NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 1527 **NQF Project:** Surgery Endorsement Maintenance 2010

MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** RBC Transfusion Indication
De.2 **Brief description of measure:** Percentage of transfused red blood cell units (bags) with pre-transfusion hemoglobin or hematocrit result and clinical indication documented - applicable to inpatients of all ages
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** PBM-02 is part of the Patient Blood Management (PBM) measure set: PBM-01 (Transfusion Consent), PBM-03 (Plasma Transfusion Indication), PBM-04(Platelet Transfusion Indication),PBM-05 (Blood Administration Documentation), PBM-06 (Preoperative Anemia Screening), PBM-07 (Preoperative Blood Type Testing and Anitbody Screening).
De.4 **National Priority Partners Priority Area:** Care coordination, Safety, Overuse De.5 **IOM Quality Domain**: Effectiveness, Patient-centered, Safety De.6 **Consumer Care Need:** Getting better, Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	NQF Staff
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** Y☐ N☐

B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	**C** Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☐ N☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. ***Measures must be judged to be important to measure and report*** *in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Leading cause of morbidity/mortality, High resource use, Severity of illness, Patient/societal consequences of poor quality 1a.2 1a.3 **Summary of Evidence of High Impact:** Blood saves lives, but recent evidence and other management options should influence transfusion decisions today. Blood is a scarce resource due to an aging population of donors and blood usage is likely to rise due to an older population that is expected to need more blood that continues to increase in cost. Most importantly, accumulating literature demonstrates a strong (often dose-dependent) association between transfusion and adverse outcomes such as increased length of stay, postoperative infection, morbidity and mortality. As a result, many advocate the importance of transfusing a single unit followed by an assessment to determine if more blood is needed. 1a.4 **Citations for Evidence of High Impact:** Thomson A, Farmer S, Hofmann A, Isbister J, Shander A. Patient blood management - a new paradigm for transfusion medicine. ISBT Science Series (2009) 4, 423-435. NHMRC/ABST. Clinical practice guidelines on the use of blood and blood components. Commonwealth of Australia, NHMRC/ABST,2001. Madjdpour C, Spahn DR, Weiskopf RB. Anemia and perioperative red blood cell transfusion: A matter of tolerance. Crit Care Med 2006;34:S102-S106.	**1a** C☐ P☐ M☐ N☐

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Almost 20 years ago, a study reported significant variability in transfusion practice in 540 patients who underwent cardiac surgery. Despite consensus guidelines, there continues to be a wide variation in transfusion practice for similar procedures that varies between hospitals and clinicians today. If all hospitals adopted current best practice guidelines, there would be an opportunity to reduce transfusion exposure as reported by one surgical intensive care unit that implemented an evidence-based guideline and reduced the number of units infused and patients transfused without an increase in mortality.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
Several studies reported a wide variation in transfusion practice. An Austrian study found that orthopedic patients in 18 hospitals had transfusion rates from 12 to 87%. Another study of cardiac surgery patients in 12 Australasian teaching hospitals had red blood cell transfusion rates of 17 to 79%. A recent observational co-hort study in 2008 of 102,470 patients undergoing primary isolated cardiac artery bypass graft (CABG) surgery also showed wide variability in the red blood cell (RBC) transfusion rates independent of case mix. Another study showed that even with restrictive transfusion practice, 26% of intensive care patients received RBC transfusions to increase their hemoglobin when there was no evidence of bleeding.

1b.3 Citations for data on performance gap:
University HeatlthSystem Consortium. Blood use benchmarking project (2002) executive summary retrieved at www.uhc.edu, March 2008.
Brandt MM, Rubenfeld IL, Jordan J, Trivedi D, Horst HM. Transfusion insurgency: practice change through education and evidence-based recommendations. Amer J of Surg 2009;197:279-283.
Goodnough LT, Johnston MF, Toy PT. Transfusion Medicine Academic Award Group. The variability of transfusion practice in coronary artery bypass surgery. JAMA 1991;265(1):86-90.
Guerrero EB, Zhao Y, Obrien SM, Ferguson TB, Peterson ED, et al. Variation in use of blood transfusion in coronary artery bypass graft surgery. JAMA 2010;304(14) 1568-1575.
Stover EP, Siegel LC, Parks R, et al. Variability in transfusion practice for coronary artery bypass surgery persists despite national consensus guidelines: a 24-institution study. Institutions of the Multicenter Study of Perioperative Ischemia Research Group. Anesthesiology 1998:88;327-333.
Rao SV, Chiswell K, Sun JL, et al. International variation in the use of blood transfusion in patients with bnon-ST-segment elevation acute coronary syndromes. Am J Cardiol 2008:101;25-29.
Gombotz H, Rehak PH, Shander A, Hoffmann A. Blood use in elective surgery: The Austrian benchmark study. Transfusin 2007;47:1468-1480.
Daly DJ, Myles PS, Smith JA, et al. Anticoagulation , bleeding and blood transfusion practices in Australasian cardiac surgical practice. Anaesth Intensive Care 2007;35:760-768.
Walsh TS, Garrioch M, Maciver C, Lee RJ, MacKirdy F, et al. Red cell requirements for intensive care units adhering to evidence-based transfusion guidelines. Transfusion 2004;44:1405-1410.

1b.4 Summary of Data on disparities by population group:
Patients who have a CABG surgery are more likely to receive a RBC transfusion if they are women, older, received adenosine diphosphate inhibitors (anti-platelet drug-plavix, ticlid), had lower preoperative hematocrit and had other traditional risk factors for morbidity and mortality compared with patients that did not receive RBCs.

1b.5 Citations for data on Disparities:
Guerrero EB, Zhao Y, Obrien SM, Ferguson TB, Peterson ED, et al. Variation in use of blood transfusion in coronary artery bypass graft surgery. JAMA 2010;304(14) 1568-1575.

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1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Many experts concur that there is minimal evidence that blood will improve patient outcomes in many clinical situations and encourage other options be employed. Most advocate that blood transfusions should be avoided as much as possible except for patients in whom the benefit is greater than the risk due to the accumulating association between transfusion and adverse outcomes. Numerous patient populations have been identified

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with a growing list of adverse outcomes associated with RBC transfusions.

1c.2-3. Type of Evidence: Cohort study, Observational study, Evidence-based guideline, Randomized controlled trial, Expert opinion, Systematic synthesis of research, Meta-analysis

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
The incidence of adverse events that are common in medical literature include: increased incidence of postoperative infection, increased intensive (ICU) and hospital length of stay, increased rates of acute respiratory distress syndrome and multi-organ failure in the IUC and trauma patients and increased morbidity and mortality. There may also be a possibility that an RBC transfusion can affect tumor growth and cancer progression or recurrence.
Even though there are minimal evidence-based randomized controlled studies to guide when to transfuse, there are an increasing number of data-based analyses related to transfusion outcomes that can be used as an important tool in establishing evidence and identifying patient safety issues when the results are interpreted with caution. However, a recent randomized control trial among patients undergoing cardiac surgery showed that the use of a restrictive perioperative transfusion strategy compared to a more liberal strategy resulted in non-inferior rates of the combined outcome of 30-day all-cause mortality and severe mortality.
One systematic review of the literature published in 2002, found that patients randomized to a restrictive transfusion trigger group had the probability of receiving a RBC transfusion reduced by 42% and the volume reduced by 0.93 units. Mortality, rates of cardiac events, morbidity and length of hospital stay were unaffected. However, most of the data on clinical outcomes was based on a single randomized control trial. As a result, the evidence supported the use of restrictive triggers in patients who were free of severe cardiac disease.

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
NA

1c.6 Method for rating evidence: UTD

1c.7 Summary of Controversy/Contradictory Evidence: A study by Wu et al provides evidence that patients with an ischemic organ at risk are affected adversely by the underuse of transfusion.
Wu WC, Rathore SS, Wang Y, et al. Blood transfusion in elderly patients with acute myocardial infarction. N Engl J Med 2001;345:1230-6.

1c.8 Citations for Evidence (*other than guidelines***):** Hill GE, Frawley WH, Griffith KE, Forestner JE, Minei JP. Allogeneic blood transfusion increases the risk of postoperative bacterial infection: a meta-analysis. J Trauma 2003;54:908-914.
Shander A, Spence RK, Adams D, Shore-Lesserson L, Walawander CA. Timing and incidence of postoperative infections associated with blood transfusion: analysis of 1,489 orthopedic and cardiac surgery patients. Surg Infect (Lachmt) 2009;10-277-283.
Murphy GJ, Reeves BC, Rogers CA, Rizvi SI, Culliford L, Angelini GD. Increased mortality, postoperative morbidity, and cost after red blood cell transfusion in patients having cardiac surgery. Circulation 2007;116:2544-2552.
Hajjar LA, Vincent JL, Galas FRBG, Nakamura RE, Silva CMP, et al. Transfusion requirements after cardiac surgery; the TRACS randomized controlled trial. .JAMA 2010;304(14):1559-1567.
Vlahakes GJ. The value of phase 4 clinical testing. N Engl J Med 2006;354:413-415.
Reuters. Available at http://www.reuters.com/article/idUSTRE5115YF20090203 (accessed December 2010).
Hebert PC, Wells G, Blajchman MA, et al: A multicenter, randomized, controlled clinical trial of transfusion requirements in Critical Care Trials Group. N Engl J Med 1999;340:409-417.
Carson JL. Hill S, Carless P, Hebert P, Henry D. Transfusion Triggers: A systematic review of the literature. Transfusion Medicine Reviews 2002; 16 (3);187-199.
Thomson A, Farmer S, Hofmann A, Isbister J, Shander A. Patient blood management - a new paradigm for transfusion medicine. ISBT Science Series (2009) 4, 423-435.
Boucher BA, Hannon TJ. Review of therapeutics, Blood management: a primer for clinicians. Pharmacotherapy 2007;27(10):1394-1411.

Friedman MT, Ebrahim A. Adequacy of physician documentation of red blood cell transfusion and correlation with assessment of transfusion appropriateness. Arch Pathol Lab Med. 2006;130: 474-79.
Corwin HL, Parsonnet KC, Gettinger A. RBC transfusion in the ICU: is there a reason? Chest 1995;108: 767-771.
Tobin SN, Campbell DA, Boyce NW. Durability of response to a targeted intervention to modify clinician transfusion practices in a major teaching hospital. MJA. 2001;174:445-448.
Clinical practice guideline: Red blood cell transfusion in adult trauma and critical care. Crit Care Med 2009 Vol.37, No.12.
Guerrero EB, Zhao Y, Obrien SM, Ferguson TB, Peterson ED, et al. Variation in use of blood transfusion in coronary artery bypass graft surgery. JAMA 2010;304(14)1568-1575.
Hajjar LA, Vincent JL, Galas FRBG, Nakamura RE, Silva CMP, et al. Transfusion requirements after cardiac surgery: the TRACS randomized controlled trial. JAMA 2010; 304(14)1559-1567.
Shander AS, Goodnough LT. Blood transfusion as a quality indicator in cardiac surgery. JAMA 2010;(14)1610-1611.

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
A. Recommendations Regarding Indications for RBC Transfusion in the General Critically Ill Patient
RBC transfusion may be indicated for patients with evidence of acute hemorrhage and hemodynamic instability or inadequate oxygen delivery p.3127

1c.10 Clinical Practice Guideline Citation: Napalitano LM, Kurek S, Luchette FA et al., American College of Critical Care Medicine of the Society of Critical Care Medicine and the Eastern Association for the Surgery of Trauma Practice Management Workgroup. Clinical practice guideline:Red blood cell transfusion in adult trauma and critical care. Crit Care Med 2009 Vol.37, No.12.
1c.11 National Guideline Clearinghouse or other URL: NA

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom***):**
Level 1

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF)*:
All relevant empirical data were evaluated for clinical benefits and harms of the various interventions. Attempts were made to collect as much quality scientific data as possible. Previously published national consensus based guidelines were included. Proper methods including a variety of databases and cross checking of citations were used to ensure that these standards are met and biases avoided. Reference sections of articles identified were also utilized to gather additional articles and the Cochrane database was utilized to ensure that all prospective, randomized, controlled trials were identified and collected for review. The scientific evidence assessment methods employed by the Canadian and U.S. Preventive Task Force were applied when classifying the articles for review.

1c.14 Rationale for using this guideline over others:
This guideline focuses on the most recent evidence base for critically ill and injured patients with anemia and hemodynamic stability which includes both medical and surgical patients that tend to receive multiple units of blood during hospitalization. Some of these recommendations could also apply to patients that receive blood in lower level of care units outside of the ICU.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, met? **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	**Eval Rating**

2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome*)**:** Number of RBC units with pre-transfusion hemoglobin or hematocrit result and clinical indication documented **2a.2 Numerator Time Window** (*The time period in which cases are eligible for inclusion in the numerator*)**:** Episode of care **2a.3 Numerator Details** (*All information required to collect/calculate the numerator, including all codes, logic, and definitions*)**:** The units in the numerator are a subset of the units in the denominator. The following data elements are collected for the numerator; Clinical Indication for RBCs, Pre-transfusion hemoglobin or hematocrit, and RBC ID. Detailed descriptions are provided in attachment for Section 2a.30.	
2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured*)**:** Number of transfused red blood cell(RBC) units evaluated **2a.5 Target population gender:** Female, Male **2a.6 Target population age range:** All ages **2a.7 Denominator Time Window** (*The time period in which cases are eligible for inclusion in the denominator*)**:** Episode of care **2a.8 Denominator Details** (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions*)**:** The units in the numerator are a subset of the denominator units. The following data elements are collected for the numerator: Admission Date, Blood Administration Location, Discharge Date, ICD-9-CM Principal or Other Procedure Codes or Blood Bank Records. Detailed descriptions are provided in attachment for Section 2a.30.	
2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population*)**:** None **2a.10 Denominator Exclusion Details** (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions*)**:**	
2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions*)**:** This measure can be stratified using the data element Blood Administration Location. The definition is the location where the blood transfusion started. Allowable values are: Intraoperative or Non-intraoperative Setting	
2a.12-13 Risk Adjustment Type: No risk adjustment necessary **2a.14 Risk Adjustment Methodology/Variables** (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method*)**:** **2a.15-17 Detailed risk model available Web page URL or attachment:**	**2a-specs** **C☐** **P☐** **M☐** **N☐**
2a.18-19 Type of Score: Rate/proportion **2a.20 Interpretation of Score:** Better quality = Higher score	

2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
Algorithms are provided in attachment for Section 2a.30.

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
During the six-month pilot, the distribution of the hospital rates was reviewed over time.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
For pilot testing, hospitals were requested to submit 10 cases of patients with RBCs transfusions that were discharged per the designated six months in 2009. Post pilot, the sample size will be based on the number of RBC units transfused per discharge month or quarter.
Hospitals that choose to sample have the option of sampling quarterly or monthly. A hospital may choose to use a larger sample size than required. Hospitals with an initial population size less than the minimum number of units/doses transfused per quarter/month for the measure, cannot apply sampling to the measure.

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Paper medical record/flow-sheet, Electronic administrative data/claims, Lab data

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
The Joint Commission developed a web-based data collection tool that was used by hospitals and for reliability testing during the pilot test. When the measures are made part of The Joint Commission's ORYX data collection and reporting program, the data would be collected using contracted Performance Measurement Systems (vendors) that develop data collection tools based on the measure specifications. The tools are verified and tested by Joint Commission staff to confirm the accuracy of the data collection tool with the specifications.

2a.26-28 Data source/data collection instrument reference web page URL or attachment: Attachment The_Patient Blood_Management_Tool [1]-634278822541039354.pdf

2a.29-31 Data dictionary/code table web page URL or attachment: Attachment PBMSpecifications-634279402627152086.pdf

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Facility/Agency, Can be measured at all levels

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Hospital

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** A sample of 194 medical records were reabstracted at 12 randomly selected acute care hospitals of different sizes and locations from July through September 2010.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
Hospitals for reliability testing were randomly selected based on multiple characteristics, including region (west, south, north central, northeast), hospital type (teaching/non-teaching, rural/urban), and bed size (0-99, 100-199, 200-299, 300+). The objectives of the reliability site visits included: evaluation of the reliability of the individual measures and associated data elements, assessment of data collection effort including abstraction time and estimated cost, assessment of measure specifications including definitions, abstraction guidelines, etc. and assessment of sampling strategies. To prepare for the reliability site visits, the data collection tool that was used by the pilot hospitals was enhanced and tested. During the reliability

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site visit, Joint Commission staff re-abstracted a sub-set of records that had been previously submitted by the hospital into the enhanced data collection tool without knowing the measure specific data values that the hospital had submitted. When reabstraction was completed for each record, the results from the hospital and Joint Commission staff were compared and differences adjudicated in the program. Focus group interviews were conducted at each hospital and findings were discussed with each hospital to understand what aspects could be improved. A comparison of calculated indicator rates using data originally abstracted by hospitals and the data that were reabstracted by The Joint Commission staff was adjudicated on each measure and the individual data elements. Statistical analysis utilized Kappa scores and p values.

2b.3 **Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
The number of originally abstracted denominator events was 152 with a computed original measure rate of 83%. The number of re-abstracted denominator events was 151 with a re-abstracted measure rate of 83%. The absolute difference was -0.5% with a Kappa score of 0.436. The percent of hospital identified population verified was 89%. The match rate for 160 events for the individual data elements was: Clinical Indication for RBCs 60%, Pre-transfusion Hemoglobin 75%, RBC Event ID 99% and RBC Event Total Doses 81%. Measure specifications have been revised to strengthen and provide additional clarity to the data element definitions and abstraction guidelines.

2c. Validity testing

2c.1 **Data/sample** *(description of data/sample and size)*: Face validity was tested by a total of 63 hospitals of various sizes and geographic locations across the country that represented over 300 individuals during August and May 2009. Measure specifications were sent to the test hospitals for review. In addition, on-site focus interviews were conducted at five hospitals. Criterion validity was evaluated during the reliability site visits mentioned above as well as through an online survey that the participating hospitals completed.

2c.2 **Analytic Method** *(type of validity & rationale, method for testing)*:
The measure information form and the data dictionary were evaluated for face validity. The following parts of the measure information form were evaluated: numerator statement, numerator inclusions, numerator exclusions, denominator statement, denominator inclusions, denominator exclusions and an overall understanding of the measure information form. Each area was scored utilizing a five-point Likert scale. For each data element, the hospitals were asked to comment on the clarity and understanding of the abstraction guidelines and data definitions. In addition, the data dictionary was reviewed for overall understanding, usefulness and clarity utilizing a five-point Likert scale. Qualitative analysis was performed on measure feedback received during the focus group interviews and from the online surveys.

2c.3 **Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
A total of 58 hospitals completed the face validity evaluation and rated the overall understanding of the numerator and denominator statements an average 4.3% that ranked the measure 4th out of the 10 measures. Modifications to improve the understanding and clarity of the measure specifications were made prior to pilot testing based on feedback received from the hospitals during the face validity evaluation. Analysis of the online survey revealed 98% (57/58) of the pilot hospitals recommended moving the measure forward to the pilot test with suggested modifications. Note: For alpha testing, samples of all three blood products were proposed for one measure population.

