.

Preferred data source: Surgeon report/records, anesthesia record, operating room records, post-operative procedure notes, progress notes, and consultative records.

QUESTION 5.7: Did the patient experience a hemorrhage or hematoma **during** this operation?

Timing: If the patient experienced a hemorrhage (or hematoma) during the intra-operative period answer as YES and then answer question 5.8. If the patient did not experience an intraoperative hemorrhage or hematoma, skip to question 5.9.

Branching pattern: **If YES, answer Q 5.8**
If NO, skip to Q 5.9.

Preferred data source: Operating room records, anesthesia records, procedure notes, surgical notes, progress notes, and consultative records.

QUESTION 5.8: Using exact wording from the operative note, describe the source of the hemorrhage or hematoma. Include both the anatomic location/region/structure(s) as well as the specific vessel name(s), if any.

Source: For patients that experienced a hemorrhage or hematoma intra-operatively, state the source of the hemorrhage and include the location, region, or structures affected as well as the specific vessel name that was responsible for the hemorrhage or hematoma (if applicable).

Preferred data source: Surgeon report/records, anesthesia record, operating room records, post-operative procedure notes, progress notes, and consultative records.

QUESTION 5.9: Indicate the estimated blood loss (in mL) that is recorded for this operation:

Estimated blood loss (EBL): Enter the total or estimated blood loss for this procedure using either the surgeon's or anesthesia records. If there is a discrepancy, enter the largest volume of the two.

Preferred data source: Surgeon report/records, anesthesia record, operating room records, post-operative procedure notes, progress notes, and consultative records.

QUESTION 5.10: How many units of red blood cells or whole blood did the patient receive during the procedure? Do not include transfusions from an intra-operative salvage device or from cell-saver units.

Infusions: Enter the number of units of red blood cells or whole blood the patient received during this procedure. Do not include other blood products (e.g., fresh frozen plasma or platelets), blood received outside of the operating room, or blood from an intra-operative salvage device such as from a cell-saver. Include all blood started in the operating room regardless of the end-infusion time.

Preferred data source: Operative record, anesthesia record, post-anesthesia care unit record, operative procedure notes, infusion/blood reports.

Answer questions 5.11-5.16 if the postoperative hemorrhage or hematoma PSI event was not associated with the first operation. Otherwise skip to Q 5.17.

QUESTION 5.11: If the PSI event was not associated with the first operation, list the name(s) and ICD-9-CM code(s) of each major procedure(s) performed during the subsequent operation that appears most likely to have caused the postoperative hemorrhage or hematoma. Limit your answer to the top five procedures.

Causative operation: If the hematoma or hemorrhage was associated with the first or index procedure, do not complete this section, regardless if the patient had additional operative procedures**.** Do not include incidental or minor procedures performed as part of the larger operation (e.g., EKG or chest x-ray).

Preferred data source: Coding record, operative records, discharge summary, surgical records, anesthesia records, post-anesthesia care unit records, operative procedure notes, and progress notes.

QUESTION 5.12: Using exact wording from physician or operative notes, describe the indication(s) for the procedure(s).

Indications: State the primary reason or indication for the surgery using physician documentation. For example: For a patient that had the following procedures: 1) Cystoscopy, 2) Meatotomy and 3) Transurethral resection of prostate for benign prostatic hyperplasia, the indication for the surgery would bladder outlet obstruction caused by prostate hyperplasia or prostatic hyperplasia.

Preferred data source: Surgical records, operative records, coding record, discharge summary, anesthesia records, post-anesthesia care unit records, operative procedure notes, and progress notes.

QUESTION 5.13: State the incision start date and time.

Incision date and time: Enter the incision date and time which is the time the surgeon made the first cut. Do not confuse this time with the anesthesia or operation start date and time. If the incision time is not present, then use the anesthesia start date and time followed by the operation start date and time.

Preferred data source: Operating room records, anesthesia records, procedure notes, surgical notes, progress notes, consultative records and coding sheet.

QUESTION 5.14: Record the urgency of the procedures performed during this operation.

Urgency: See question 5.5.

QUESTION 5.15: Indicate the estimated blood loss (in mL) that is recorded in the surgeons or anesthesiologist's record for this operation:

Blood loss: See question 5.9

Preferred data source: Operating room records, anesthesia records, procedure notes, surgical notes, progress notes, consultative records and coding sheet.

QUESTION 5.16: How many units of red blood cells or whole blood did the patient receive during the procedure? Do not include intra-operative salvage device or cell-saver units.

Infusions: See question 5.10.

Preferred data source: Operative record, anesthesia record, post-anesthesia care unit record, operative procedure notes, infusion/blood reports.

Hemorrhage/Hematoma:

QUESTION 5.17: Record the earliest date and time the hemorrhage and/or hematoma was first either suspected or identified. Use the first event in the case of multiple events.