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2d. Exclusions Justified

2d.1 **Summary of Evidence supporting exclusion(s):**

2d.2 **Citations for Evidence:**

2d.3 **Data/sample** *(description of data/sample and size)*:

2d.4 **Analytic Method** *(type analysis & rationale)*:

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NA☐

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)*:	
2e. Risk Adjustment for Outcomes/ Resource Use Measures **2e.1 Data/sample** *(description of data/sample and size)*: **2e.2 Analytic Method** *(type of risk adjustment, analysis, & rationale)*: **2e.3 Testing Results** *(risk model performance metrics)*: **2e.4 If outcome or resource use measure is not risk adjusted, provide rationale:**	**2e** C☐ P☐ M☐ N☐ NA☐
2f. Identification of Meaningful Differences in Performance **2f.1 Data/sample from Testing or Current Use** *(description of data/sample and size)*: A random sample of patients > 4 months of age was selected from the eligible measure population of inpatient discharges from 7/1/09 – 12/31/09. For each patient, a maximum of the first three 'events' (based on transfusion order) that could include up to three units or doses of blood from each of the three types of blood products were used for measurement purposes from each hospital. **2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: Z-scores were used to determine hospital measure rates that were significantly different from the overall average. **2f.3 Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*: Mean Rate for All Hospitals = 81.2% Overall Rate for All Hospitals = 80.6% Standard Deviation = 20.5% Median Rate for All Hospitals = 85.9% Min. = 8.6% Max. = 100% Lower Quartile = 73% Upper Quartile = 97% Z< -2* = 2 Z< 2** = 0	**2f** C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods **2g.1 Data/sample** *(description of data/sample and size)*: **2g.2 Analytic Method** *(type of analysis & rationale)*: **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*:	**2g** C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:**	**2h** C☐ P☐ M☐ N☐ NA☐

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, met? **Rationale:**	***2*** **C☐** **P☐** **M☐** **N☐**
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	**Eval Rating**
3a. Meaningful, Understandable, and Useful Information 3a.1 **Current Use:** Not in use but testing completed 3a.2 **Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:** We intend to incorporate these Patient Blood Management measures into our ORYX initiative with associated public reporting on Quality Check when there is a national call for these measures. 3a.3 **If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** The specifications will be posted on the Joint Commission website for public use in 2011. **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) 3a.4 **Data/sample** *(description of data/sample and size)***:** 3a.5 **Methods** *(e.g., focus group, survey, QI project)***:** 3a.6 **Results** *(qualitative and/or quantitative results and conclusions)***:**	**3a** **C☐** **P☐** **M☐** **N☐**
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:**	
(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?**	**3b** **C☐** **P☐** **M☐** **N☐** **NA☐**
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:**	**3c** **C☐** **P☐** **M☐** **N☐** **NA☐**

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability?*	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** **C☐** **P☐** **M☐** **N☐**
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** **C☐** **P☐** **M☐** **N☐**
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) No **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.** The project will begin Phase III in January 2011 to retool the specifications for retrieval from an electronic health record.	**4b** **C☐** **P☐** **M☐** **N☐**
4c. Exclusions **4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No **4c.2 If yes, provide justification.**	**4c** **C☐** **P☐** **M☐** **N☐** **NA☐**
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences **4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** None noted during the pilot	**4d** **C☐** **P☐** **M☐** **N☐**
4e. Data Collection Strategy/Implementation **4e.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Abstraction time for PBM-02 varied based on whether the patient received blood and the number of RBC units transfused to each patient. During testing, there was confusion and lack of information to accurately abstract RBCs by event based on the order to transfuse. This extra layer of abstraction can decrease reliability if the 'event' is incorrectly abstracted or unable to be determined. As a result, this measure will be abstracted by unit and will evaluate the initial four RBC units that were transfused. The data element Clinical Indication for RBCs confirmed that hospitals use a variety of indications to document blood use. If an indication was documented, abstractors sometimes had difficulty determining which of the three allowable values of; bleeding, not bleeding but documentation of oxygen deficit or 'other', they should select even though they all flowed to the numerator. Post pilot, hospitals will pass if	**4e** **C☐** **P☐** **M☐** **N☐**

there is documentation of an indication without having to categorize it to a pre-defined list of reasons. Abstractors reported it was difficult to abstract RBC (99.00 procedure code) cell salvage units since the hemoglobin value and clinical indication are implicit in the decision to utilize the cell salvage process. So due to this issue, and data that showed that only 2% of the units were identified as 99.00, RBCs with this code will not be an included population.
Intraoperatively, documentation of a blood transfusion pre-transfusion lab results and clinical indication was lacking in most paper-based records. So, in order to assist hospitals to focus their efforts on areas with low rates of compliance, this measure will be stratified so that hospitals can track results based on administration location. The "closest" hemoglobin values will be abstracted without a "within 24 hour timeframe" requirement since pre-transfusion labs for chronic transfusion patients and surgical patient labs may be drawn more than 24 hours prior to the transfusion.
Pilot hospitals were requested to estimate the time to abstract one unit of blood red blood cells (RBCs), for the six-month pilot. Twenty hospitals estimated an average time of 30 minutes to abstract a unit of blood with an average cost of $21-25 per hour. However, these costs do not include the time or cost involved in identifying the patient population, staff training or data collection tool instruction. It should also be noted that the learning curve varied widely due to the staff experience and expertise that were utilized for a 'time-limited' project.
Due to the amount of time needed to manually abstract the volume of blood transfusions, we believe that these measures are most suitable for abstraction from an electronic medical record (EHR). Retrieval from an EHR could capture 100% of all units that were transfused and would decrease or eliminate the associated abstraction burden. This method would also improve the identification of patients who received blood since procedure codes to document blood use are not standardized across the country. In the meantime, patients can be identified using blood bank records or procedure codes.
During the 12 reliability site visits, two Joint Commission staff also found that the abstraction time varied widely based on the method of record retrieval (e.g., paper record, scanned record or electronic information) at each hospital and the amount of blood transfused per case. Based on hospital feedback, measure specifications have been revised to strengthen and provide additional clarity to data element definitions and abstraction guidelines. The timing and frequency of data collection will remain monthly or quarterly as it does for the other Joint Commission measure sets. Maintaining patient confidentially was not an issue during the pilot test, since blinded hospital and patient identifiers are used on all data received by The Joint Commission staff for data quality reviews.

4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:**
The majority of hospitals already have processes in place to abstract measures if the patients are identified using procedure codes. However, some hospitals document total hospital blood use using blood bank records that would have to be cross-referenced by the patient medical record number to determine how much and the type of blood product each patient received which adds to the abstraction burden.
There are no Joint Commission fees to abstract the measures, but the abstraction cost for this measure would depend on the amount of blood transfused at each hospital. This measure would evaluate the first six units of RBCs regardless of the number of RBC units transfused. Hospitals with Blood Management or conservation programs may have fewer units to review and those with efficient or electronic processes to document blood may have lower abstraction costs.

4e.3 **Evidence for costs:**

4e.4 **Business case documentation:** There continues to be considerable unexplained variation in transfusion practices across organizations, products and patient populations. Evidence is mounting that demonstrates significant harm from unnecessary blood transfusions. Monitoring transfusions will provide information so hospitals can begin to identify patients who are transfused outside of the guidelines. It has been found that hospitals that track blood use at the patient specific level have a higher percentage of appropriate transfusions than those that do not track blood use at that level. Measuring blood use should decrease the amount of blood transfused and improve patient safety.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility?*	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met?	**4**

Rationale:	C☐ P☐ M☐ N☐
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	Time-limited ☐
Steering Committee: Do you recommend for endorsement? **Comments:**	Y☐ N☐ A☐

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 Organization
The Joint Commission, One Renaissance Boulevard, Oakbrook Terrace, Illinois, 60181

Co.2 Point of Contact
Jerod M., Loeb, PhD, jloeb@jointcommission.org, 630-792-5920-

Measure Developer If different from Measure Steward
Co.3 Organization
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Co.4 Point of Contact
Harriet, Gammon, MSN, RN, CPHQ, hgammon@jointcommission, 630-792-5926-

Co.5 Submitter If different from Measure Steward POC
Harriet, Gammon, MSN, RN, CPHQ, hgammon@jointcommission.org, 630-792-5926-, The Joint Commission

Co.6 Additional organizations that sponsored/participated in measure development

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
The technical advisory panel determined priority areas in blood management for measure development. They reviewed public comments and were actively involved in all phases of the project to identify and develop the numerator and denominator statements. Measure recommendations for National Quality Forum endorsement were made after careful review of the pilot results and site feedback.

Ad.2 If adapted, provide name of original measure:
Ad.3-5 If adapted, provide original specifications URL or attachment

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 Year the measure was first released:
Ad.7 Month and Year of most recent revision: 12, 2010
Ad.8 What is your frequency for review/update of this measure? Biannually
Ad.9 When is the next scheduled review/update for this measure? 06, 2011

Ad.10 Copyright statement/disclaimers: No royalty or use fee is required for copying or reprinting this manual, but the following are required as a condition of usage: 1) disclosure that the Specifications Manual is periodically updated, and that the version being copied or reprinted may not be up-to-date when used unless the copier or printer has verified the version to be up-to-date and affirms that, and 2) users participating in Joint Commission accreditation, including performance measures systems, are required to update their software and associated documentation based on the published manual production timelines.
Example Acknowledgement: The Specifications Manual for National Hospital Inpatient Quality Measures Patient Blood Management Performance Measure Set is periodically updated by The Joint Commission. Users of the

Specifications Manual for National Hospital Inpatient Quality Measures Patient Blood Management Performance Measure Set must update their software and associated documentation based on the published manual production timelines.
Ad.11 -13 Additional Information web page URL or attachment: Attachment TAPLISTWEBc-634276846462990426.doc
Date of Submission (*MM/DD/YY*)**:** 12/29/2010

Patient Blood Management (PBM)

Set Measures

Set Measure ID	Measure Short Name
PBM-01	Transfusion Consent
PBM-02	RBC Transfusion Indication
PBM-03	Plasma Transfusion Indication
PBM-04	Platelet Transfusion Indication
PBM-05	Blood Administration Documentation
PBM-06	Preoperative Anemia Screening
PBM-07	Preoperative Blood Type Testing and Antibody Screening

Measure Set Specific Data Elements

Element Name	Collected For
Admission From Home	PBM-06,
Anesthesia Start Date	PBM-06,
Blood Administration Location	PBM-02, PBM-03, PBM-04, PBM-05,
Blood Bank Records	PBM-01, PBM-02, PBM-03, PBM-04, PBM-05,
Blood ID Number	PBM-05,
Blood Type Testing Ordered	PBM-07,
Clinical Indication for Plasma	PBM-03,
Clinical Indication for Platelets	PBM-04,
Clinical Indication for RBCs	PBM-02,
Education Addressed Risks, Benefits and Alternatives to Transfusion	PBM-01,
Patient ID Verification	PBM-05,
Plasma ID	PBM-03, PBM-05,
Platelet ID	PBM-04, PBM-05,
Pre-transfusion Hematocrit	PBM-02,
Pre-transfusion Hemoglobin	PBM-02,
Pre-transfusion PT/INR Result	PBM-03,
Pre-transfusion Platelet Count	PBM-04,
Preoperative Anemia Screening Date	PBM-06,
Preoperative Blood Type Testing	PBM-07,
RBC ID	PBM-02, PBM-05,
RBC Unit Exclusions	PBM-02, PBM-05,
Surgery Scheduled Timeframe	PBM-06,
Transfusion Consent	PBM-01,
Transfusion Order	PBM-05,
Transfusion Start Date	PBM-05,
Transfusion Start Time	PBM-05,
Vital Sign Monitoring	PBM-05,

Related Materials

Document Name
z. Appendix E - Miscellaneous Tables

Measure Information Form

Measure Set: Patient Blood Management(PBM)

Set Measure ID: PBM-01

Performance Measure Name: Transfusion Consent

Description: Patients with a signed consent who received information about the risks, benefits and alternatives of transfusion prior to the initial blood transfusion or the initial transfusion was deemed a medical emergency.

Rationale: Planning a discussion with a licensed practitioner regarding the risks, benefits and alternatives of transfusion is an opportunity for the patient to participate in decisions about his or her care. It is a process that takes into consideration, each patient's preferences, clinical needs and provides information in compliance with the regulations and policies of the state and facility. Even though policies related to informed consent may vary among hospitals, all hospitals require some type of consent prior to treatment unless emergency care is needed. The elements of performance for the Joint Commission Standard RI.01.03.01 related to the informed consent process include a discussion about the risks, benefits and alternatives, and a discussion about the risk, if care is not received. This measure is also supported by the Joint Commission's National Patient Safety Goal (NPSG) 13 that encourages patients' active involvement in their own care as a patient safety strategy.

For many years, the American Association of Blood Banks (AABB) organization has supported the consent process for transfusion and has developed several standards such as AABB Standard 5.19.1. AABB requires that at a minimum, a recipient consent for transfusion and that should include; a description of the risks, benefits and treatment alternatives, the opportunity to ask questions and the right to accept or refuse transfusion.

Type of Measure: Process

Improvement Noted As: Increase in the rate

Numerator Statement: Patients with a signed consent who received information about the risks, benefits and alternatives prior to the initial blood transfusion or the initial transfusion was deemed a medical emergency

Included Populations: Not applicable

Excluded Populations: None

Data Elements:

- *Education Addressed Risks, Benefits and Alternatives to Transfusion*
- *Transfusion Consent*

Denominator Statement: Patients who received red blood cell, plasma or platelet transfusions

Included Populations: Discharges with an ICD-9-CM Principal or Other Procedure Codes for transfusion as defined in Appendix A, Table 9.3-9.6 or a transfusion documented from Blood Bank Records.

Excluded Populations: None

Data Elements:

- *Admission Date*
- *Blood Bank Records*
- *Discharge Date*
- *ICD-9-CM Other Procedure Codes*
- *ICD-9-CM Principal Procedure Code*

Risk Adjustment: No.

Data Collection Approach: Retrospective data collection sources for required data elements include administrative data and medical records. Hospitals that do not use ICD-9-CM procedure codes to document tranfusions may use blood bank records to identify the population.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes and blood bank records; therefore, coding practices and transfusion documentation may require evaluation to ensure consistency.

Measure Analysis Suggestions: Hospitals may want to evaluate the cases according to medical or surgical designation that were not included in the numerator in order to determine if the consent was signed and/or if all or only part of the educational components were given or if documentation was insufficient. Based on this information, hospitals may assess the barriers impacting this measure that could be improved.

Sampling: Yes. For additional information see the Population and Sampling Specifications Section.

Data Reported As: Aggregate rate generated from count data reported as a proportion.

Selected References:

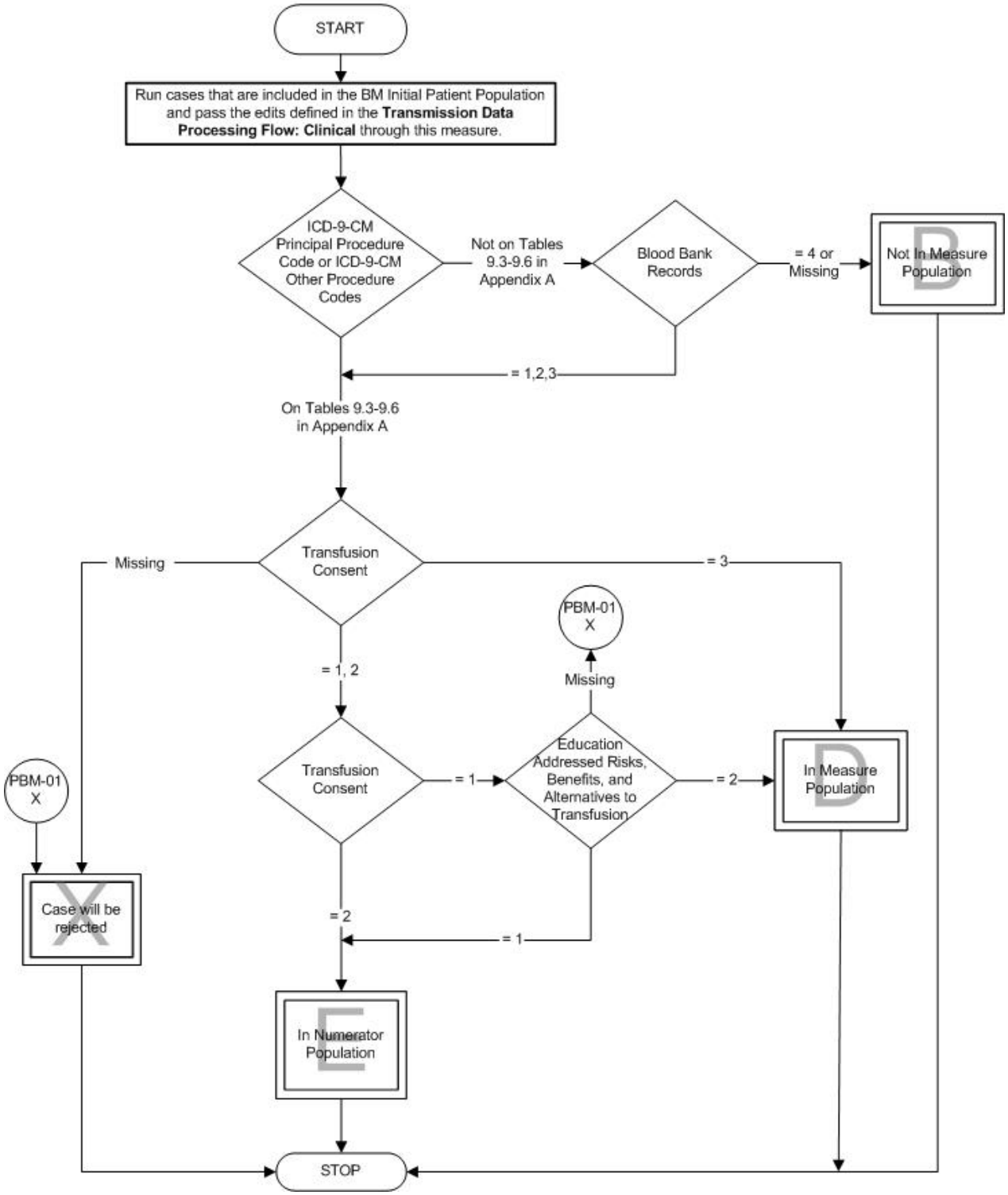
- Speiss BD, Counts RB, Gould SA. Perioperative Transfusion Medicine, Williams and Wilkins; 1998; 201-204.
- Stowell C, Sazama K. Informed Consent in Blood Transfusion and Cellular Therapies: Patients, Donors and Research Subjects. AABB Press; 2007; ISBN #978-1-56395-254-8.
- Burch JW, Uhl L. Guidelines for Informed Consent in Transfusion Medicine. AABB Press; 2006; ISBN #1-56395-146-0.2008.
- Standards for Blood Banks and Transfusion Services, 25th ed. Bethseda, MD: AABB 2008.
- The Joint Commission: Comprehensive Accreditation Manual for Hospitals, 2009. Oakbrook Terrace, IL. Joint Commission Resources, Inc, 2009.
- The Joint Commission, “National Patient Safety Goals (NPSG)”, IN: Comprehensive accreditation manual for hospitals, 2009. Oakbrook Terrace, IL; Joint Commission Resources, Inc., 2009, pp. NPSG 1 – NPSG 4.

Measure Algorithm:

PBM–01: Transfusion Consent

Numerator: Patients with a signed consent who received information about the risks, benefits and alternatives prior to the initial blood transfusion or the initial transfusion was deemed a medical emergency

Denominator: Patients who received red blood cells, platelets or plasma



Related Topics

Measure Information Form

Measure Set: Patient Blood Management(PBM)

Set Measure ID: PBM-02

Performance Measure Name: RBC Transfusion Indication

Description: The number of transfused red blood cell (RBC) units with a pre-transfusion hemoglobin (hgb) or hematocrit (hct) result and clinical indication documented from patients of all ages who received RBCs.

Rationale: Improvement of the safety and quality of care that a hospital provides includes the review of the use of blood and blood products. Despite current evidence and best practice guidelines, clinical practice regarding when to transfuse varies among physicians and institutions even though most would agree that blood products should only be given when the benefits outweigh the harm. Many advocate that transfusion decisions should be based on a clinical assessment and not on laboratory values alone to avoid inappropriate over-or-under transfusion. Measuring whether an "indication for transfusion" and a pre-transfusion laboratory value was documented may improve the utilization of blood components. In addition, implementing such a process may simplify the hospital's review for appropriateness of the transfusion when auditing records for accreditation and regulatory agencies. In a study by Friedman and Ebrahim, there was a significant correlation between red blood cell transfusions that lacked documentation of the clinical necessity for transfusion and justification of the transfusion.

Type of Measure: Process

Improvement Noted As: Increase in the rate

Numerator Statement: Number of RBC units with pre-transfusion hemoglobin or hematocrit result and clinical indication documented

Included Populations: Not applicable

Excluded Populations: None

Data Elements:

- *Clinical Indication for RBCs*
- *Pre-transfusion Hematocrit*
- *Pre-transfusion Hemoglobin*
- *RBC ID*

Denominator Statement: Number of transfused red blood cell units evaluated

Included Populations:

- Discharges with an ICD-9-CM Principal or Other Procedure Codes for transfusion as defined in Appendix A, Tables 9.3 or 9.4 or a RBC transfusion documented from Blood Bank Records.
- The first six RBCs units transfused after hospital arrival

Excluded Populations: None

Data Elements:

- *Admission Date*
- *Birthdate*
- *Blood Administration Location*
- *Blood Bank Records*
- *Discharge Date*
- *ICD-9-CM Other Procedure Codes*
- *ICD-9-CM Principal Procedure Code*
- *RBC Unit Exclusions*

Risk Adjustment: No.

Data Collection Approach: Retrospective data sources for required data elements include administrative/billing data and medical records. Hospitals that do not use ICD-9-CM procedure codes to document transfusions may use blood bank records to identify the population of patients who received RBCs.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes and blood bank records; therefore, coding practices and transfusion documentation may require evaluation to ensure consistency.

Measure Analysis Suggestions: Hospitals may want to use the data to further evaluate the process for determining the need for blood products based on the clinical indications and correlating it with the pre-transfusion value that was documented. This information may assist hospitals to determine if the patients were transfused appropriately or if efforts should be directed toward additional documentation efforts for monitoring blood product usage. Data may be grouped by service designation or by blood products to identify specific areas for staff review.

Sampling: Yes. For additional information see the Population and Sampling Specifications Section.

Data Reported As: Aggregate rate generated from count data reported as a proportion.

Selected References:

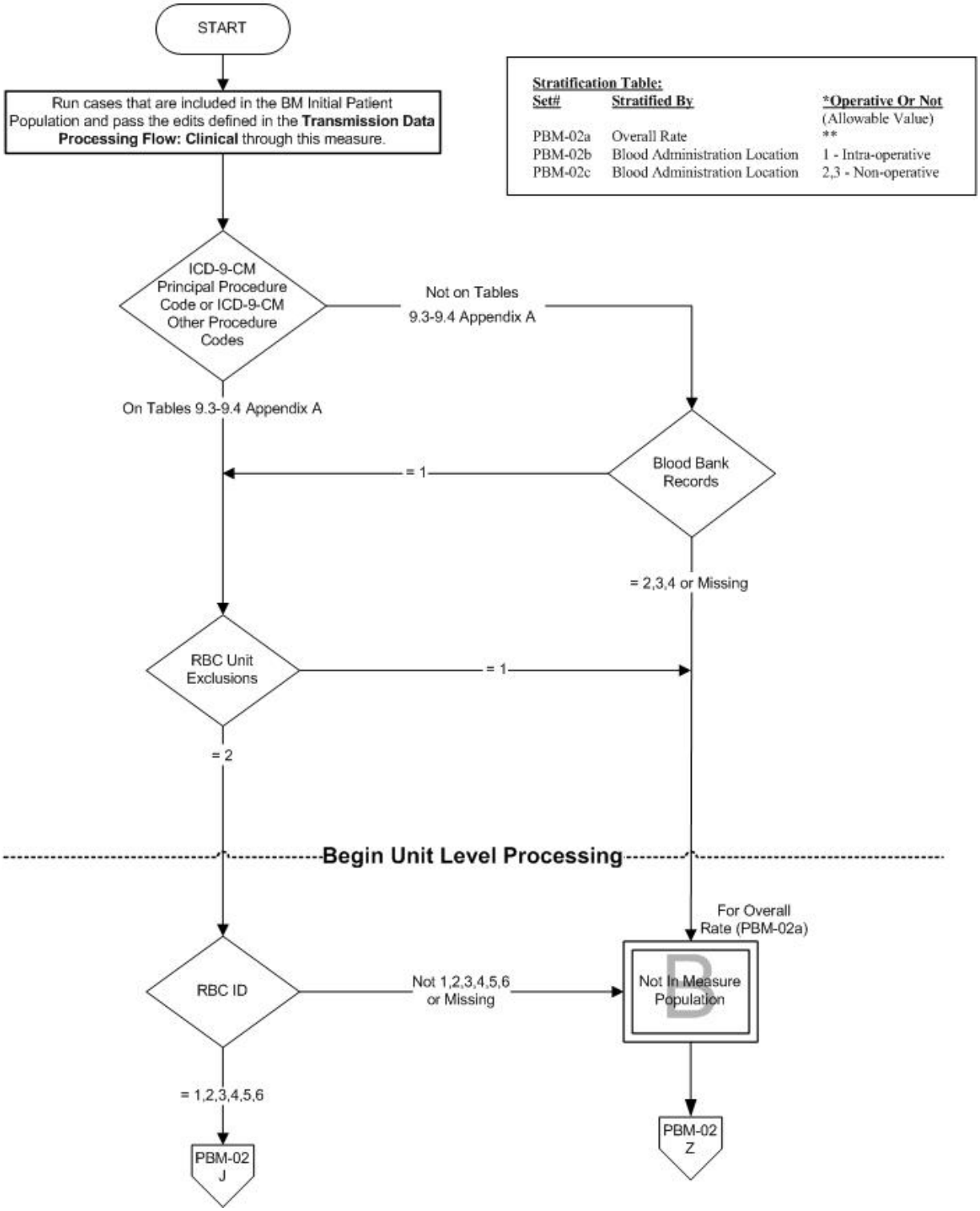
- Friedman MT, Ebrahim A. Adequacy of physician documentation of red blood cell transfusion and correlation with assessment of transfusion appropriateness. Arch Pathol Lab Med. 2006;130: 474-79.
- Corwin HL, Parsonnet KC, Gettinger A. RBC transfusion in the ICU: is there a reason? Chest. 1995;108: 767-771.
- Tobin SN, Campbell DA, Boyce NW. Durability of response to a targeted intervention to modify clinician transfusion practices in a major teaching hospital. MJA. 2001;174:445-448.
- Clinical practice guideline: Red blood cell transfusion in adult trauma and critical care. Crit Care Med 2009 Vol.37, No.12.

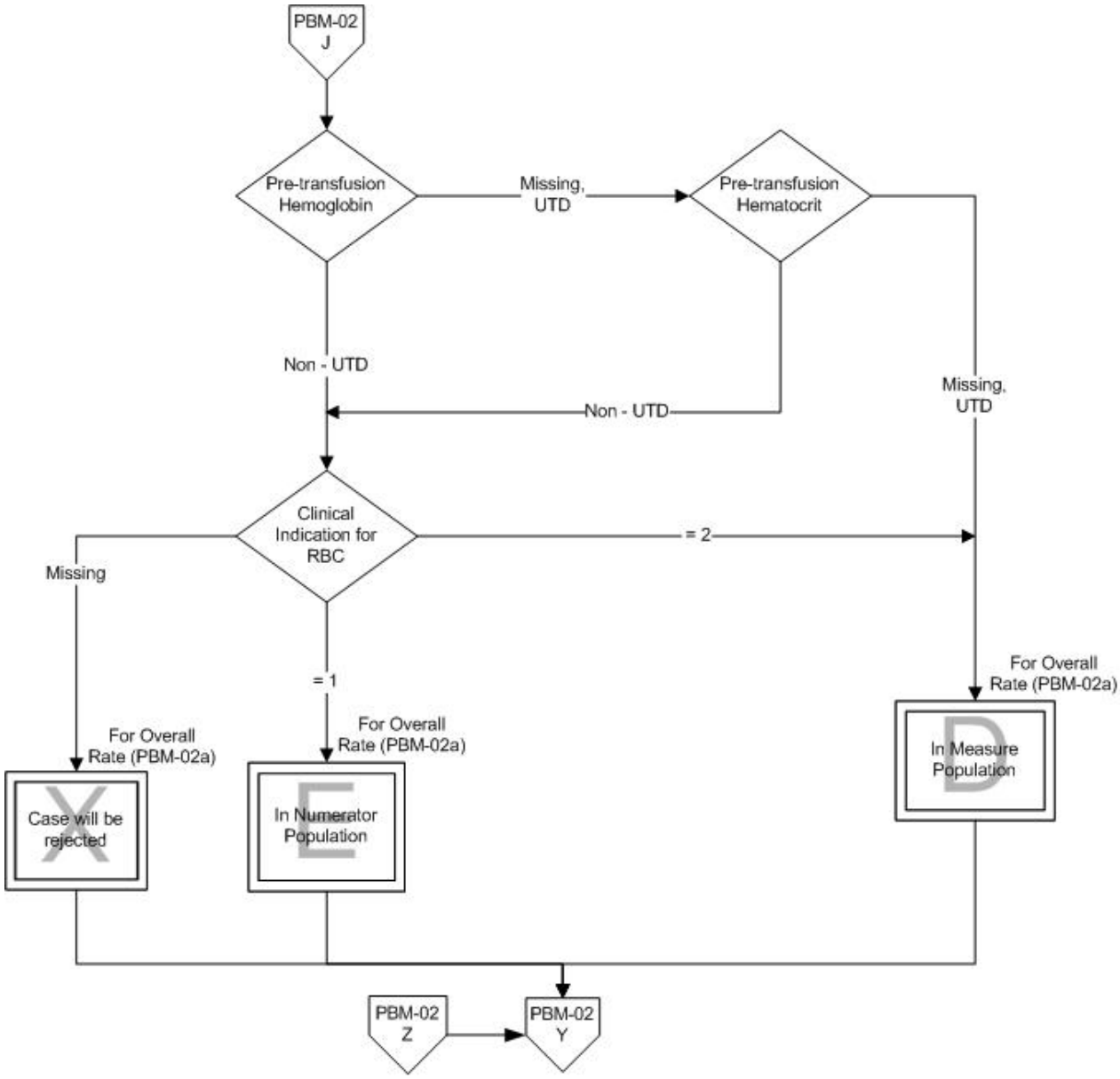
Measure Algorithm:

PBM–02: RBC Transfusion Indication

Numerator: Number of RBC units (bags) with pre-transfusion hemoglobin or hematocrit result and clinical indication documented

Denominator: Number of transfused red blood cell units evaluated





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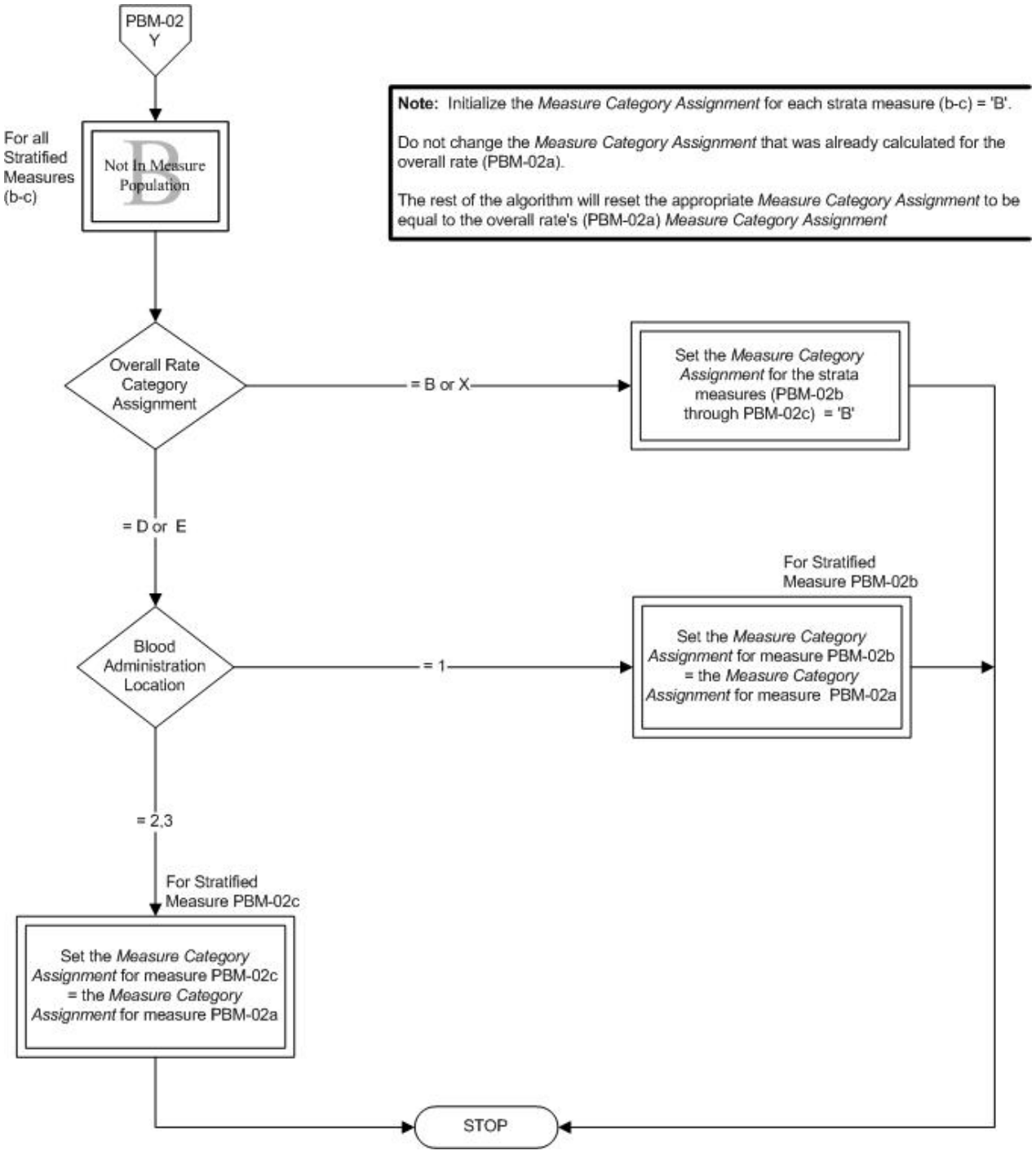


Related Topics

Measure Information Form

Measure Set: Patient Blood Management(PBM)

Set Measure ID: PBM-03

Performance Measure Name: Plasma Transfusion Indication

Description: The number of transfused plasma units with a pre-transfusion PT/INR result and clinical indication documented from patients of all ages who received plasma.

Rationale: The use of plasma has increased and is disproportionally high compared to other countries with similar levels of health care. Indications for transfusing plasma are very limited, and as a result, published studies often show unjustifiable use of plasma. According to the National Heart Lung and Blood Institute, plasma should be administered only to increase the level of clotting factors in patients with a demonstrated deficiency. If the prothrombin time (PT) and partial thromboplastin time (PTT) are < 1.5 times normal, a plasma transfusion is rarely needed. However, plasma is frequently transfused to patients with mild-to moderate elevations in PT despite numerous studies that have not shown a correlation between the risk of bleeding and mild-to moderate test results. In a study by Wahab et al, transfusion of plasma for mild abnormalities of coagulation values resulted in a partial normalization in a minority of patients, and failed to correct the PT in 99% of the patients. In a 2004 study by Hui, the need to correct prolonged international normalized ratios (INRs) for patients on warfarin emerged as the primary indication for plasma followed by massive transfusions.

Type of Measure: Process

Improvement Noted As: Increase in the rate

Numerator Statement: Number of plasma units with pre-transfusion PT/INR result and clinical indication documented

Included Populations: Not applicable

Excluded Populations: None

Data Elements:

- *Clinical Indication for Plasma*
- *Plasma ID*
- *Pre-transfusion PT/INR Result*

Denominator Statement: Number of transfused plasma units evaluated

Included Populations:

- Discharges with an ICD-9-CM Principal or Other Procedure Codes for transfusion as defined in Appendix A, Table 9.6 or a plasma transfusion documented from Blood Bank Records
- The first three plasma units transfused from hospital arrival

Excluded Populations:

- Discharges with an ICD-9-CM Principal Diagnosis Code of trauma as defined in Appendix A, Table 9.7.

Data Elements:

- *Admission Date*
- *Birthdate*
- *Blood Administration Location*
- *Blood Bank Records*
- *Discharge Date*
- *ICD-9-CM Other Procedure Codes*
- *ICD-9-CM Principal Diagnosis Code*
- *ICD-9-CM Principal Procedure Code*

Risk Adjustment: No.

Data Collection Approach: Retrospective data sources for required data elements include administrative/billing data and medical records. Hospitals that do not use ICD-9-CM procedure codes to document transfusions may use blood bank records to identify the population of patients who received plasma.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes and blood bank records; therefore, coding practices and transfusion documentation may require evaluation to ensure consistency.

Measure Analysis Suggestions: Data from this measure may be used to review the type of invasive procedures or surgeries that use plasma in order to further evaluate appropriateness of use.

Sampling: Yes. For additional information see the Population and Sampling Specifications Section.

Data Reported As: Aggregate rate generated from count data reported as a proportion.

Selected References:

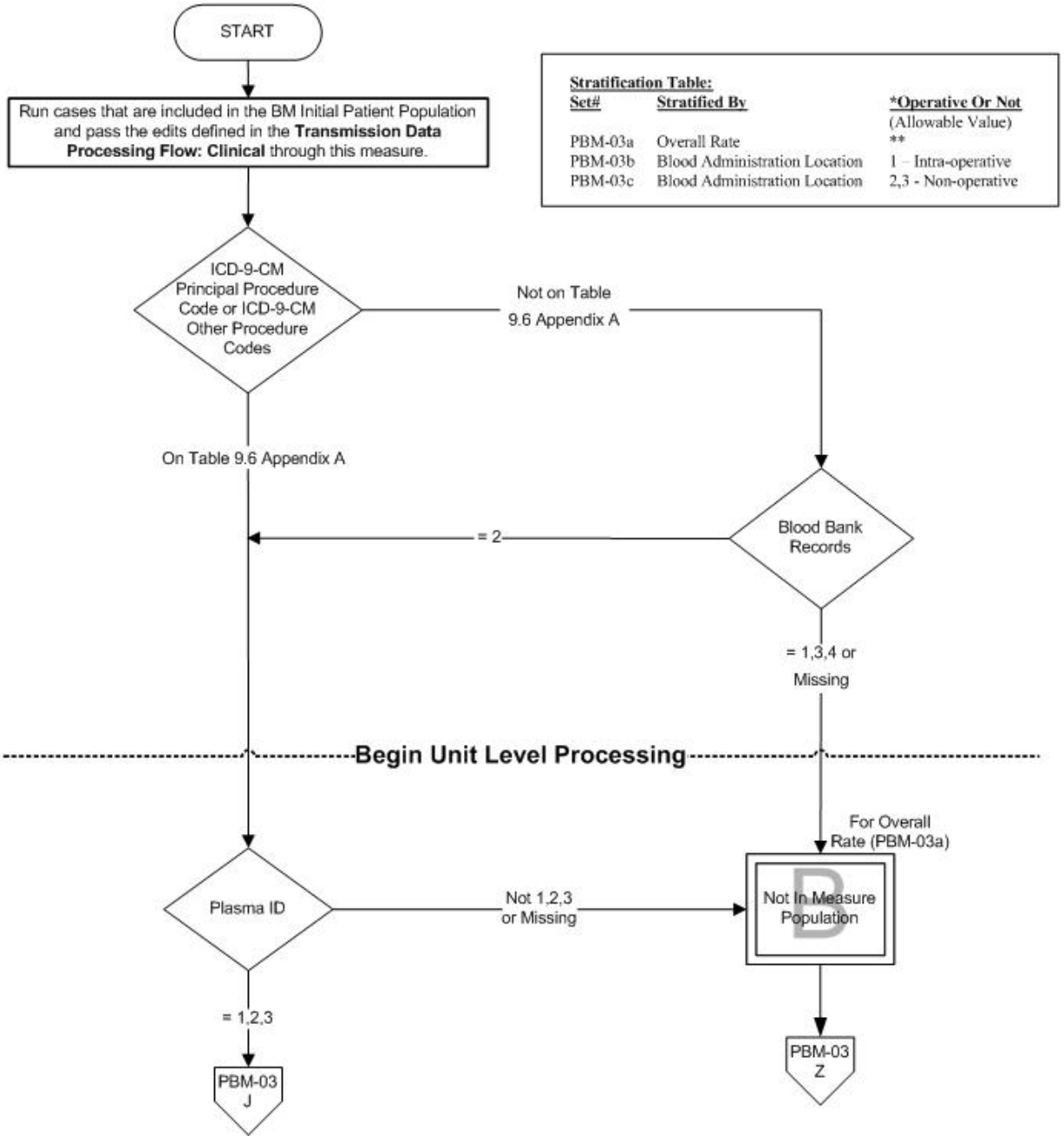
- Hui C, Williams I, Davis K. Clinical audit of the use of fresh-frozen plasma and platelets in a tertiary teaching hospital and the impact of a new transfusion request form. Int Med J. 2005;35:283-288.
- Wallis JP, Dzik S. Is fresh frozen plasma overtransfused in the United States? Transfusion. 2004;44:1674-75.
- Ardel-Wahab OI, Healy B, Dzik WH. Effect of fresh-frozen plasma transfusion on prothrombin time and bleeding in patients with mild coagulation abnormalities. Transfusion. 2006;46:1479-1285.
- Segal J, Dzik WH; Transfusion Medicine/Hemostasis Clinical Trials Network. Paucity of studies to support that abnormal coagulation test results predict bleeding in the setting of invasive procedures: an evidenced-based review. Transfusion. 2005;45:1413-25.