Recognition of hematoma or hemorrhage: Use physician documentation. The possibility or suspicion of a hemorrhage or hematoma may not be explicitly documented in the medical record, especially early on when the differential diagnosis may include fluid shifts and hemodilution related to surgery. Look for the ordering of serial or repeat hematocrit and/or hemoglobin values along with clinical sign and symptoms (listed in Q 5.20) in answering this question.

Preferred data source: Progress notes, surgical notes, transfer notes, procedure notes, order sheets, and laboratory indications.

QUESTION 5.18: What signs, symptoms, or laboratory findings did the patient have that prompted identification of the hemorrhage and/or hematoma? Check all that apply.

Signs and symptoms: Select all of the listed signs, symptoms and laboratory results that most likely associated with the hemorrhage or hematoma. Do not include sign and symptoms associated with the patient's baseline or underlying medical condition(s).

Preferred data source: Physician or physician extender documentation is preferred such as progress notes, transfer notes, procedures notes, and surgical records.

QUESTION 5.19: Record the patient's level of nursing care at the time the hemorrhage or hematoma was first identified.

Level of care: Select the nursing care unit that the patient was housed at the time the hemorrhage or hematoma was first diagnosed or suspected. Only select operating room or special procedure unit if the hemorrhage or hematoma occurred and was diagnosed there. For example, if the patient was experiencing signs and symptoms of hemorrhage while on the medical-surgical unit and was taken to the operating for an exploratory laparotomy where it was discovered that they had a surgical related hematoma, select medical-surgical unit, not operating room. However, if the surgeon nicked a major blood vessel during an operative procedure leading to a hemorrhage and its' subsequent containment during the time the patient was in the operating room, select operating room.

Preferred data source: Physician orders, progress notes, and nursing records.

QUESTION 5.20: Record the patient's lowest temperature staring at the time of the procedure that led to the hemorrhage or hematoma to 24-hours post-procedure.

Lowest temperature: Include the time and date associated with the patient's lowest recorded temperature. Use the time interval from procedure start time to 24-hour post of the procedure associated with the hemorrhage or hematoma.

Preferred data source: Anesthesia record, post-anesthesia care units, and nursing flow-sheets of the units the patient was assigned during this time period.

QUESTION 5.21: Record the most extreme values of the following tests for the time period following the procedure that led to the postoperative hematoma and/or hemorrhage up until hospital discharge.

Extreme values: These values are related to patient's ability to clot. Record the lowest platelet value, highest PTT (e.g., partial thromboplastin time, activated

partial thromboplastin time or APTT) and highest INR (International Normalized Ratio) staring with the time of the beginning of the causative procedure and the identification of the first suspected hemorrhage or hematoma.

Preferred data source: Laboratory result flowsheets or records, physician documentation such as progress notes, nursing flowsheet, anesthesia record, and post-anesthesia care unit record.

QUESTION 5.22: Did the patient have a reparative or exploratory procedure to address the hematoma or hemorrhage? Select all that apply.

Reparative procedure(s): Select if the patient had a reparative or exploratory procedure performed either in the operating room and/or outside of the operating room. Some patients may have under gone both. If the patient did not have a reparative and/or an exploratory procedure select NO and then explain why no intervention took place in the TEXT BOX provided. Only the first hemorrhage or hematoma is of interest.

Preferred data source: Progress notes, surgical notes, procedure notes, anesthesia records, and consultation records.

Branching instructions:

> **If the patient had a procedure performed in the operating room, answer questions OR 1-8 for each reparative or operative procedure the patient underwent related to the hemorrhage or hematoma.**
>
> **If the patient had any reparative or exploratory procedure performed outside of the operating room, answer questions P.1-7.**
>
> **If the patient had no interventions, skip to question 6.1.**

Complete questions labeled OR 1- through OR 8 for each operative procedure (either reparative or explorative) performed as a result of the hemorrhage or hematoma. Enter the operative procedure number as they occurred (e.g., one for the first reparative procedure, two for the second, etc.) at the top of each page that relates to the corresponding set of questions.

QUESTION OR.1: What was the start date and time of the reparative or exploratory operative procedure?

Incision date and time: Enter the incision date and time which is the time the surgeon made the first cut. Do not confuse this time with the anesthesia or operation start date and time. If the incision time is not present, then use the anesthesia start date and time followed by the operation start date and time.

Preferred data source: Operating room records, anesthesia records, procedure notes, surgical notes, progress notes, consultative records and coding sheet.

QUESTION OR.2: Using only physician documentation, select which of the following factors were responsible for the hemorrhage or hematoma. Mark unknown if critical documentation is missing and/or if causation is unclear. Check all that apply. Select other and include a brief description if other factors were responsible for the hemorrhage or hematoma.

Preferred data source: Surgeon documentation such as the operative report, procedure note, progress record, post-operative record, and discharge summary.

QUESTION OR.3: Using exact wording from the operative note, describe the source of the hemorrhage or hematoma. Include both the anatomic location/region/structure(s) as well as the specific vessel name(s), if any.

Source: Two examples include: 1) "'two small muscular bleeders off the pectoralis" and 2) "active bleeding of a pseudoaneurysm on the common femoral artery".

Preferred data source: Surgeon documentation such as the operative report, procedure note, progress record, post-operative record, and discharge summary.

QUESTION OR.4: Based on the operative note, what measures were used to control the hemorrhage and/or hematoma? Check all that apply.

Repair: Select all methods used to control the bleeding. If the methods used do not fit into the categories listed, select other and describe the measures taken in the TEXT BOX.

Two examples from the medical record include:

Example 1: "…a saphenous vein patch was used to repair the active bleeding from the common femoral artery pseudoaneurysm… an arteriotomy was made to the anterior surface and Bovie was passed and thrombectomy of the SFA and profunda femoral arteries and segment of saphenous vein was used along the patch of the anterior surface using Prolene …." . In this example, one would chose repair of a blood vessel with sparing of blood and electrocautery.

Example 2: ' …After irrigation, cautery was used for hemostasis, which was completely ineffective. The bleeding continued right through the cautery. Clamps were ineffective on the muscle as there were no sizable vessels. After pressure was held, and verification that all factors had been administered, Tisseel tissue glue was then applied to all surfaces and wet moist pressure was applied to all skin surfaces'. In this case, you would choose electrocautery,

compression, and topical hemostatic agent. You would not include persistent clamping since it was not in place at the conclusion of the procedure.

Preferred data source: Surgeon documentation such as the operative report, procedure note, and progress record.

QUESTION OR.6: Using the operative note, approximately how much volume (in mL) of hematoma was drained/evacuated (fill in zero if no hematoma was drained)?

Volume: The surgeon will usually state in the operative report the volume evacuated or drained from the hematoma. This volume may or may not be reflective in the final intake and output. For example in one medical record reviewed, the physician stated "… the hematoma was opened and there was a fair amount of clot, at least 900 cc of old clot was evacuated". However the total estimated blood loss for the procedure was 600cc. In this example, record 900 cc or 900 mL. Use the most authoritive voice for conflicting information.

Preferred data source: Surgeon documentation such as the operative report or procedure note followed by the progress record.

QUESTION OR.7 Indicate the estimated blood loss (in mL) associated with this operation:

Estimated blood loss (EBL): Enter the total or estimated blood loss for this procedure using either the surgeon's or anesthesia records. If there is a discrepancy, enter the largest volume of the two.

Preferred data source: Surgeon documentation such as the operative report or procedure note followed by the progress record and/or anesthesia record.

QUESTION OR.8: How many units of red blood cells or whole blood did the patient receive during the procedure? Do not include intra-operative salvage device or cell-saver units.

Infusions: Enter the number of units of red blood cells or whole blood the patient received during this procedure. Do not include other blood products or blood received outside of the operating room or blood from intra-operative salvage devices such as from a cell-saver. Include all blood started in the operating room regardless of the infusion end-time.

Preferred data source: Operative record, anesthesia record, post-anesthesia care unit record, operative procedure notes, infusion/blood reports.

Branching patterns:

If the patient had more than reparative or exploratory surgery as a result of the index hematoma or hemorrhage, copy pages 8-9 and repeat questions OR1-OR8 for each event.

Answer the next set of questions, P1-8, for patients that underwent any <u>non-operative procedures</u> to control of manage the first or index hemorrhage and/or hematoma. Patients may have received non-operative and operative procedures for control of a hemorrhage or hematoma. In these cases, complete both sections.

QUESTIONS P.1-4: Please indicate the date, time, procedure and ICD-9-CM code for each non-operative procedure used to control or minimize the hemorrhage or hematoma.

Reparative procedures: Many patients may undergo more than one non-operative procedure. All procedures, regardless of the date and time delivered, should be documented on the table provided. Only include procedures aimed at controlling or minimizing the hematoma or hemorrhage. For example, do not include the placement of a central line for fluid resuscitation. For some simple procedures, there may not be a corresponding ICD-9-CM code. In these cases, provide the information that you do have such as the date, time and procedure performed.

Preferred data source: Operative records, anesthesia records, physician progress notes, and coding record.

QUESTION P.5: Using physician documentation, select which of the following factors were responsible for the hemorrhage or hematoma. Mark unknown if critical documentation is missing and/or if causation is unclear. Check all that apply.

Bleeding source: Select all of the factors that were responsible for the hemorrhage and/or hematoma. If other is selected, describe the factors in the TEXT BOX provided.