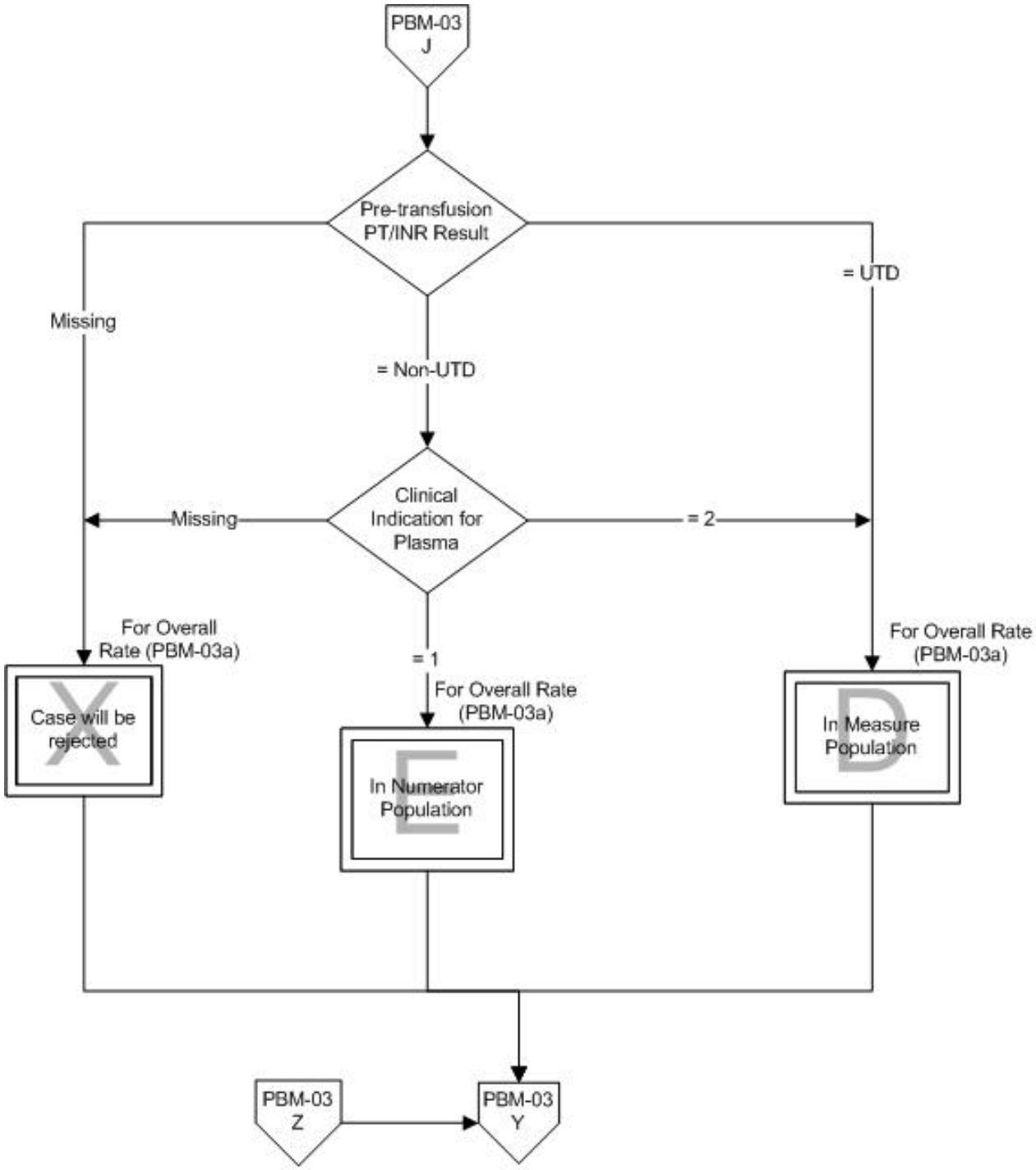
Measure Algorithm:

PBM–03: Plasma Transfusion Indication

Numerator: Number of plasma units with pre-transfusion PT/INR result and clinical indication documented

Denominator: Number of transfused plasma units evaluated





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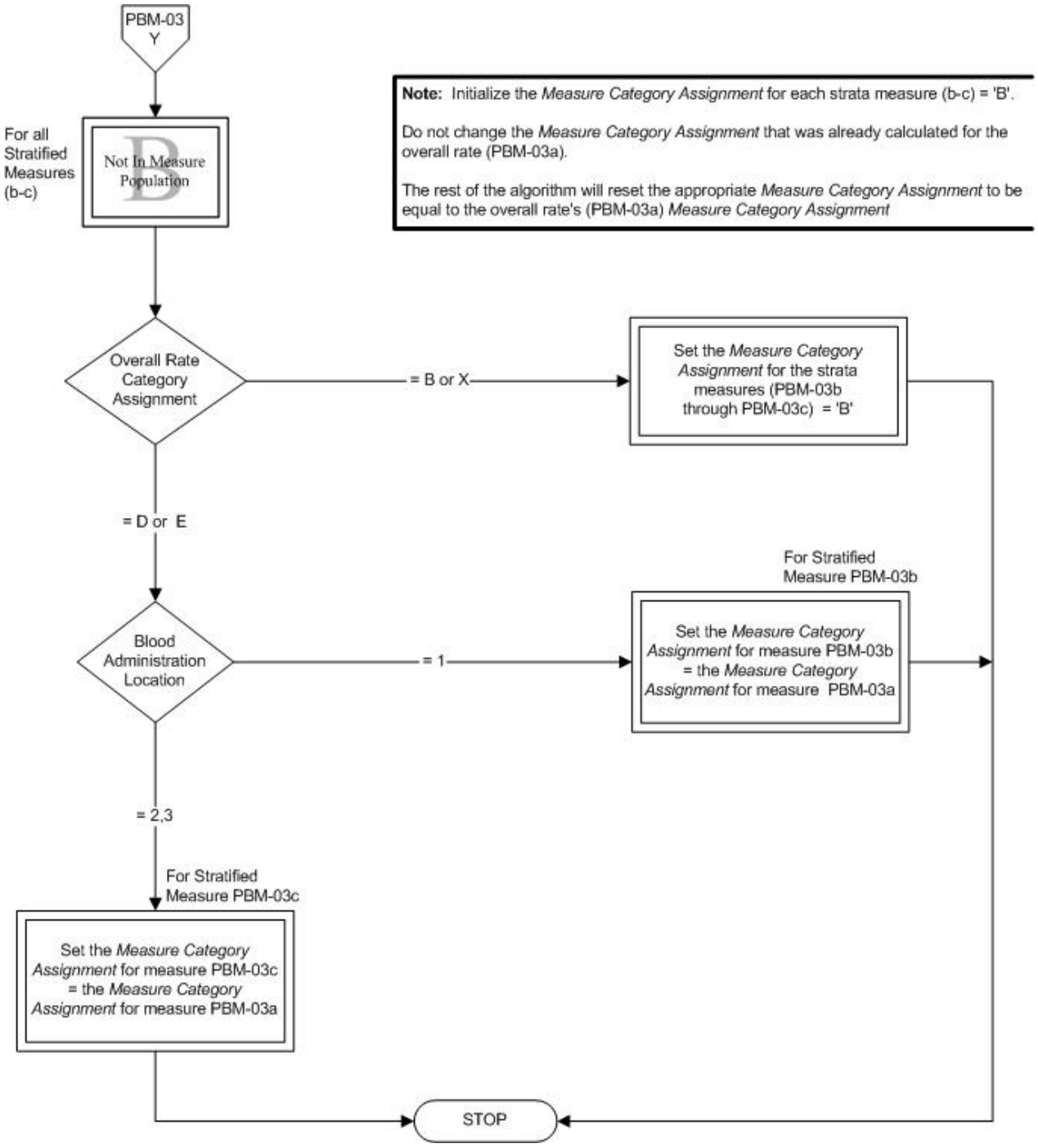


Related Topics

Measure Information Form

Measure Set: Patient Blood Management(PBM)

Set Measure ID: PBM-04

Performance Measure Name: Platelet Transfusion Indication

Description: The number of transfused platelet units with pre-transfusion platelet count and clinical indication documented from patients of all ages who received platelets.

Rationale: Platelets are transfused to treat or prevent bleeding associated with thrombocytopenia and/or platelet dysfunction. Platelets given therapeutically should help stop the bleeding, and if given prophylactically, post transfusion platelet counts should be obtained to monitor the response to determine the effectiveness of the transfusion. Repeated platelet transfusions can cause alloimmunization and cause platelet refractoriness to future transfusions. Multiple infectious risks are associated with platelet transfusions so patients should only be exposed to the least amount needed.

Type of Measure: Process

Improvement Noted As: Increase in the rate

Numerator Statement: Number of platelet units with pre-transfusion platelet count result and clinical indication documented

Included Populations: Not applicable

Excluded Populations: None

Data Elements:

- *Clinical Indication for Platelets*
- *Platelet ID*
- *Pre-transfusion Platelet Count*

Denominator Statement: Number of transfused platelet units evaluated

Included Populations:

- Discharges with an ICD-9-CM Principal or Other Procedure Codes for transfusion as defined in Appendix A, Table 9.5 or a platelet transfusion documented from Blood Bank Records
- The first three platelet units transfused after hospital arrival

Excluded Populations: None

Data Elements:

- *Admission Date*
- *Blood Administration Location*
- *Blood Bank Records*

- *Discharge Date*
- *ICD-9-CM Other Procedure Codes*
- *ICD-9-CM Principal Procedure Code*

Risk Adjustment: No.

Data Collection Approach: Retrospective data sources for required data elements include administrative/billing data and medical records. Hospitals that do not use ICD-9-CM procedure codes to document transfusions may use blood bank records to identify the population of patients who received platelets.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes and blood bank records; therefore, coding practices and transfusion documentation may require evaluation to ensure consistency.

Measure Analysis Suggestions: Data from this measure may be used to evaluate the utilization and approriateness of platelets used by an organization.

Sampling: Yes. For additional information see the Population and Sampling Specifications.

Data Reported As: Aggregate rate generated from count data reported as a proportion.

Selected References:

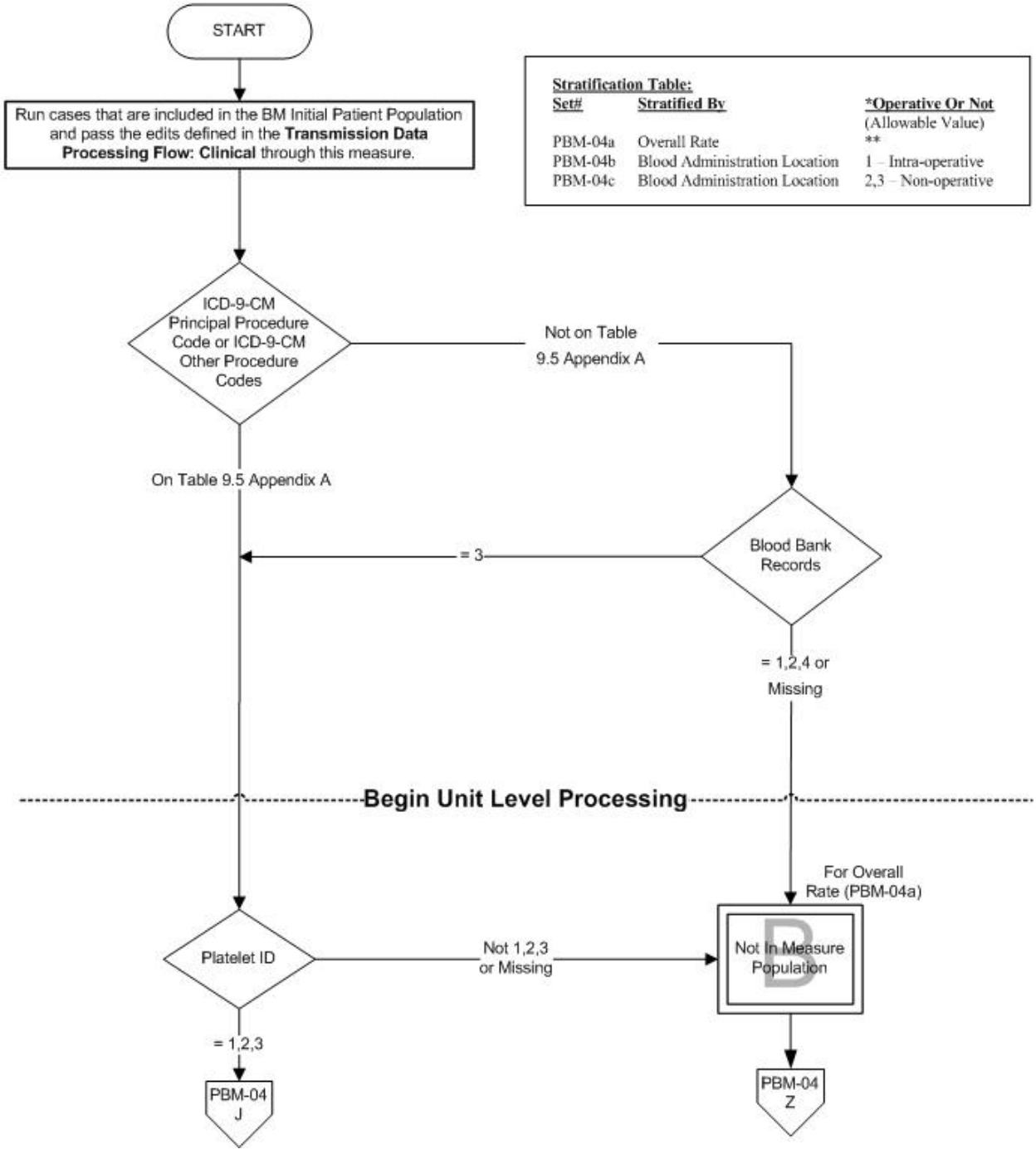
- Garrioch M, Sandbach J, Pirie E, Morrison A, Todd A, Green R. Reducing red cell transfusion by audit, education and a new guideline in a large teaching hospital. Transfusion Med. 2004;14:25-31.
- Petrides M. Red cell transfusion “trigger”: A review. Southern Med J. 2003; 96:664-667.
- Roback JD, ed. Technical manual. 16th ed, Bethseda, MD: AABB, 2008.
- BR J Haematol 1998, 101:609 - 617.

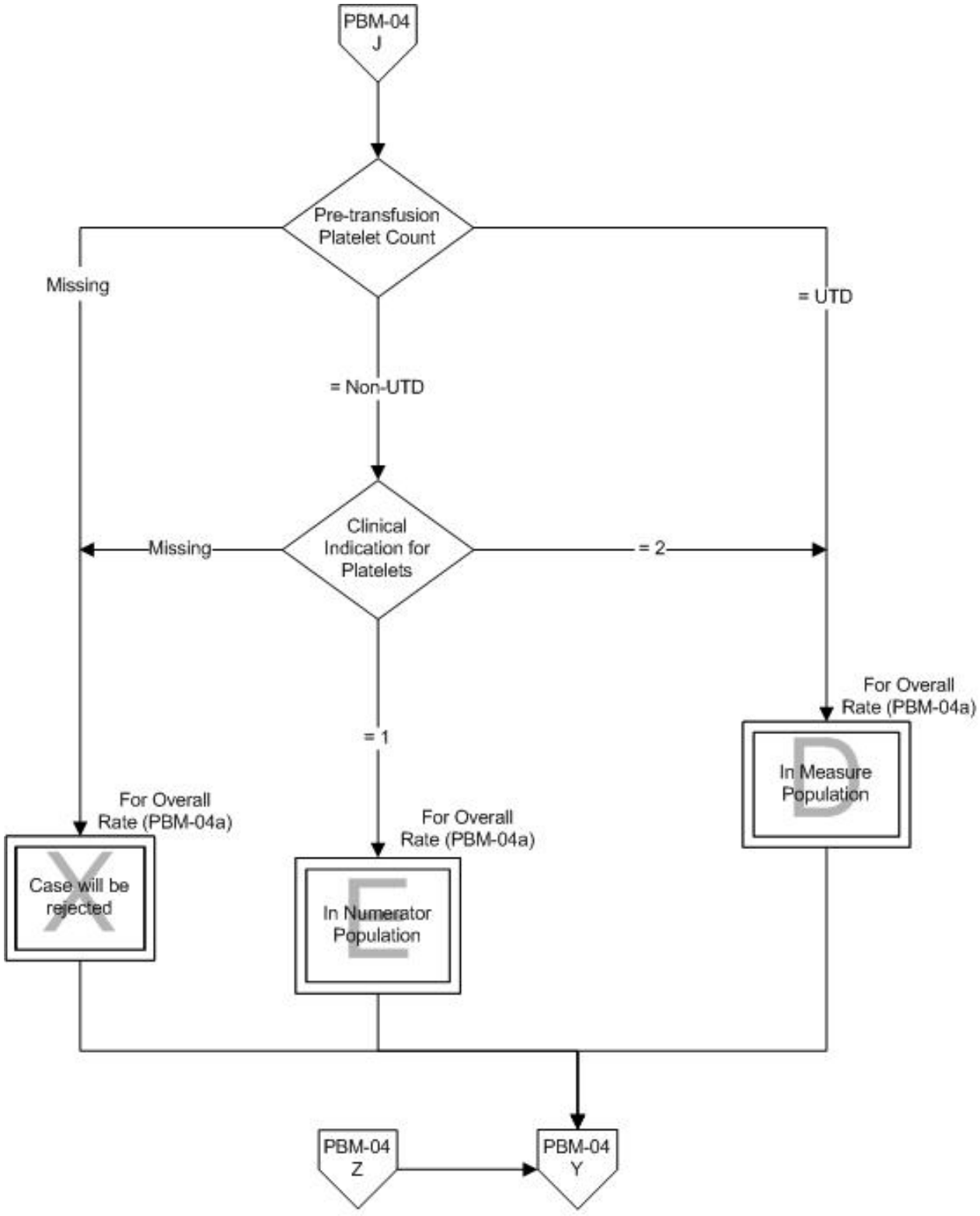
Measure Algorithm:

PBM–04: Platelet Transfusion Indication

Numerator: Number of platelet doses with pre-transfusion platelet count result and clinical indication documented

Denominator: Number of transfused platelet units evaluated





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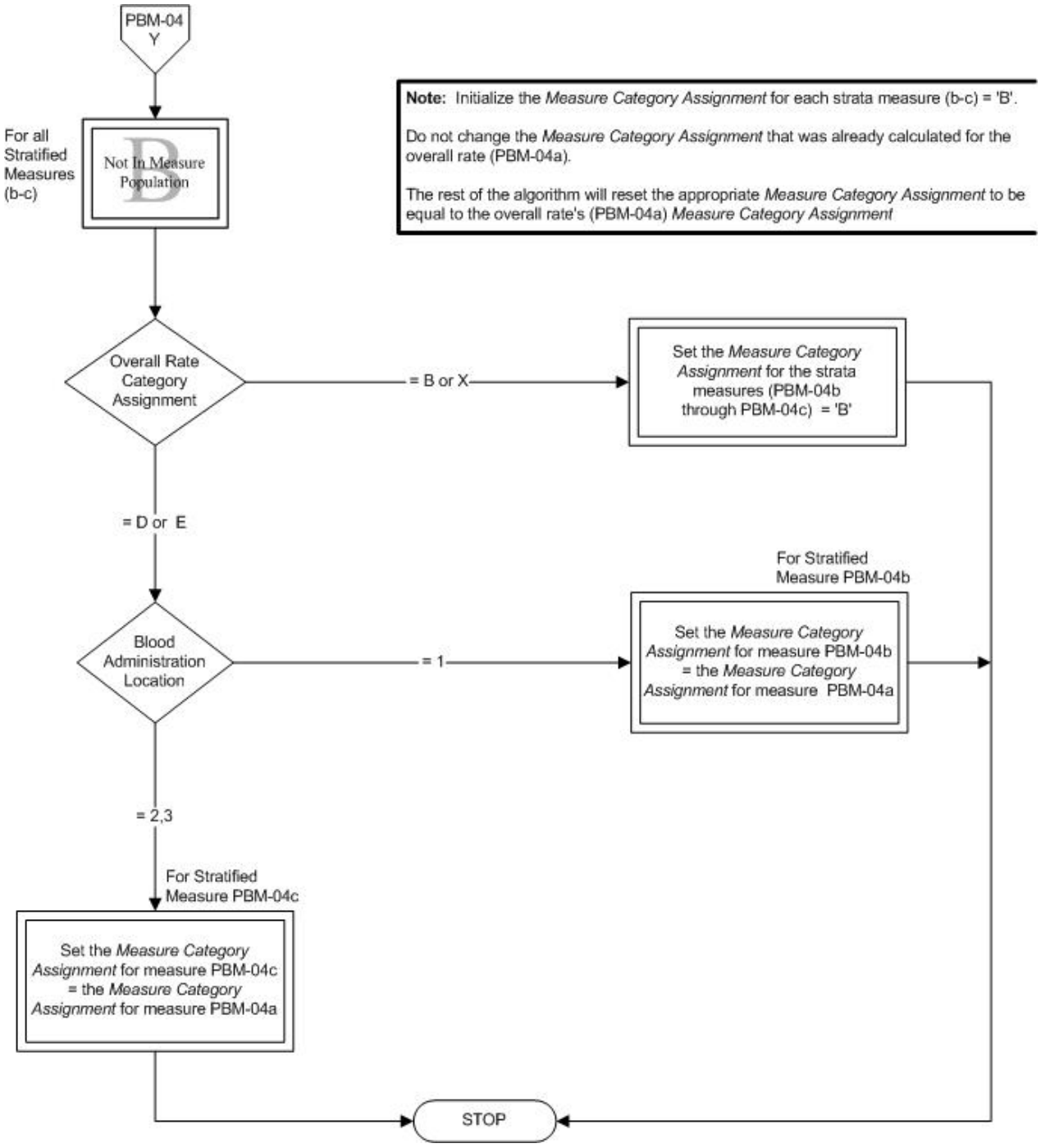


Related Topics

Measure Information Form

Measure Set: Patient Blood Management(PBM)

Set Measure ID: PBM-05

Performance Measure Name: Blood Administration Documentation

Description: The number of transfused red blood cells, plasma or platelet transfusion units/doses (bags) that had documentation of the following: patient identification and an order to transfuse (Blood ID Number) confirmed prior to the initiation of transfusion, transfusion start date and time, and blood pressure, pulse and temperature recorded at specific intervals.

Rationale: Since the majority of blood units are transfused in hospitals, specific policies and procedures have been developed by each hospital to address documentation of blood administration standards in accordance with their state and federal regulations. Though documentation components vary among organizations, identification of the patient and confirmation of the order to transfuse are common indicators used for all blood products since incomplete patient identification could result in an adverse outcome. Prior to administering blood or blood products, patient identification by two identifiers is required by numerous organizations including the AABB Standard 5.19.3, and the Joint Commission National Patient Safety Goal (NPSG) 1. In addition, numerous organizations require or advise that the licensed staff confirm that there is a transfusion order as directed by the AABB Standard 5.19.6 and the elements of performance for the Joint Commission NPSG.01.01.01.

Patient monitoring during the transfusion is an important component related to patient safety. The first 10 to 15 minutes of the transfusion are considered the most critical to assess for a potential transfusion reaction and close observation during this time is recommended in the AABB Primer. Monitoring of vital signs at baseline, during and at the completion of the transfusion in addition to observation are used to assess the patient's condition for any changes.

Type of Measure: Process

Improvement Noted As: Increase in the rate

Numerator Statement: Number of units/doses (bags) with documentation for all of the following:

- patient identification and transfusion order (Blood ID Number) confirmed prior to the initiation of transfusion
- transfusion start date and time
- blood pressure, pulse and temperature recorded pre, during and post transfusion

Included Populations: Not applicable

Excluded Populations: None

Data Elements:

- *Blood ID Number*
- *Patient ID Verification*
- *Plasma ID*

- *Platelet ID*
- *RBC ID*
- *Transfusion Order*
- *Transfusion Start Date*
- *Transfusion Start Time*
- *Vital Sign Monitoring*

Denominator Statement: Number of transfused red blood cells, plasma or platelet units/doses (bags) evaluated

Included Populations:

- Discharges with an ICD-9-CM Principal or Other Procedure Codes for transfusion as defined in Appendix A, Table 9.3-9.6 or a transfusion documented from Blood Bank Records

Excluded Populations:

- Units used in massive transfusion protocols
- Uncrossmatched units
- Units used to prime equipment

Data Elements:

- *Admission Date*
- *Birthdate*
- *Blood Administration Location*
- *Blood Bank Records*
- *Discharge Date*
- *ICD-9-CM Other Procedure Codes*
- *ICD-9-CM Principal Procedure Code*
- *RBC Unit Exclusions*

Risk Adjustment: No.

Data Collection Approach: Retrospective data sources for required data elements include administrative/billing data and medical records. Hospitals that do not use ICD-9-CM procedure codes to document transfusions may use blood bank records to identify the population.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes and blood bank records; therefore, coding practices and transfusion documentation may require evaluation to ensure consistency.

Measure Analysis Suggestions: The data from this measure may be used to evaluate the adherence to organizational policies and procedures for blood administration for each of the blood products. Data could be evaluated by unit or service in order to identify areas for staff education. The data could also be used during accreditation surveys to document the hospital's efforts to improve the accuracy of patient identification when administering blood related to the Joint Commission National Patient Safety Goal #1.

Sampling: Yes. For additional information see the Population and Sampling Specifications.

Data Reported As: Aggregate rate generated from count data reported as a proportion.

Selected References:

- Whitsett CF, Robichaux MG. Assessment of blood administration procedures: problems identified by direct observation and administrative incident reporting. Transfusion. 2001;41:581-86.
- Saxena S, Ramer L, Shulman IA. A comprehensive assessment program to improve blood-administering practices using the FOCUS-PDCA model. Transfusion. 2004; 44:1350-56.
- Novis DA, Miller KA, Howanitz PJ, Renner SW, Walsh MK; College of American Pathologists. Audit of transfusion procedures in 660 hospitals. A College of American Pathologists Q–Probes study of patient identification and vital sign monitoring frequencies in 16494 transfusions. Arch Pathol Lab Med. 2003;127:541-8.
- Roback JD, ed. Technical manual. 16th ed, Bethseda, MD: AABB, 2008.
- The Joint Commission: Comprehensive Accreditation Manual for Hospitals, 2009. Oakbrook Terrace, IL; Joint Commission Resources, Inc., 2009.
- The Joint Commission, “National Patient Safety Goals (NPSG)”, IN: Comprehensive accreditation manual for hospitals, 2009. Oakbrook Terrace, IL; Joint Commission Resources, Inc., 2009, pp. NPSG 1 – NPSG 4.
- AABB Primer of Blood Administration. Revised August 2008. Bethseda, Maryland. [Available at http://www.aabb.org/Content/Professional_Development/Education_and_Training_Material/edtr (accessed November 2009).]

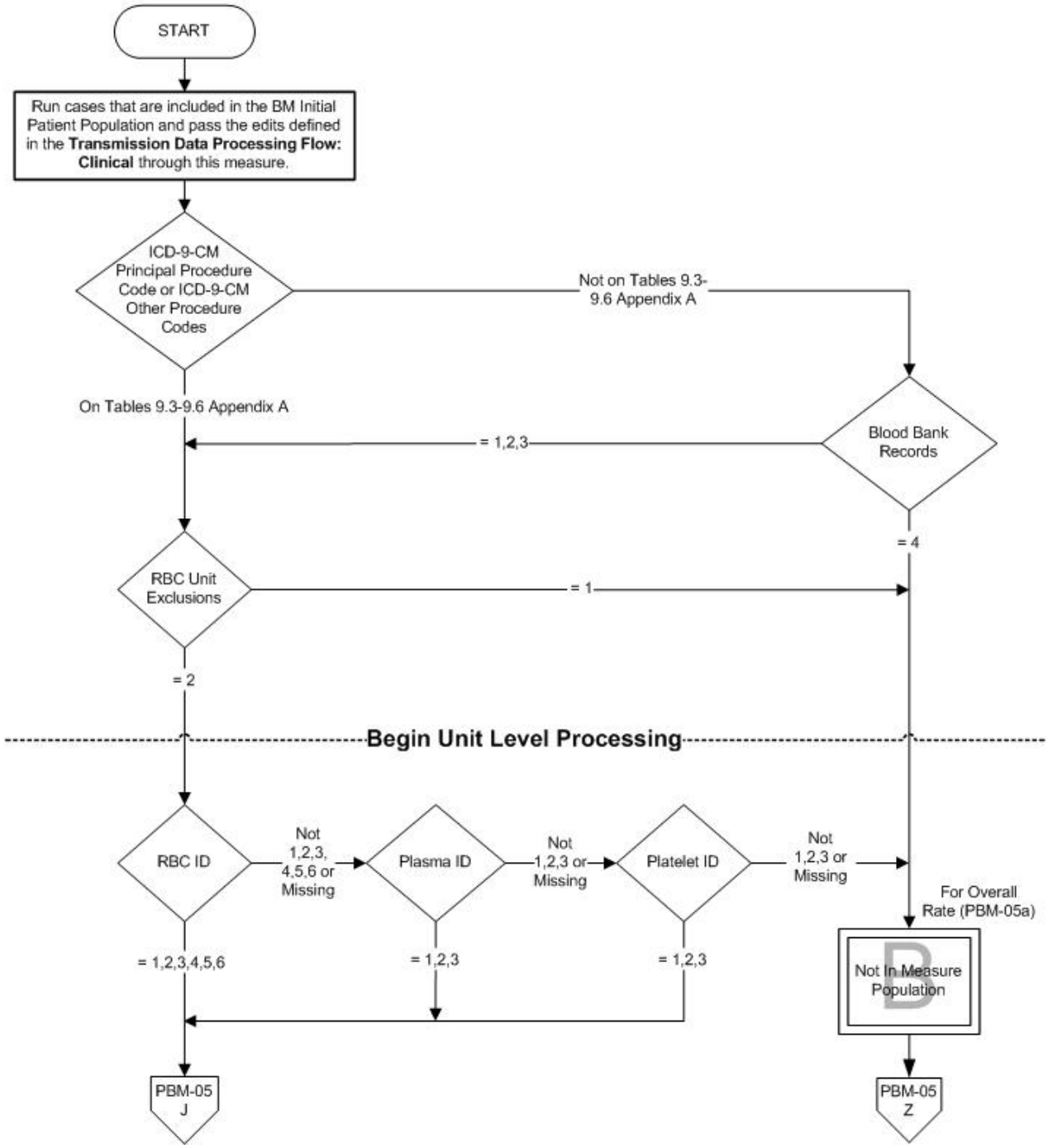
Measure Algorithm:

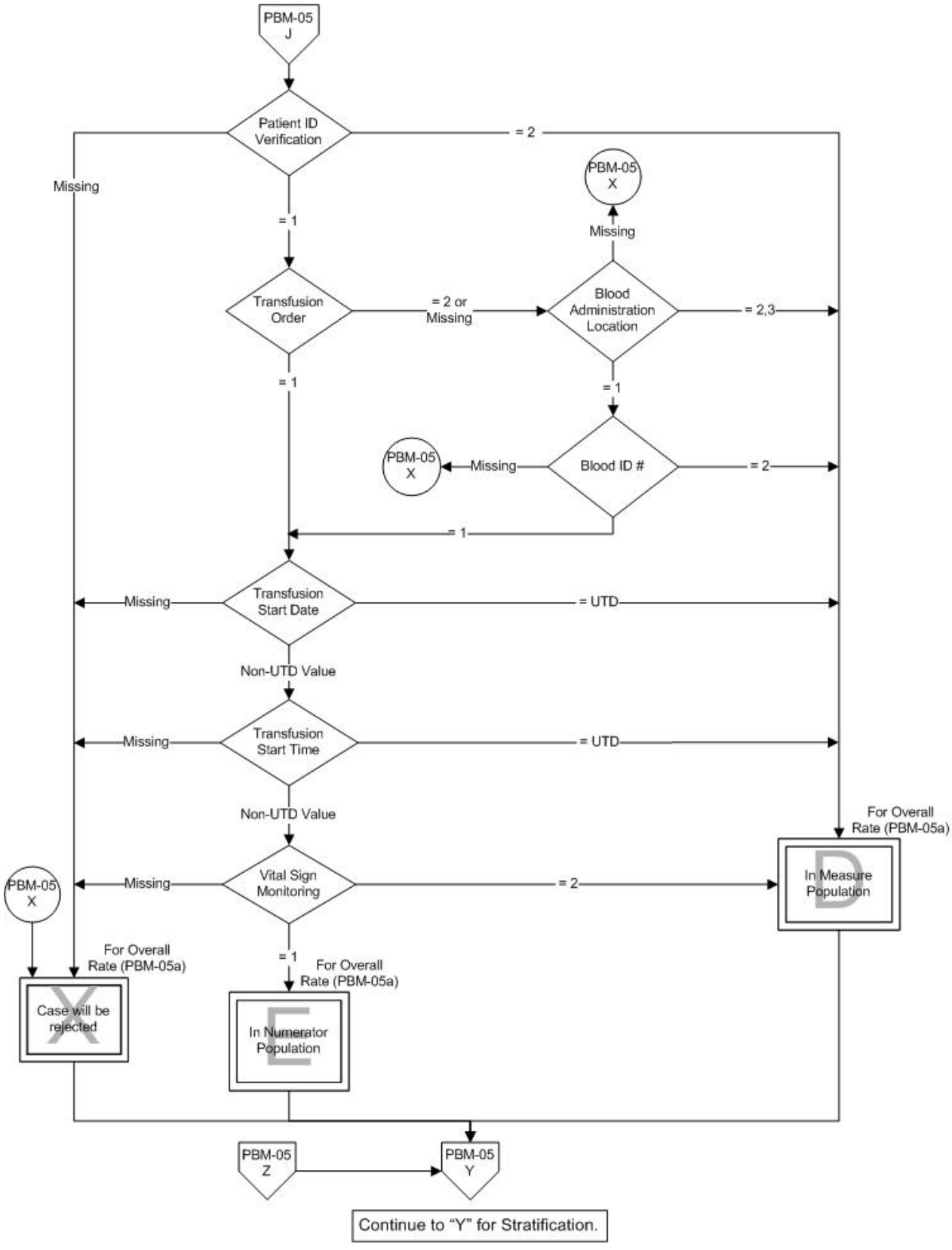
PBM–05: Blood Administration Documentation

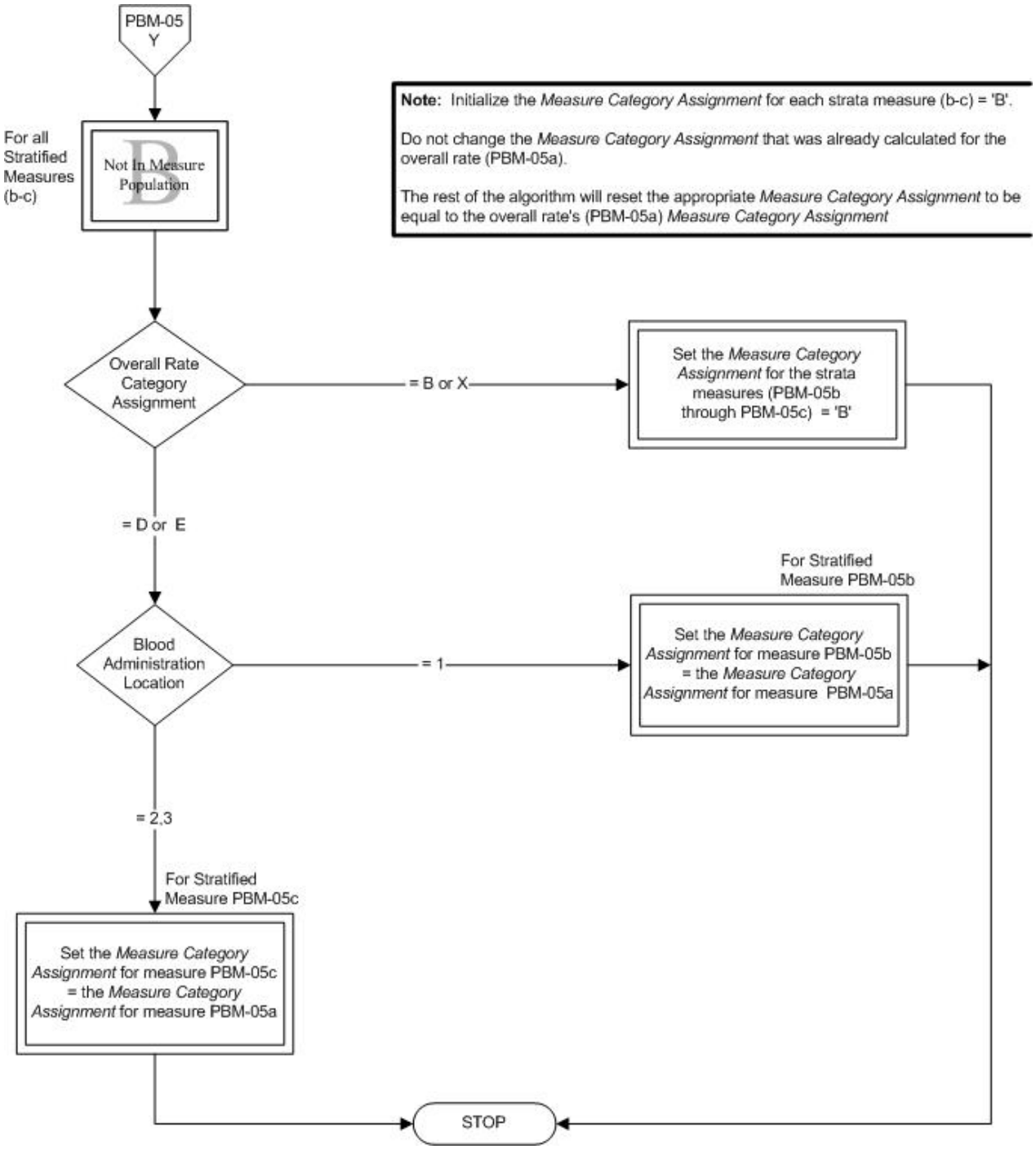
Numerator: Number of blood transfusion units (bags) or doses with documentation for all of the following:

- patient identification (ID) and transfusion order (blood ID number) confirmed prior to the initiation of blood
- date and time of transfusion
- blood pressure, pulse and temperature recorded pre, during and post transfusion

Denominator: Number of transfused red blood cells, plasma and platelet units (bags) or doses evaluated




PBM-05 J
Patient ID Verification
= 2
Missing
PBM-05 X
= 1
Missing
Transfusion Order
= 2 or Missing
Blood Administration Location
= 2,3
= 1
= 1
PBM-05 X
Missing
Blood ID #
= 2
= 1
Transfusion Start Date
Missing
= UTD
Non-UTD Value
Transfusion Start Time
Missing
= UTD
Non-UTD Value
For Overall Rate (PBM-05a)
PBM-05 X
Vital Sign Monitoring
Missing
= 2
In Measure Population
D
For Overall Rate (PBM-05a)
= 1
For Overall Rate (PBM-05a)
Case will be rejected
X
In Numerator Population
E
PBM-05 Z
PBM-05 Y
Continue to "Y" for Stratification.



Related Topics

Measure Information Form

Measure Set: Patient Blood Management(PBM)

Set Measure ID: PBM-06

Performance Measure Name: Preoperative Anemia Screening

Description: Selected elective orthopedic, cardiac and hysterectomy surgical patients with documentation of preoperative anemia screening date 14 – 45 days before surgery start date for procedures scheduled 14 or more days before surgery.

Rationale: Development of formal protocols for preoperative testing of hemoglobin (hgb) for potential high-blood loss elective surgeries could be used to identify and intervene for optimal management of blood resources. Preoperative anemia often goes unrecognized and untreated unless tests are ordered in advance of a planned surgery. Early recognition of anemia offers patients an opportunity to receive the most appropriate transfusion-sparing strategy, and avoid the risk of a potential transfusion. Researchers have shown that preoperative hgb and hematocrit can be used as predictors of outcome for specific types of patients such as cardiac artery bypass graft or orthopedic surgery. In a study by Salido, orthopedic patients with a preoperative hemoglobin <13 g/dL had four times the risk of transfusion than those with a hemoglobin level between 13 g/dL and 15 g/dL.

Type of Measure: Process

Improvement Noted As: Increase in the rate

Numerator Statement: Patients with preoperative anemia screening 14 - 45 days before Anesthesia Start Date

Included Populations: Not applicable

Excluded Populations: None

Data Elements:

- *Preoperative Anemia Screening Date*

Denominator Statement: Selected elective surgical patients

Included Populations:

- Discharges with an ICD-9-CM Principal Procedure Codes of selected surgeries as defined in Appendix A, Tables 2.2, 5.01, 5.02, 5.08, 5.11, 5.22, 5.23, 9.1 or 9.2.

Excluded Populations:

- Patients less than 18 years of age
- Patients with surgery scheduled less than 14 days before Anesthesia Start Date
- Patients not admitted from home

Data Elements:

- *Admission Date*
- *Admission From Home*
- *Birthdate*
- *Discharge Date*
- *ICD-9-CM Principal Procedure Code*
- *ICD-9-CM Principal Procedure Date*
- *Surgery Scheduled Timeframe*

Risk Adjustment: No.

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: These data may be used to evaluate specific patient groups at high risk for a blood transfusion that did not have their pre-operative hemoglobin and/or transfusion testing completed and/or documented prior to surgery. The data could be further analyzed based on physician or type of procedure. Patients who are not included in the numerator could be tracked to see if there were any adverse outcomes due to the lack of preoperative anemia screening.

Sampling: Yes. For additional information see the Population and Sampling Specifications Section.

Data Reported As: Aggregate rate generated from count data reported as a proportion.

Selected References: * Roback JD, ed. Technical manual. 16th ed, Bethseda, MD: AABB, 2008.