Preferred data source: Operative records, anesthesia records, physician progress notes, and consultative reports.

QUESTION P.6: Using exact wording from physician documentation, describe the source(s) of the hemorrhage or hematoma. Include anatomic location/region/ structure(s) as well as the specific vessel name(s), if any.

Location: For example: “Incision and drainage of right leg femoral artery hematoma was performed at the bedside. 500 cc of dark red blood was drained”.

Preferred data source: Operative records, anesthesia records, physician progress notes, and consultative reports.

QUESTION P.7: Using physicians' records, what measures were necessary to control the hemorrhage or hematoma? Check all that apply.

Control measures: Select all of the measures used to control the hemorrhage and/or hematoma. Select other if the method(s) used is not listed and then describe in the TEXT BOX provided. For example: '…endoscopic hemostasis of the variceal bleed was achieved by injection therapy followed by thermal electrohemostasis".

Preferred data source: Operative records, anesthesia records, physician progress notes, and consultative reports.

QUESTION P.8: Indicate the total estimated blood loss (in mL) that is recorded in the physicians' notes for this hemorrhage or hematoma: Include aspirated volumes for hematomas.

Estimated blood loss (EBL): Only mark documentation insufficient if critical documentation is missing. For example: Incision and drainage of left leg hematoma was performed at the bedside. 500 cc of dark red blood was drained.

Preferred data source: Operative records, anesthesia records, physician progress notes, and consultative reports.

Section 6: Outcomes

QUESTION 6.1: How much blood did the patient receive over the entire hospital stay?

Total transfusions: Enter the number of red blood cells or whole blood cells that the patient received during the entire hospital stay. Do no include agents from cell-saver or any other type of salvage device. Do not include fresh frozen plasma, platelets or other types of blood products.

Blood synonyms and inclusions:

- ☐ Frozen red blood cells
- ☐ Washed red blood cells
- ☐ Filtered red blood cells
- ☐ Whole blood
- ☐ Packed red blood cells or PRBCs
- ☐ Red blood cells (RBCs)

Preferred data source: Operative record, anesthesia record, post-anesthesia care unit record, operative procedure notes, infusion/blood reports.

QUESTION 6.2: Record the nadir (lowest) hemoglobin and hematocrit values during the time period from the causative procedure until hospital discharge (e.g., potentially related or attributable to the postoperative hemorrhage or hematoma).

Nadir values: Include the time and date of the values.

QUESTION 6.3: Does the medical record suggest that the patient suffered any adverse effects or consequences from the postoperative hemorrhage or hematoma? Check all that apply.

Adverse events: Select all and any adverse events that the patient incurred because of the postoperative hemorrhage or hematoma. Some of the effects or consequences require the abstractor to make a judgement call as many of the listed consequences may not be clearly documented. For example, if the patient was scheduled to be discharged on hospital day three (3), but because of the return to the operating room to control bleeding, was not discharged until day five (5), extended length of hospital stay should be selected. Also, if the patient had to stay in the hospital for antibiotic treatment due to an infected hematoma site, then the abstractor should select infection.

Preferred data source: Operative record, anesthesia record, post-anesthesia care unit record, operative procedure notes, infusion/blood reports.

QUESTION 6.4: Did the patient die during this admission?

Expiration: State if the patient died during this hospitalization.

Preferred data source: Operative record, anesthesia record, post-anesthesia care unit record, operative procedure notes, infusion/blood reports.

QUESTION 6.5: If Q 6.3 = YES, was the death related to the hemorrhage or hematoma?

Related death: State if the hemorrhage or hematoma was a cause or contributing factor in the patient's death.

Preferred data source: Operative record, anesthesia record, post-anesthesia care unit record, operative procedure notes, infusion/blood reports.

QUESTION 6.6: What the patient readmitted to the hospital within 30-days of discharge?

Readmitted: State if the patient was readmitted to hospital within 30 days of discharge. Only select critical documentation missing if the record is not available.

Preferred data sources: New history and physical or face sheet for other documentation associated with a subsequent admission.

QUESTION 6.7: If Q6.5 = Yes, was the readmission related to the hemorrhage or hematoma that the patient experienced during this hospitalization?

Readmission secondary to hemorrhage: This includes any reason related to hemorrhage or hematoma such as observation, blood transfusion and/or for a reparative or corrective procedure.

Preferred data source: Operative record, anesthesia record, post-anesthesia care unit record, operative procedure notes, infusion/blood reports.

QUESTION 6.8: If there are special circumstances or comments related to this case that you feel are important that were not captured in the survey, please state these in the TEXT BOX provided [limit 200 characters]:

Special circumstance: It is not necessary to complete this box. However, if there are important facts related to this case that were not captured in the data abstraction tool that you feel would be important to the validation project, please describe in the TEXT provided.

Preferred data sources: Medical record.