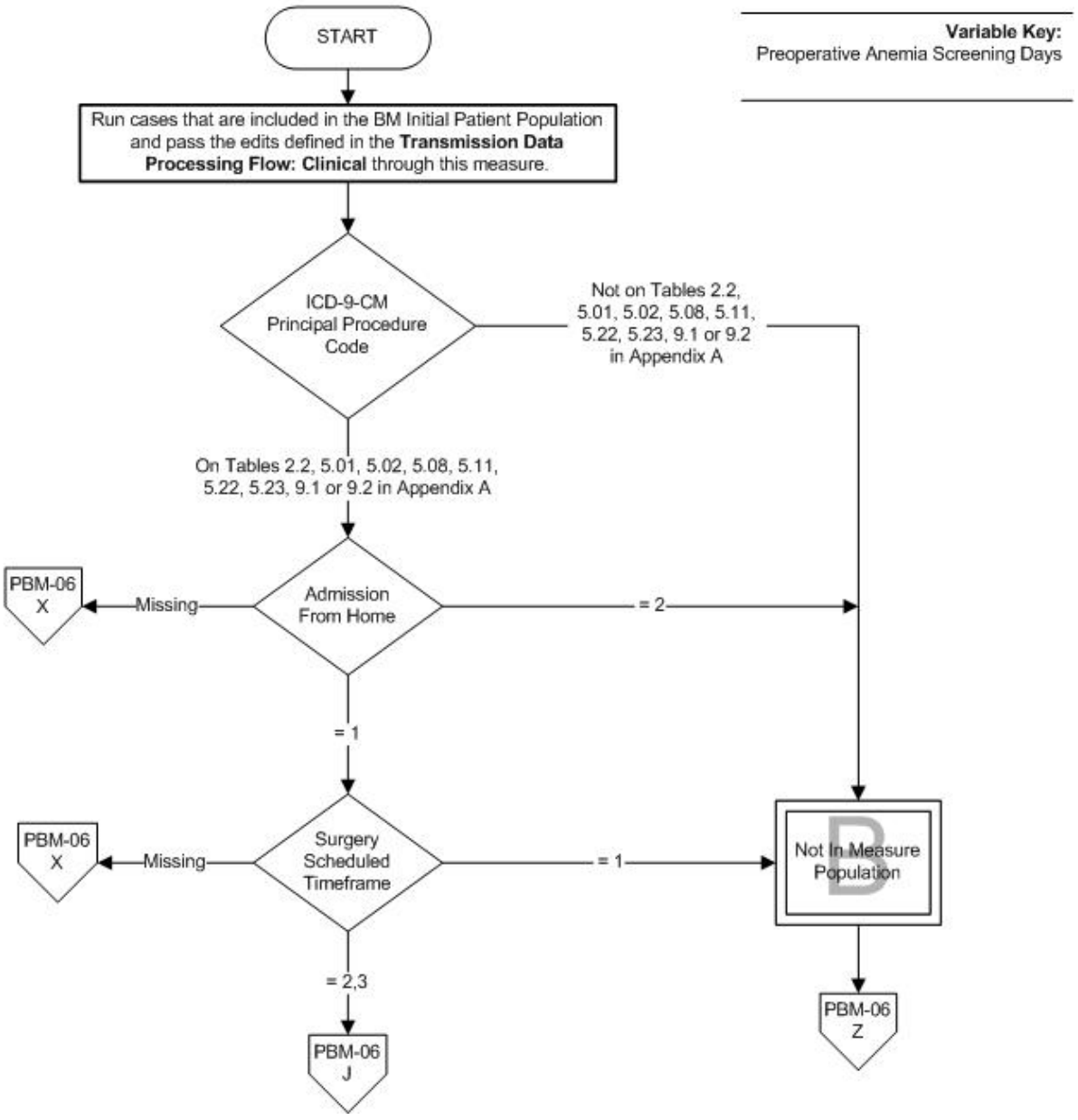
- Salido JA, Martin LA, Gomez LA, et al. Preoperative hemoglobin levels and the need for transfusion after prosthetic hip and knee surgery; analysis of predictive factors. J Bone Joint Surg. 2002;84: 216-20.
- Rady MY, Ryan T, Starr NJ. Perioperative determinants of morbidity and mortality in elderly patients undergoing cardiac surgery. Crit Care Med. 1998;26: 225-235.
- Magovern JA, Sakert T, Magovern GJ et al. A model that predicts morbidity and mortality after coronary artery bypass graft surgery. J Am Coll Cardiol. 1996;28: 1147-1153.
- Campbell DA, Henderson WG, Englesbe, MJ, Hall BL, O'Reilly M, Bratzler D et al. Surgical site infection prevention: the importance of operative duration and blood transfusion-results of the first american college of surgeons –national surgical quality improvement program best practices initiative. J AM Coll Surg 2008;207:810-820.

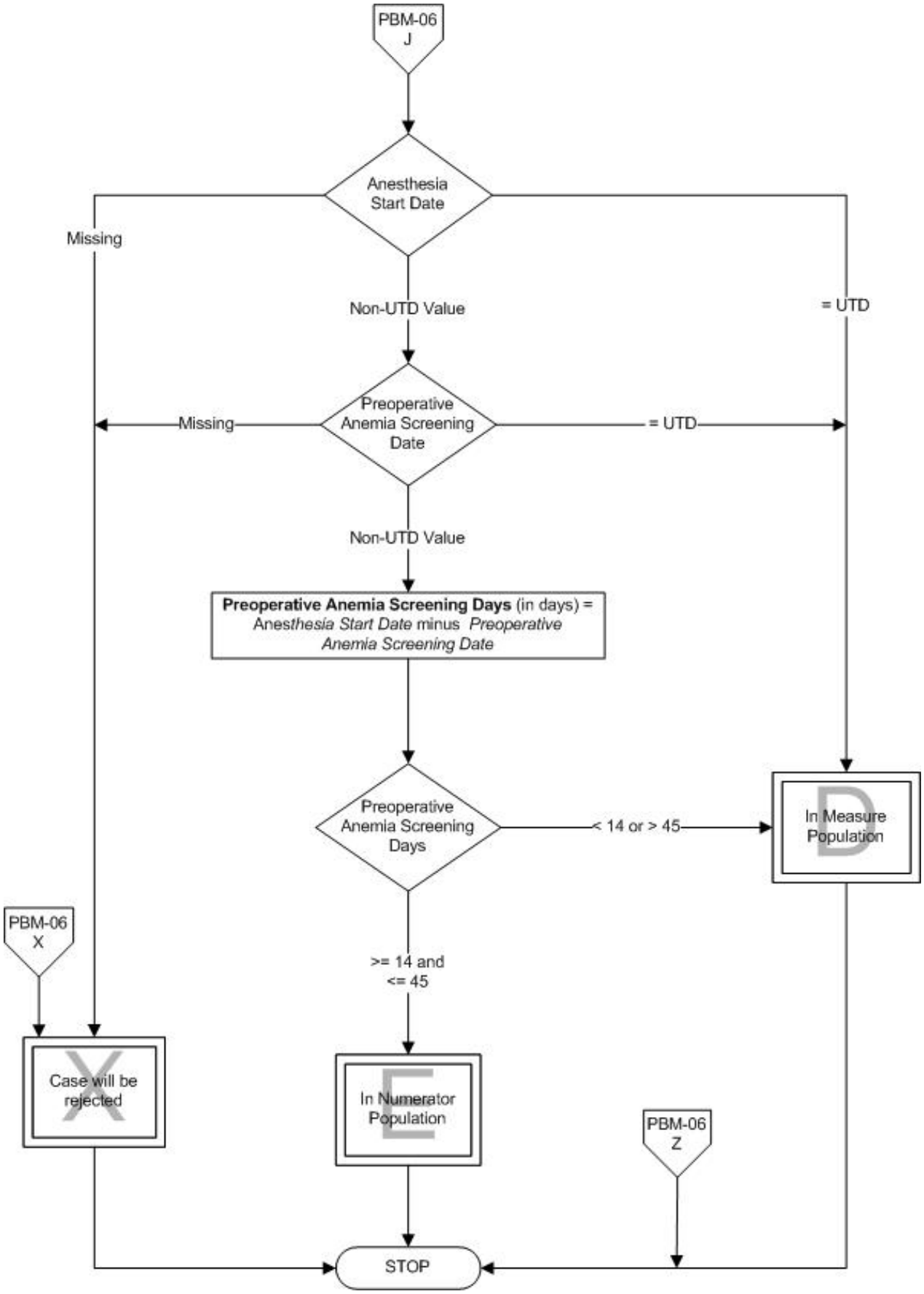
Measure Algorithm:

PBM–06: Preoperative Anemia Screening

Numerator: Patients with documentation of preoperative anemia screening 14 - 45 days before Anesthesia Start Date

Denominator: Selected elective surgical patients





Related Topics

Measure Information Form

Measure Set: Patient Blood Management(PBM)

Set Measure ID: PBM-07

Performance Measure Name: Preoperative Blood Type Testing and Antibody Screening

Description: Selected elective orthopedic, cardiac and hysterectomy surgical patients who had preoperative blood type testing and antibody screening (type and screen or type and crossmatch) completed prior to surgery start time if ordered preoperatively.

Rationale: Hospitals need to ensure that sufficient compatible blood is available for each scheduled procedure. Since about 3% of specimens have a serologic finding that requires further investigation that may cause a delay in the availability of the blood, patient screening of ABO group and Rh type should be collected in sufficient time to complete all pretransfusion testing before surgery begins. According to the Joint Commission's Pre-publication National Patient Safety Goal UP.01.01.01 for 2010, a preprocedure verification process should be conducted to identify items that must be available for the procedure and use a standardized list to verify their availability. Documentation of any required blood products for the procedure is required. Development of formal protocols to ensure that patients have blood testing completed prior to surgery start time for potential high-blood loss elective surgeries may optimize management of blood resources and maximize patient safety.

Type of Measure: Process

Improvement Noted As: Increase in the rate

Numerator Statement: Patients with preoperative type and crossmatch or type and screen completed prior to surgery start time

Included Populations: Not applicable

Excluded Populations: None

Data Elements:

- *Preoperative Blood Type Testing*

Denominator Statement: Selected elective surgical patients

Included Populations:

- Discharges with an ICD-9-CM Principal Procedure Code of selected surgeries as defined in Appendix A, Tables 2.2, 5.01, 5.02, 5.08, 5.11, 5.22, 5.23, 9.1 or 9.2.

Excluded Populations:

- Patients less than 18 years of age
- Patients with type and screen or type and crossmatch ordered preoperatively

Data Elements:

- *Admission Date*
- *Birthdate*
- *Blood Type Testing Ordered*
- *Discharge Date*
- *ICD-9-CM Principal Procedure Code*

Risk Adjustment: No.

Data Collection Approach: Retrospective data collection sources for required data elements include administrative data and medical records.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: These data may be used to evaluate specific patient groups at high risk for a blood transfusion that did not have pre-operative transfusion testing completed and/or documented prior to surgery start time. The data could be further analyzed based on physician or type of procedure. Patients who are not included in the numerator could be tracked to see if there were any adverse outcomes due to the lack of preoperative testing.

Sampling: Yes. For additional information see the Population and Sampling Specifications.

Data Reported As: Aggregate rate generated from count data reported as a proportion.

Selected References: * Saxena S, Nelson JM, Osby M, Shah M, Kempf R, Shulman IA. Ensuring timely completion of type and screen testing and the verification of ABO/Rh status for elective surgical patients. Arch Pathol Lab Med. 2007;131:576-81.

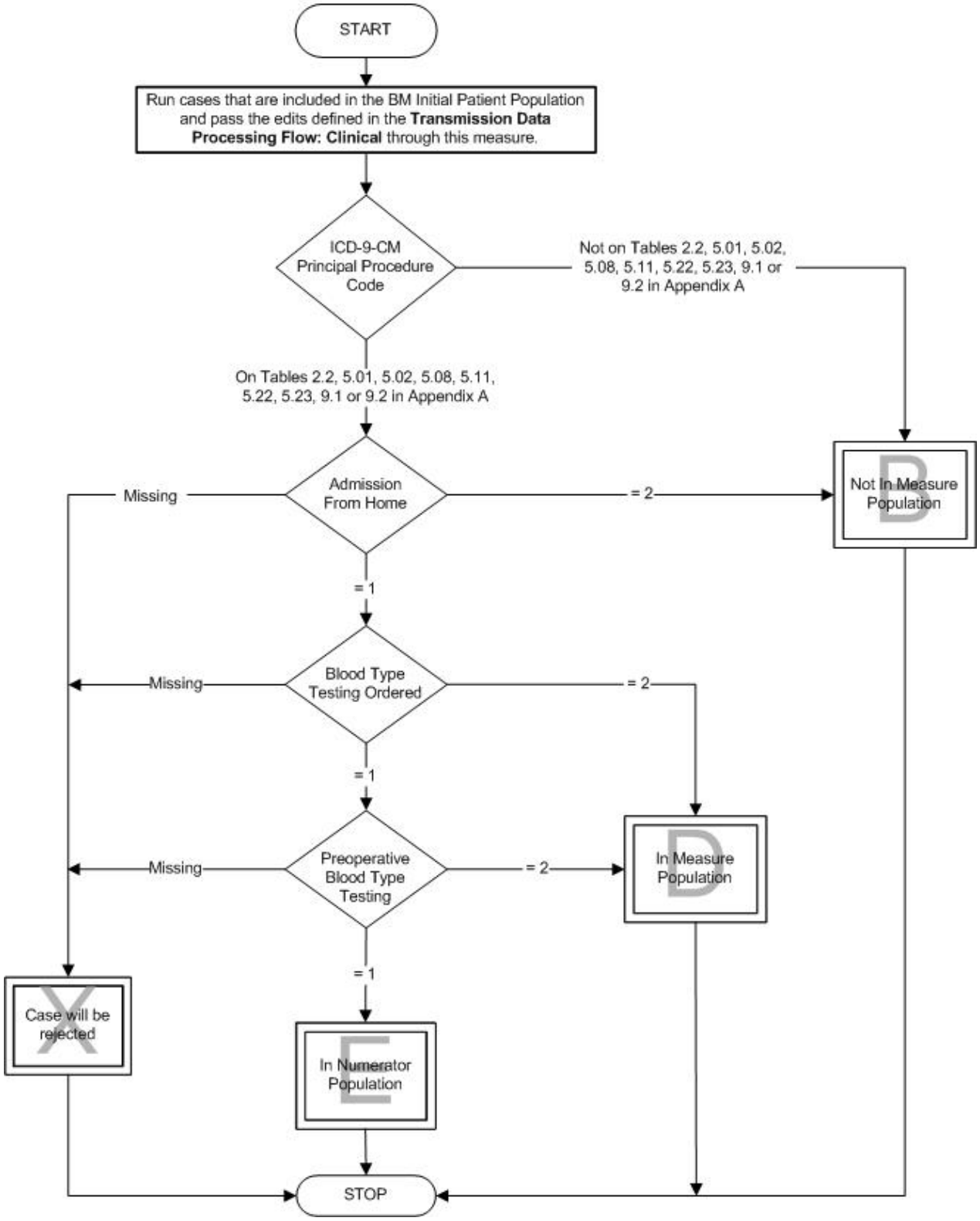
- Friedberg RC, Jones BA, Walsh MK. Type and screen completion for scheduled surgical procedures. A College of American Pathologists Q-Probes study of 8941 type and screen tests in 108 institutions. Arch Pathol Lab Med. 2003;127:533-40.
- Roback JD, ed. Technical manual. 16th ed, Bethseda, MD: AABB, 2008.
- Magovern JA, Sakert T, Magovern GJ et al. A model that predicts morbidity and mortality after coronary artery bypass graft surgery. J Am Coll Cardiol. 1996;28: 1147-1153.
- The Joint Commission 2010 National Patient Safety Goals, Oakbrook Terrace, IL [Available at http://www.jointcommission.org/NR/rdonlyres/868C9E07-037F-433D-8858-0D5FAA4322F2/0/RevisedChapter_HAP_NPSG_20090924.pdf (accessed January 27, 2010).]

Measure Algorithm:

PBM–07: Preoperative Blood Type Testing and Antibody Screening

Numerator: Patients with documentation of preoperative type and crossmatch or type and screen completed prior to Anesthesia Start Time

Denominator: Selected elective surgical patients



Related Topics

Data Element Name: *Admission From Home*

Collected For: PBM-06,

Definition: Patient was admitted for the pre-scheduled elective surgery procedure from home.

Suggested Data Collection Question: Was the patient admitted from home?

Format:

Length: 1
Type: Alphanumeric
Occurs: 1

Allowable Values:

1 Patient was admitted from home.

2 Patient was not admitted from home or unable to determine from medical record documentation.

Notes for Abstraction:

- Patients who have to stay overnight at a location other than their primary residence due to long distance travel for procedure are considered admitted from home.

Suggested Data Sources:

- Face sheet
- Nursing admission assessment
- Physician's notes
- Preop checklist

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name:	*Anesthesia Start Date*
Collected For:	PBM-06,
Definition:	The date the anesthesia for the procedure started.
Suggested Data Collection Question:	On what date did the anesthesia for the procedure start?
Format:	**Length:** 10 – MM-DD-YYYY (includes dashes) **Type:** Date **Occurs:** 1
Allowable Values:	MM-DD-YYYY MM = Month (01-12) DD = Day (01-31) YYYY = Year (2001-Current Year) Leave Blank if Unable to Determine
Notes for Abstraction:	If the Anesthesia Start Date cannot be determined from medical record documentation, enter UTD. When the date documented is obviously invalid (not a valid format/range [12-39-20xx] or after the Discharge Date or Anesthesia End Date) and no other documentation can be found that provides the correct information, the abstractor should select "UTD." Example: Patient expires on 02-12-20xx and documentation indicates the Anesthesia Start Date was 03-12-20xx. Other documentation in the medical record supports the date of death as being accurate, but no other documentation of the Anesthesia Start Date can be found. Since the Anesthesia Start Date is outside of the parameter for care (after the Discharge Date [death]) and no other documentation is found, the abstractor should leave blank. If the Anesthesia Start Date is incorrect (in error) but it is a valid date and the correct date can be supported with other documentation in the medical record, the correct date may be entered. If supporting documentation of the correct date cannot be found, the medical record must be abstracted as documented or at "face value." Examples: The anesthesia form is dated 12-10-2007, but other documentation in the medical record supports that the correct date was 12-10-2009. Enter the correct date of 12-10-2009 as the Anesthesia Start Date. An Anesthesia End Date of 11-20-20xx is documented but the Anesthesia Start Date is documented as 11-10-20xx. If no other documentation can be found to support another Anesthesia Start Date, then it must be abstracted as 11-10-20xx because the date is not considered invalid or outside the parameter of care.

Suggested Data Sources:

Other Suggested Sources:

- Intraoperative record
- Circulator record
- Post-anesthesia evaluation record
- Operating room notes

Additional Notes:

Suggested Data Sources:

Note: The anesthesia record is the priority data source for this data element, if a valid Anesthesia Start Date is found on the anesthesia record, use that date. If a valid date is not on the anesthesia record, other suggested data sources may be used in no particular order to determine the Anesthesia Start Date.

Priority Source:

- Anesthesia record

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name:	*Blood Administration Location*
Collected For:	PBM-02, PBM-03, PBM-04, PBM-05,
Definition:	The hospital setting (intraoperative or non-intraoperative) where the blood product began infusing.
Suggested Data Collection Question:	In what setting did the blood product begin infusing?
Format:	**Length:** 1 **Type:** Alphanumeric **Occurs:** 1-12

Allowable Values:

1 Intraoperative setting

2 Non-introperative setting

3 Unable to determine

Notes for Abstraction:

- Select setting for each unit transfused based on the physical location of the patient.
- Intraoperative setting is anytime during the operation.
- Non-intraoperative setting is any area outside of the operating room. For example, setting such as the intensive care unit, surgical floor or emergency room.

Suggested Data Sources:

- Anesthesia record
- Emergency department record
- Nursing notes
- Nursing flow sheet
- Nursing admission assessment
- Progress notes
- Physician's notes
- Operative notes
- Operating room notes
- Operative report
- Procedure notes
- ICU notes
- PACU/recovery room record

Blood Administration Documentation Sheet

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Blood Bank Records*

Collected For: PBM-01, PBM-02, PBM-03, PBM-04, PBM-05,

Definition: Documentation that the patient received red blood cells (RBCs), plasma or platelets after hospital arrival.

Suggested Data Collection Question: Was there documentation that the patient received RBCs, plasma or platelets after hospital arrival?

Format:

Length: 1
Type: Alphanumeric
Occurs: 1-12

Allowable Values:

Select all that apply: 1 RBCs

2 Plasma

3 Platelets

4 None of the above or unable to determine from medical record documentation

Notes for Abstraction:

- Include transfusions given in the emergency room or observation area.

Suggested Data Sources: Blood Bank Records

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion

Data Element Name: *Blood ID Number*

Collected For: PBM-05,

Definition: Documentation of the actual blood bank identification number in the intraoperative record for the unit that was transfused.

Suggested Data Collection Question: Was there documentation of a blood bank identification number for the unit or dose of blood transfused during surgery?

Format:

Length: 1
Type: Alphanumeric
Occurs: 1

Allowable Values:

1 There is documentation of a blood bank identification number for the unit that was transfused.

2 There is no documentation of a blood bank identification number for the unit that was transfused or unable to determine from medical record documentation.

Notes for Abstraction:

Suggested Data Sources:

- Anesthesia record
- Operative report

Blood administration record

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Blood Type Testing Ordered*

Collected For: PBM-07,

Definition: A type and screen and/or type and crossmatch was ordered preoperatively for the elective surgery.

Suggested Data Collection Question: Was a type and screen and/or type and crossmatch ordered preoperatively?

Format:

Length: 1
Type: Alphanumeric
Occurs: 1

Allowable Values:

1 A type and screen and/or type and crossmatch was ordered preoperatively.

2 A type and screen and/or type and crossmatch was not ordered preoperatively or unable to determine

Notes for Abstraction:

Suggested Data Sources:

- Physician orders
- Preop checklist

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Clinical Indication for Plasma*

Collected For: PBM-03,

Definition: Documentation by the physician/advance practice nurse/physician assistant or (physician/APN/PA) of the clinical indication for the plasma transfusion unit.

Suggested Data Collection Question: Was there a clinical indication documented by the physician/APN/PA for the transfused plasma unit?

Format:

Length: 1
Type: Numeric
Occurs: 1 - 3

Allowable Values:

1 There was a clinical indication documented by the physician/APN/PA for the transfused plasma unit.

2 There was no documentation of a clinical indication for the transfusion or unable to determine from the medical record.

Notes for Abstraction:

- The clinical indication for the transfusion must be documented within 24 hours after the start of the transfusion.
- Select the first four plasma transfusion units closest to hospital arrival for abstraction.

Suggested Data Sources:

ONLY PHYSICIAN/APN/PA DOCUMENTATION OF THE CLINICAL INDICATION FOR ADMINISTERING BLOOD:

- Anesthesia record
- Consultation notes
- Emergency department record
- Physician orders
- Progress notes

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Clinical Indication for Platelets*

Collected For: PBM-04,

Definition: Documentation by the physician/advance practice nurse/physician assistant (physician/APN/PA) of the clinical indication for the transfused platelet unit.

Suggested Data Collection Question: Was there a clinical indication documented by the physician/APN/PA for the transfused platelet unit?

Format:

Length: 1
Type: Numeric
Occurs: 1 - 3

Allowable Values:

1 There was a clinical indication documented by the physician/APN/PA for the transfused platelet unit.

2 There was no documentation of clinical indication for the platelet transfusion or unable to determine from the medical record

Notes for Abstraction:

- The clinical indication for the transfusion must be documented within 24 hours after the start of the transfusion.
- Select the first three units transfused after hospital arrival for abstraction.

Suggested Data Sources:

ONLY PHYSICIAN/APN/PA DOCUMENTATION OF THE CLINICAL INDICATION FOR ADMINISTERING PLASMA:

- Anesthesia record
- Consultation notes
- Emergency department record
- Physician orders
- Progress notes

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Clinical Indication for RBCs*

Collected For: PBM-02,

Definition: Documentation by the physician/advance practice nurse/physician assistant (physician/APN/PA) of the clinical indication for the tranfused red blood cell (RBCs) unit.

Suggested Data Collection Question: Was there a clinical indication documented by the physician/APN/PA for the transfused RBC unit?

Format:

Length: 1
Type: Numeric
Occurs: 1 - 6

Allowable Values:

1 There was a clinical indication documented by the physician/APN/PA for the transfused RBC unit.

2 There was no clinical indication documented by the physician/APN/PA for the transfused RBC unit or unable to determine from medical record documentation.

Notes for Abstraction:

- The clinical indication for the transfusion must be documented within 24 hours after the start of the transfusion.
- Select the first six RBC transfusion units after hospital arrival for abstraction.

Suggested Data Sources:

ONLY PHYSICIAN/APN/PA DOCUMENTATION OF THE CLINICAL INDICATION FOR ADMINISTERING RBCs:

- Anesthesia record
- Consultation notes
- Emergency department record
- Operative notes
- Physician orders
- Progress notes

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name:	*Education Addressed Risks, Benefits and Alternatives to Transfusion*
Collected For:	PBM-01,
Definition:	Documentation that information addressing risks, benefits and alternatives to transfusion was given to the patient/caregiver prior to the initial transfusion or the initial transfusion was deemed a medical emergency after hospital arrival.
Suggested Data Collection Question:	Was there documentation that information regarding risks, benefits and alternatives to transfusion was given to the patient/caregiver prior to the initial transfusion event or was the initial transfusion deemed a medical emergency after hospital arrival?
Format:	**Length:** 1 **Type:** Numeric **Occurs:** 1

Allowable Values:

1 Information addressing the risks, benefits and alternatives to transfusion was given to the patient/caregiver prior to the initial transfusion after hospital arrival.

2 Information addressing the risks, benefits and alternatives to transfusion was not given to the patient/caregiver prior to the initial transfusion after hospital arrival or unable to determine from medical record documentation.

Notes for Abstraction:

- Use only documentation provided in the medical record.
- If the patient refused information about risks, benefits and alternatives to transfusion, select “1.”
- The caregiver is defined as the patient’s family or any other person (e.g., guardian) who will be responsible for care of the patient.

Suggested Data Sources:

- Consultation notes
- Emergency department record
- History and physical
- Nursing notes
- Progress notes
- Operative notes
- Admission forms
- Consent form
- Emergency department record
- Progress notes
- Nursing notes

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Patient ID Verification*

Collected For: PBM-05,

Definition: Documentation that two unique patient identifiers were checked during a two-person verification process (or the use of automated identification technology may be used in place of one of the individuals) prior to the administration of the transfusion unit/dose (bag).

Suggested Data Collection Question: Was there documentation that two unique patient identifiers were checked or automated identification was used in place of one person during the verification process prior to the administration of the blood transfusion unit/dose (bag)?

Format:

Length: 1
Type: Numeric
Occurs: 1 - 12

Allowable Values:

1 There was documentation that two unique patient identifiers were checked during the two person verification process or an automated identification system was used in place of one of the individuals prior to the administration of the transfusion unit/dose (bag).

2 There was no documentation that two unique patient identifiers or automated identification were used during the two-person identification check prior to the administration of the transfusion unit/dose (bag) or unable to determine from medical record documentation.

Notes for Abstraction:

- *Patient ID Verification* must be associated with the blood product and RBC ID that was selected for abstraction.
- *Patient ID Verification* can be documented by the signature of two persons that attest that two unique patient identifiers were checked to verify the identification of the patient prior to the transfusion or the signature of one person and an automated identification device.
- Patient identifiers that could be used include; name, date of birth, patient identification number or unique identifier given at the time the crossmatch was drawn.
- The patient room number should not be used to identify the patient.

Suggested Data Sources:

- Anesthesia record
- Emergency department record
- Nursing notes
- Progress notes
- Physician's notes
- Operative notes
- Operative report
- Procedure notes
- PACU/recovery room record

- Blood administration form

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Plasma ID*

Collected For: PBM-03, PBM-05,

Definition: The number assigned to designate whether the plasma unit was the first, second or third unit transfused after hospital arrival.

Suggested Data Collection Question: What number was assigned to the plasma unit selected for abstraction?

Format:

Length: 1
Type: Numeric
Occurs: 1 - 3

Allowable Values:

1 First Plasma Unit

2 Second Plasma Unit

3 Third Plasma Unit

Notes for Abstraction:

- The abstractor assigns a plasma identification (ID) number for each unit evaluated.
- Each allowable value is only used one time and is determined by the order in which it was administered.
- Abstract up to three plasma transfusion units per patient.
- Include plasma transfusions administered after hospital arrival.

Suggested Data Sources:

- Anesthesia record
- Emergency department record
- Progress notes
- Operative notes
- Blood administration form
- Blood bank records

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Platelet ID*

Collected For: PBM-04, PBM-05,

Definition: The number assigned to designate whether the platelet unit was the first, second or third unit that was transfused after hospital arrival.

Suggested Data Collection Question: What number was assigned to the platelet unit selected for abstraction?

Format:

Length: 2
Type: Numeric
Occurs: 1 - 3

Allowable Values:

1 First Platelet Unit

2 Second Platelet Unit

3 Third Platelet Unit

Notes for Abstraction:

- The abstractor assigns a platelet identification (ID) number for each unit evaluated.
- Each allowable value is only used one time and is determined by the order in which it was administered.
- Abstract up to three platelet units per patient
- Include platelet transfusions administered after hospital arrival.

Suggested Data Sources:

- Anesthesia record
- Emergency department record
- Progress notes
- Operative notes
- Blood administration form
- Blood bank records

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Pre-transfusion Hematocrit*

Collected For: PBM-02,

Definition: Documentation of the closest hematocrit (hct) completed prior to the RBC transfusion.

Suggested Data Collection Question: What was documented as the closest pre-transfusion hct prior to the RBC transfusion?

Format:

Length: 4
Type: Alphanumeric
Occurs: 1 - 6

Allowable Values:

Enter the patient's closest hematocrit result (number only, reported in percent) performed prior to each RBC transfusion.

UTD = Unable to Determine

- For abstraction, select either the pre-transfusion hematocrit or the hemoglobin result; both are not required.
- Select the result associated with the RBC ID selected for abstraction.
- When recording the allowable value for hematocrit, input 23.00 if the patient's hematocrit is 23%.

Notes for Abstraction:

Suggested Data Sources:

- Consultation notes
- Emergency department record
- History and physical
- Laboratory report
- Progress notes
- Operative report
- Blood administration form

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Pre-transfusion Hemoglobin*

Collected For: PBM-02,

Definition: Documentation of the closest hemoglobin (hgb) completed prior to the RBC transfusion.

Suggested Data Collection Question: What was documented as the closest pre-transfusion hgb prior to the RBC transfusion?

Format:

Length: 4
Type: Alphanumeric
Occurs: 1 - 6

Allowable Values:

Enter the patient's closest hemoglobin result reported in g/dL performed prior to transfusion.

UTD = Unable to Determine

- For abstraction, select either the pre-transfusion hematocrit or the hemoglobin result; both are not required.
- Select the hemoglobin result that is associated with the RBC ID selected for abstraction.
- If the hemoglobin result is 9.9 g/dL, enter 9.9.

Notes for Abstraction:

Suggested Data Sources:

- Consultation notes
- Emergency department record
- History and physical
- Laboratory report
- Progress notes
- Operative report
- Blood administration form

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Pre-transfusion PT/INR Result*

Collected For: PBM-03,

Definition: Documentation of PT/INR result completed prior to the plasma transfusion.

Suggested Data Collection Question: What was the PT/INR result completed prior to the plasma transfusion.

Format:

Length: 1 - 5
Type: Alphanumeric
Occurs: 1 - 3

Allowable Values:

Enter the closest PT/INR result to the plasma transfusion.

UTD = Unable to determine

Notes for Abstraction:

- Enter the PT/INR result that is associated with the plasma ID selected for abstaction.
- An allowable value should be entered with one decimal. For example, a PT/INR of 1.5 should be entered as written. INR values over 10 should be entered as 10.00.

Suggested Data Sources:

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Pre-transfusion Platelet Count*

Collected For: PBM-04,

Definition: Documentation of the closest platelet count completed prior to the platelet transfusion.

Suggested Data Collection Question: What was the closest platelet count documented prior to the platelet transfusion?

Format:

Length: 1 - 5
Type: Alphanumeric
Occurs: 1 - 3

Allowable Values:

Enter the patient's closest platelet count result, in 10^9/µL performed prior to the platelet transfusion selected for abstraction.

UTD = Unable to Determine

Note:

- Select the platelet count result that is associated with the Platelet ID selected for abstraction.
- An allowable value for a platelet count result should be entered as '11.00' for a platelet count of 11,000.

Notes for Abstraction:

Suggested Data Sources:

- Anesthesia record
- Consultation notes
- Emergency department record
- History and physical
- Laboratory report
- Progress notes
- Operative report
- Blood administration form

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Preoperative Anemia Screening Date*

Collected For: PBM-06,

Definition: The date that preoperative anemia screening or a hemoglobin (hgb)or hematocrit (hct) result was completed.

Suggested Data Collection Question: What date was preoperative anemia screening or a hgb or hct result completed?

Format:

Length: 10 - MM-DD-YYYY (includes dashes)
Type: Date
Occurs: 1

Allowable Values:

MM-DD-YYYY

MM = Month (01-12)
DD = Day (01-31)
YYYY = Year (2001-Current Year)
UTD

Notes for Abstraction:

- Select the *Preoperative Anemia Screening Date* associated with the elective surgical procedure selected for abstraction.*Preoperative Transfusion Testing*.
- The medical record must be abstracted as documented (taken at "face value"). When the date documented is obviously in error (not a valid date/format) and no other documentation is found that provides this information, the abstractor should select UTD.
- Example: Documentation indicates the Preoperative Anemia Screening Date was 03-42-2008. No other documentation in the medical record provides a valid date. Since the Preoperative Anemia Screening Date is outside of the range listed in the Allowable Values for "Day," it is not a valid date, and the abstractor should select UTD.

Suggested Data Sources:

- Nursing notes
- Progress notes
- Preop checklist
- Pre-arrival laboratory reports

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Preoperative Blood Type Testing*

Collected For: PBM-07,

Definition: Documentation that a type and screen or type and crossmatch was completed prior to anesthesia start time.

Suggested Data Collection Question: Was there documentation of a type and screen or type and crossmatch completed prior to anesthesia start time?

Format:

Length: 1
Type: Numeric
Occurs: 1

Allowable Values:

1 There is documentation that a type and screen or type and crossmatch was completed prior to anesthesia start time.

2 There is no documentation that a type and screen or type and crossmatch was completed prior to anesthesia start time or unable to determine from medical record documentation.

Notes for Abstraction:

- If type and screen and type and crossmatch were completed prior to the surgical procedure, select “1”.
- Anesthesia Start Time is the same as surgery start time.

Suggested Data Sources:

- Consultation notes
- History and physical
- Progress notes
- Preop checklist
- Pre-arrival laboratory reports

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *RBC ID*

Collected For: PBM-02, PBM-05,

Definition: The number assigned to designate whether the RBC transfusion was the first through the sixth RBC transfusion unit that was transfused after hospital arrival.

Suggested Data Collection Question: What RBC unit was selected for abstraction?

Format:

Length: 1
Type: Numeric
Occurs: 1 - 6

Allowable Values:

1 First RBC Unit

2 Second RBC Unit

3 Third RBC Unit

4 Fourth RBC Unit

5 Fifth RBC Unit

6 Sixth RBC Unit

Notes for Abstraction:

- The abstractor assigns a RBC identification (ID) number for each unit evaluated.
- Each allowable value is used only one time and is determined by the order in which it was administered.
- Abstract up to six RBC transfusion units per patient.
- Include RBC transfusions administered after hospital arrival.

Suggested Data Sources:

- Anesthesia record
- Emergency department record
- Progress notes
- Operative notes
- Operative report
- Medication administration record (MAR)
- Blood administration form
- Blood bank records

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion

None	None

Data Element Name:	*RBC Unit Exclusions*
Collected For:	PBM-02, PBM-05,
Definition:	Red blood cell (RBC) units that are excluded from abstraction. The following RBC units excluded from abstraction are; units used for a massive transfusion protocol or documentation of hemorrhagic shock, uncrossmatched units given during an emergency situation and units used to prime equipment for treatment.
Suggested Data Collection Question:	Was this unit transfused for a massive transfusion protocol, hemorrhagic shock, uncrossmatched or used to prime equipment?
Format:	**Length:** 1 **Type:** Alphanumeric **Occurs:** 1-6

Allowable Values:

1. There was documentation that this unit was transfused for a massive transfusion protocol, hemorrhagic shock, uncrossmatched or used to prime equipment

1. There was no documentation that this unit was transfused for a massive transfusion protocol, hemorrhagic shock, uncrossmatched or used to prime equipment or unable to determine from medical record documentation.

Notes for Abstraction:

- If the initial six units transfused are excluded due to the exclusion criteria, abstract the next six units that were tranfused. If the patient only received RBC units that are excluded, then no RBC units should be abstracted.

Suggested Data Sources:

- Anesthesia record
- Circulation record
- Emergency department record
- Laboratory report
- Nursing notes
- Nursing flow sheet
- Progress notes
- Physician orders
- Physician’s notes
- Operative notes
- Operating room notes
- Operative report
- Procedure notes
- ICU notes

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Surgery Scheduled Timeframe*

Collected For: PBM-06,

Definition: The elective surgery was scheduled in less than 14 days from the planned surgery start date.

Suggested Data Collection Question: Was the elective surgery scheduled in less than 14 days from the planned surgery?

Format:

Length: 1
Type: Alphanumeric
Occurs: 1

Allowable Values:

1 There was documentation that the elective surgery was scheduled in less than 14 days from the planned surgery.

2 There was no documentation that the elective surgery was scheduled in less than 14 days from the planned surgery or unable to determine from medical record documentation.

Notes for Abstraction:

Suggested Data Sources:

- Preop checklist

Preoperative paperwork

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Transfusion Consent*

Collected For: PBM-01,

Definition: Documentation of a signed consent **prior** to the first transfusion of RBCs, platelets or plasma.

Suggested Data Collection Question: Was there documentation of a signed consent **prior** to the first blood transfusion?

Format:

Length: 1
Type: Numeric
Occurs: 1

Allowable Values:

1 There was documentation of a signed consent prior to the first blood transfusion.

2 The first blood transfusion was deemed a medical emergency.

3 There was no documentation of a blood transfusion consent prior to the first blood transfusion or unable to determine from medical record documentation.

Notes for Abstraction:

- The consent may be signed by the patient or caregiver.
- If organizations require a consent prior to every transfusion, then review the record for the first transfusion to answer this data element.
- For hospitals that use a general consent for treatment that includes transfusions, select “Yes”.
- If a patient receives chronic transfusions and a previous consent is acceptable for a defined timeframe within the institution, select “1” if the consent is valid.

Suggested Data Sources:

- Emergency department record
- History and physical
- Nursing notes
- Progress notes
- Operative notes
- Consent form

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name: *Transfusion Order*

Collected For: PBM-05,

Definition: An order to transfuse was written by the physician/advance practice nurse/physician assistant (physician/APN/PA) **prior** to the initiation of the transfusion.

Suggested Data Collection Question: Was there documentation of an order to transfuse **prior** to the transfusion?

Format:

Length: 1
Type: Numeric
Occurs: 1 - 12

Allowable Values:

1 There was documentation of an order to transfuse prior to transfusion.

2 There was no documentation of an order to transfuse prior to transfusion or unable to determine from medical record documentation.

Notes for Abstraction:

- A verbal or telephone order that was written prior to the transfusion is acceptable.
- The Transfusion Order must be associated with the blood product unit ID that was selected for abstraction.
- Note: Transfusion Order may apply to more than one unit/dose (bag). For example: An order written to "Transfuse two doses of platelets" would apply to both bags that were administered.

Suggested Data Sources:

ONLY PHYSICIAN/APN/PA DOCUMENTATION OF THE ORDER TO TRANSFUSE:

- Anesthesia record
- Consultation notes
- Emergency department record
- Operative notes
- Physician orders
- Progress notes

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name:	*Transfusion Start Date*
Collected For:	PBM-05,
Definition:	The date that the blood transfusion unit/dose (bag) was administered.
Suggested Data Collection Question:	What is the date that the blood transfusion unit/dose (bag) was administered?
Format:	**Length:** 10 – MM-DD-YYYY (includes dashes) **Type:** Date **Occurs:** 1 - 12
Allowable Values:	MM-DD-YYYY MM = Month (01-12) DD = Day (01-31) YYYY = Year (2001-Current Year) UTD
Notes for Abstraction:	• Abstract the Transfusion Date associated with the Transfusion Start Time of the unit/dose (bag) from the blood product ID selected for abstraction. • Some of the dates of the transfusion units may be the same date. Record a transfusion date for each unit abstracted up to three units for plasma or platelets or up to six units for RBCs. • The medical record must be abstracted as documented (taken at "face value"). When the date documented is obviously in error (not a valid date/format) and no other documentation is found that provides this information, the abstractor should select UTD. Example: Documentation indicates the Transfusion Start Date was 03-42-2008. No other documentation in the medical record provides a valid date. Since the Transfusion Start Date is outside of the range listed in the Allowable Values for "Day," it is not a valid date and the abstractor should select UTD.
Suggested Data Sources:	• Anesthesia record • Emergency department record • Nursing notes • Progress notes • Operative notes • Blood administration record
Additional Notes:	

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name:	*Transfusion Start Time*
Collected For:	PBM-05,
Definition:	The start time (military time) of the unit/dose (bag) of RBCs, plasma or platelets that was administered.
Suggested Data Collection Question:	What was the start time of the blood unit/dose (bag) administration?
Format:	**Length:** 5 - HH:MM (with or without colon) or UTD **Type:** Time **Occurs:** 1 - 12

Allowable Values:

Select the Transfusion Start Time associated with the Transfusion Start Date of the unit/dose (bag) from the associated blood product ID being abstracted.

HH = Hour (00-23)
MM = Minutes (00-59)
UTD = Unable to Determine

Notes for Abstraction:

Time must be recorded in military time format. With the exception of Midnight and Noon:

- If the time is in the a.m., conversion is not required
- If the time is in the p.m., add 12 to the clock time hour

Examples:
Midnight - 00:00 Noon - 12:00
5:31 am - 05:31 5:31pm - 17:31
11:59 am - 11:59 11:59pm - 23:59

- For times that include “seconds,” remove the seconds and record the time as is. Example: 15:00:35 would be recorded as 15:00
- If more than one Transfusion Start Time is documented, use the earliest time documented.
- The medical record must be abstracted as documented (taken at “face value”). When the time documented is obviously in error (not a valid format/range) and no other documentation is found that provides this information, the abstractor should select “UTD.”
- Example: Documentation indicates the Transfusion Start Time was 3300. Since the Transfusion Start Time is outside of the range in the Allowable Values for “Hour,” it is not a valid time and the abstractor should select “UTD.”

Suggested Data Sources:

- Anesthesia record

- Emergency department record
- Nursing notes
- Operative notes
- Operative report
- Blood administration form

Additional Notes:

Select the Transfusion Start Time associated with the Transfusion Start Date of the unit/dose (bag) from the blood product ID identified for abstraction.

Time must be recorded in military time format.
With the exception of Midnight and Noon:

- If the time is in the a.m., conversion is not required
- If the time is in the p.m., add 12 to the clock time hour.

The medical record must be abstracted as documented (taken at "face value"). When the time documented is obviously in error (not a valid format/range) and no other documentation is found that provides this information, the abstractor should select "UTD."

Example:
Documentation indicates the Transfusion Start Time was 3300. Since the Transfusion Start Time is outside of the range in the Allowable Values for "Hour," it is not a valid time and the abstractor should select "UTD."

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Data Element Name:	*Vital Sign Monitoring*
Collected For:	PBM-05,
Definition:	Documentation of blood pressure (BP), pulse and temperature monitored at specific intervals for the transfusion. The intervals are: • Pre-transfusion, within 15 minutes of the initiation of the transfusion and within one hour of transfusion completion
Suggested Data Collection Question:	Was there documentation of BP and temperature monitored for all of the specified intervals for the transfusion?
Format:	**Length:** 2 **Type:** Numeric **Occurs:** 1 -12
Allowable Values:	**1** There was documentation for all of the BP, pulse and temperature monitoring intervals for the transfusion. **2** There was no documentation for all of the blood pressure, pulse and temperature monitoring intervals for the transfusion or unable to determine from medical record documentation.
Notes for Abstraction:	• All vital signs must be recorded at the following times: pre-transfusion, within 15 minutes of the initiation of the transfusion and within one hour of transfusion completion. To select "1", all recordings must be documented. • The pre-transfusion BP, pulse and temperature must be within one hour of the Transfusion Start Time. Vitals documented at the start of the transfusion are considered “within one hour of transfusion initiation". • For blood that may be transfused within 15 minutes, select "1" if the pre-transfusion and the within one hour of transfusion completion vitals are documented. • Vitals documented at the completion of the transfusion are considered “within one hour of transfusion completion". • The "unit" or "dose" information for the Vital Sign Monitoring data element must be associated with the blood product ID that was selected for abstraction.
Suggested Data Sources:	• Anesthesia record • Consultation notes • Emergency department record • Nursing notes • Progress notes • Operative notes

Additional Notes:

Guidelines for Abstraction:

Inclusion	Exclusion
None	None

Appendix A
ICD-9-CM Diagnosis and Procedure Code Tables

Appendix A
ICD-9-CM Diagnosis and Procedure Code Tables

Table 2.2 Left Ventricular Assistive Device (LVAD) and Heart Transplant		
Code	ICD-9-CM Description	Shortened Description
33.6	Combined heart-lung transplantation	COMB HEART/LUNG TRANSPLA
37.51	Heart transplantation	HEART TRANSPLANTATION
37.52	Implantation of total replacement heart system	IMPLANT TOT REP HRT SYS
37.53	Replacement or repair of thoracic unit of total replacement heart system	REPL/REP THORAC UNIT HRT
37.54	Replacement or repair of other implantable component of total replacement heart system	REPL/REP OTH TOT HRT SYS
37.62	Insertion of non-implantable heart assist system	INS NON-IMPL HRT ASSIST
37.63	Repair of heart assist system	REPAIR HEART ASSIST SYS
37.64	Removal of heart assist system	REMOVE HEART ASSIST SYS
37.65	Implant of external heart assist system	IMP EXT HRT ASSIST SYST
37.66	Insertion of implantable heart assist system	IMPLANTABLE HRT ASSIST
37.68	Insertion of percutaneous external heart assist device	PERCUTAN HRT ASSIST SYST

Table 5.01 Coronary Artery Bypass Graft (CABG)		
Code	ICD-9-CM Description	Shortened Description
36.10	Aortocoronary bypass for heart revascularization, not otherwise specified	AORTOCORONARY BYPASS NOS
36.11	(Aorto)coronary bypass of one coronary artery	(AORTO)COR BYPAS-1 COR ART
36.12	(Aorto)coronary bypass of two coronary arteries	(AORTO)COR BYPAS-2 COR ART
36.13	(Aorto)coronary bypass of three coronary arteries	(AORTO)COR BYPAS-3 COR ART
36.14	(Aorto)coronary bypass of four coronary arteries	(AORT)COR BYPAS-4+ COR ART
36.15	Single internal mammary-coronary artery bypass	1 INT MAM-COR ART BYPASS
36.16	Double internal mammary-coronary artery bypass	2 INT MAM-COR ART BYPASS
36.17	Abdominal-coronary artery bypass	ABD-CORON ARTERY BYPASS
36.19	Other bypass anastomosis for heart revascularization	HRT REVAS BYPS ANAS NEC

Table 5.02 Other Cardiac Surgery		
Code	ICD-9-CM Description	Shortened Description
35.10	Open heart valvuloplasty, without replacement, unspecified valve	OPEN VALVULOPLASTY NOS
35.11	Open heart valvuloplasty of aortic valve without replacement	OPN AORTIC VALVULOPLASTY
35.12	Open heart valvuloplasty of mitral valve without replacement	OPN MITRAL VALVULOPLASTY
35.13	Open heart valvuloplasty of pulmonary valve without replacement	OPN PULMON VALVULOPLASTY
35.14	Open heart valvuloplasty of tricuspid valve without	OPN TRICUS

	replacement	VALVULOPLASTY
35.20	Replacement of unspecified heart valve	REPLACE HEART VALVE NOS
35.21	Replacement of aortic valve with tissue graft	REPLACE AORT VALV-TISSUE
35.22	Other replacement of aortic valve	REPLACE AORTIC VALVE NEC
35.23	Replacement of mitral valve with tissue graft	REPLACE MITR VALV-TISSUE
35.24	Other replacement of mitral valve	REPLACE MITRAL VALVE NEC
35.25	Replacement of pulmonary valve with tissue graft	REPLACE PULM VALV-TISSUE
35.26	Other replacement of pulmonary valve	REPLACE PULMON VALVE NEC
35.27	Replacement of tricuspid valve with tissue graft	REPLACE TRIC VALV-TISSUE
35.28	Other replacement of tricuspid valve	REPLACE TRICUSP VALV NEC
35.31	Operations on papillary muscle	PAPILLARY MUSCLE OPS
35.32	Operations on chordae tendineae	CHORDAE TENDINEAE OPS
35.33	Annuloplasty	ANNULOPLASTY
35.34	Infundibulectomy	INFUNDIBULECTOMY
35.35	Operations on trabeculae carneae cordis	TRABECUL CARNEAE CORD OP
35.39	Operations on other structures adjacent to valves of heart	TISS ADJ TO VALV OPS NEC
35.42	Creation of septal defect in heart	CREATE SEPTAL DEFECT
35.50	Repair of unspecified septal defect of heart with prosthesis	PROSTH REP HRT SEPTA NOS
35.51	Repair of atrial septal defect with prosthesis, open technique	PROS REP ATRIAL DEF-OPN
35.53	Repair of ventricular septal defect with prosthesis, open technique	PROS REP VENTRIC DEF-OPN
35.54	Repair of endocardial defect with prosthesis	PROS REP ENDOCAR CUSHION
35.60	Repair of unspecified septal defect with tissue graft	GRFT REPAIR HRT SEPT NOS
35.61	Repair of atrial septal defect with tissue graft	GRAFT REPAIR ATRIAL DEF
35.62	Repair of ventricular septal defect with tissue graft	GRAFT REPAIR VENTRIC DEF
35.63	Repair of endocardial cushion defect with tissue graft	GRFT REP ENDOCAR CUSHION
35.70	Other and unspecified repair of unspecified septal defect of heart	HEART SEPTA REPAIR NOS
35.72	Other and unspecified repair of ventricular septal defect	VENTR SEPTA DEF REP NEC
35.73	Other and unspecified repair of endocardial cushion defect	ENDOCAR CUSHION REP NEC
35.81	Total repair of tetralogy of Fallot	TOT REPAIR TETRAL FALLOT
35.82	Total repair of total anomalous pulmonary venous connection	TOTAL REPAIR OF TAPVC
35.83	Total repair of truncus arteriosus	TOT REP TRUNCUS ARTERIOS
35.84	Total correction of transposition of great vessels, not elsewhere classified	TOT COR TRANSPOS GRT VES
35.91	Interatrial transposition of venous return	INTERAT VEN RETRN TRANSP

35.92	Creation of conduit between right ventricle and pulmonary artery	CONDUIT RT VENT-PUL ART
35.93	Creation of conduit between left ventricle and aorta	CONDUIT LEFT VENTR-AORTA
35.94	Creation of conduit between atrium and pulmonary artery	CONDUIT ARTIUM-PULM ART
35.98	Other operations on septa of heart	OTHER HEART SEPTA OPS
35.99	Other operations on valves of heart	OTHER HEART VALVE OPS

Table 5.08 Vascular Surgery

Code	ICD-9-CM Description	Shortened Description
38.14	Endarterectomy, aorta	ENDARTERECTOMY OF AORTA
38.16	Endarterectomy, abdominal arteries	ABDOMINAL ENDARTERECTOMY
38.18	Endarterectomy, lower limb arteries	LOWER LIMB ENDARTEREC T
38.34	Resection of vessel with anastomosis, aorta	AORTA RESECTION & ANAST
38.36	Resection of vessel with anastomosis, abdominal arteries	ABD VESSEL RESECT/ANAST
38.37	Resection of vessel with anastomosis, abdominal veins	ABD VEIN RESECT & ANAST
38.44	Resection of vessel with replacement, aorta, abdominal	RESECT ABDM
38.48	Resection of vessel with replacement, lower limb arteries	LEG ARTERY RESEC W REPLA
38.49	Resection of vessel with replacement, lower limb veins	LEG VEIN RESECT W REPLAC
38.64	Other excision of vessels, aorta, abdominal	EXCISION OF AORTA
39.25	Aorta-iliac-femoral bypass	AORTA-ILIAC-FEMOR BYPASS
39.26	Other intra-abdominal vascular shunt or bypass	INTRA-ABDOMIN SHUNT NEC
39.29	Other (peripheral) vascular shunt or bypass	VASC SHUNT & BYPASS NEC

Table 5.11 Cardiac Surgery

Code	ICD-9-CM Description	Shortened Description
35.10	Open heart valvuloplasty without replacement, unspecified valve	OPEN VALVULOPLASTY NOS
35.11	Open heart valvuloplasty of aortic valve without replacement	OPN AORTIC VALVULOPLASTY
35.12	Open heart valvuloplasty of mitral valve without replacement	OPNMITRAL VALVULOPLASTY
35.13	Open heart valvuloplasty of pulmonary valve without replacement	OPN PULMON VALVULOPLASTY
35.14	Open heart valvuloplasty of tricuspid valve without replacement	OPN TRICUS VALVULOPLASTY
35.20	Replacement of unspecified heart valve	REPLACE HEART VALVE NOS
35.21	Replacement of aortic valve with tissue graft	REPLACE AORT VALVE-TISSUE
35.22	Other replacement of aortic valve	REPLACE AORT VALVE NEC

35.23	Replacement of mitral valve with tissue graft	REPLACE MITR VALVE-TISSUE
35.24	Other replacement of mitral valve	REPLACE MITRAL VALVE NEC
35.25	Replacement of pulmonary valve with tissue graft	REPLACE PULM VALV-TISSUE
35.26	Other replacement of pulmonary valve	REPLACE PULMON VALVE NEC
35.27	Replacement of tricuspid valve with tissue graft	REPLACE TRICUSP VALV NEC
35.28	Other replacement of tricuspid valve	REPLACE TRICUSP VALV NEC
35.31	Operations on papillary muscle	PAPILLARY MUSCLE OPS
35.32	Operations on chordae tendineae	CHORDAE TENDINEAE OPS
35.33	Annuloplasty	ANNULOPLASTY
35.34	Infundibulectomy	INFUNDIBULECTOMY
35.35	Operations of trabeculae carneae cordis	TRABECUL CARNEAE CORD OP
35.39	Operations on other structures adjacent to valves of heart	TISS ADJ TO VALV OPS NEC
35.42	Creation of septal defect in heart	CREATE SEPTAL DEFECT
35.50	Repair of unspecified septal defect of heart with prosthesis	PROSTH REP HRT SEPTA NOS
35.51	Repair of atrial septal defect with prosthesis, open technique	PROS REP ATRIAL DEF-OPN
35.53	Repair of ventricular septal defect with prosthesis, open technique	PROS REP VENTRIC DEF-OPN
35.54	Repair of endocardial cushion defect with prosthesis	PROS REP ENDOCAR CUSHION
35.60	Repair of unspecified septal defect of heart with tissue graft	GRFT REPAIR HRT SEPT NOS
35.61	Repair of atrial septal defect with tissue graft	GRAFT REPAIR ATRIAL DEF
35.62	Repair of ventricular septal defect with tissue graft	GRAFT REPAIR VENTRIC DEF
35.63	Repair of endocardial cushion defect with tissue graft	GRFT REP ENDOCAR CUSHION
35.70	Other and unspecified repair of unspecified septal defect of heart	HEART SEPTA REPAIR NOS
35.71	Other and unspecified repair of atrial septal defect	ATRIA SEPTA DEF REP NEC
35.72	Other and unspecified repair of ventricular septal defect	VENTR SEPTA DEF REP NEC
35.73	Other and unspecified repair of endocardial cushion defect	ENDOCAR CUSHION REP NEC
35.81	Total repair of tetralogy of Fallot	TOT REPAIR TETRAL FALLOT
35.82	Total repair of total anomalous pulmonary venous connection	TOTAL REPAIR OF TAPVC
35.83	Total repair of truncus arteriosus	TOT REP TRUNCUS ARTERIOS

Table 5.11 Cardiac Surgery (cont.)		
Code	ICD-9-CM Description	Shortened Description

35.84	Total connection of transposition of great vessels, not elsewhere classified	TOT COR TRANSPOS GRT VES
35.91	Interatrial transposition of venous return	INTERAT VEN RETRN TRANSP
35.92	Creation of conduit between right ventricle and pulmonary artery	CONDUIT RT VENT-PUL ART
35.93	Creation of conduit between left ventricle and aorta	CONDUIT LEFT VENTR-AORTA
35.94	Creation of conduit between atrium and pulmonary artery	CONDUIT ARTIUM-PULM ART
35.98	Other operations on septa of heart	OTHER HEART SEPTA OPS
35.99	Other operations on valves of heart	OTHER HEART VALVE OPS
36.03	Open chest coronary artery angioplasty	OPEN CORONRY ANGIOPLASTY
36.10	Aortocoronary bypass for heart revascularization, not otherwise specified	AORTOCORONARY BYPASS NOS
36.11	Aortocoronary bypass of one coronary artery	AORTOCOR BYPASS-1 COR ART
36.12	Aortocoronary bypass of two coronary arteries	AORTOCOR BYPASS-2 COR ART
36.13	Aortocoronary bypass of three coronary arteries	AORTOCOR BYPASS-3 COR ART
36.14	Aortocoronary bypass of four or more coronary arteries	AORTOCOR BYPASS-4+ COR ART
36.15	Single internal mammary-coronary artery bypass	1 INT MAM-COR ART BYPASS
36.16	Double internal mammary-coronary artery bypass	2 INT MAM-COR ART BYPASS
36.17	Abdominal-coronary artery bypass	ABD-CORON ARTERY BYPASS
36.19	Other bypass anastomosis for heart revascularization	HRT REVAS BYPS ANAS NEC
36.31	Open chest transmyocardial revascularization	OPEN CHEST TRANS REVASC
36.32	Other transmyocardial revascularization	OTH TRANSMYO REVASCULAR
36.39	Other heart revascularization	OTH REVASCULAR
36.91	Repair of aneurysm of coronary vessel	CORON VESS ANEURYSM REP
36.99	Other operations on vessels of heart	HEART VESSEL OP NEC
37.10	Incision of heart, not otherwise specified	INCISION OF HEART NOS
37.11	Cardiotomy	CARDIOTOMY
37.31	Pericardiectomy	PERICARDIECTOMY
37.32	Excision of aneurysm of heart	HEART ANEURYSM EXCISION
37.33	Excision or destruction of other lesion or tissue of heart, open approach	EXC/DEST HRT LESION OPEN
37.35	Partial ventriculectomy	PARTIAL VENTRICULECTOMY
37.41	Implantation of prosthetic cardiac support device around the heart	IMPL CARDIAC SUPPORT DEV
37.49	Other repair of heart and pericardium	HEART/PERICARD REPR NEC
37.51	Heart transplantation	HEART TRANSPLANTATION

37.52	Implantation of total replacement heart system	IMPLANT TOT REP HRT SYS
37.53	Replacement or repair of thoracic unit of total replacement heart system	REPL/REP THORAC UNIT HRT
37.54	Replacement or repair of other implants component of total replacement heart system	REPL/REP OTH TOT HRT SYS
37.62	Insertion of non-implantable heart assist system	INS NON-IMPL HRT ASSIST
37.63	Repair of heart assist system	REPAIR HEART ASSIST SYS
37.64	Removal of heart assist system	REMOVE HEART ASSIST SYS
37.66	Insertion of implantable heart assist system	IMPLANTABLE HRT ASSIST
37.67	Implantation of cardiomyostimulation system	IMP CARDIOMYOSTIMUL SYS

Table 5.22 Elective Hip Replacement

Code	ICD-9-CM Description	Shortened Description
00.70	Revision of hip replacement, both acetabular and femoral components	REV HIP REPL-ACETAB/FEM
00.71	Revision of hip replacement, acetabular component	REV HIP REPL-ACETAB COMP
00.72	Revision of hip replacement, femoral component	REV HIP REPL-FEM COMP
00.73	Revision of hip replacement, acetabular liner and/or femoral head only	REV HIP REPL-LINER/HEAD
00.77	Hip bearing surface, ceramic-on-polyethylene	HIP SURFACE, CERMC/POLY
00.85	Resurfacing hip, total, acetabulum and femoral head	RESRF HIP,TOTAL-ACET/FEM
00.86	Resurfacing hip, partial, femoral head	RESRF HIP,PART-FEM HEAD
00.87	Resurfacing hip, partial, acetabulum	RESRF HIP,PART-ACETABLUM
81.51	Total hip replacement	TOTAL HIP REPLACEMENT
81.52	Partial hip replacement	PARTIAL HIP REPLACEMENT
81.53	Revision of hip replacement	REVISE HIP REPLACEMENT

Table 5.23 Elective Total Knee Replacement

Code	ICD-9-CM Description	Shortened Description
00.80	Revision of knee replacement, total (all components)	REV KNEE REPLACEMT-TOTAL
00.81	Revision of knee replacement, tibial component	REV KNEE REPL-TIBIA COMP
00.82	Revision of knee replacement, femoral component	REV KNEE REPL-FEMUR COMP
00.83	Revision of knee replacement, patellar component	REV KNEE REPLACE-PATELLA
00.84	Revision of total knee replacement, tibial insert (liner)	REV KNEE REPL-TIBIA LIN
81.54	Total knee replacement	TOTAL KNEE REPLACEMENT
81.55	Revision of knee replacement	REVISE KNEE REPLACEMENT

Appendix A
ICD-9-CM Diagnosis and Procedure Code Tables

Table 9.1 Elective Cardiac Surgery (Selected Codes from Table 5.25)		
Code	ICD-9-CM Description	Shortened Description
35.71	Other and unspecified repair of atrial septal defect	ATRIA SEPTA DEF REP NEC
36.03	Open chest coronary artery angioplasty	OPEN CORONRY ANGIOPLASTY
36.31	Open chest transmyocardial revascularization	OPEN CHEST TRANS REVASC
36.32	Other transmyocardial revascularization	OTH TRANSMYO REVASCULAR
36.39	Other heart revascularization	OTH HEART REVASCULAR
36.91	Repair of aneurysm of coronary vessel	CORON VESS ANEURYSM REP
36.99	Other operations on vessels of heart	HEART VESSEL OP NEC
37.10	Incision of heart, not otherwise specified	INCISION OF HEART NOS
37.11	Cardiotomy	CARDIOTOMY
37.32	Excision of aneurysm of heart	HEART ANEURYSM EXCISION
37.33	Excision or destruction of other lesion or tissue of heart, open approach	EXC/DEST HRT LESION OPEN
37.35	Partial ventriculectomy	PARTIAL VENTRICULECTOMY
37.36	Excision or destruction of left atrial appendage (LAA)	EXC LEFT ATRIAL APPENDAG
37.41	Implantation of prosthetic cardiac support device around the heart	IMPL CARDIAC SUPPORT DEV
37.49	Other repair of heart and pericardium	HEART/PERICARD REPR NEC
37.51	Heart transplantation	HEART TRANSPLANTATION
37.52	Implantation of total internal biventricular heart replacement system	IMP TOT INT BI HT RP SYS
37.53	Replacement or repair of thoracic unit of (total) replacement heart system	REPL/REP THR UNT TOT HRT
37.54	Replacement or repair of other implantable component of (total) replacement heart system	REPL/REP OTH TOT HRT SYS
37.55	Removal of internal biventricular heart replacement system	REM INT BIVENT HRT SYS
37.60	Implantation or insertion of biventricular external heart assist system	IMP BIVN EXT HRT AST SYS
37.62	Insertion of temporary non-implantable extracorporeal circulatory assist device	INSRT NON-IMPL CIRC DEV
37.63	Repair of heart assist system	REPAIR HEART ASSIST SYS
37.64	Removal of external heart assist system(s) or device(s)	REMVE EXT HRT ASSIST SYS
37.66	Insertion of implantable heart assist system	IMPLANTABLE HRT ASSIST
37.67	Implantation of cardiomyostimulation system	IMP CARDIOMYOSTIMUL SYS

Table 9.2 Elective Gynecological		
Code	ICD-9-CM Description	Shortened Description
68.31	Other incision and excision of uterus, subtotal abdominal hysterectomy, other incision and excision of uterus, laparoscopic supracervical hysterectomy [LSH]	Lap scervic hysterectomy
68.39	Other incision and excision of uterus, subtotal abdominal hysterectomy, other incision and excision of uterus, other and unspecified subtotal	Subtotl abd hyst NEC/NOS

	abdominal hysterectomy	
68.41	Other incision and excision of uterus, total abdominal hysterectomy, laparoscopic total abdominal hysterectomy	Lap total abdominal hyst
68.49	Other incision and excision of uterus, total abdominal hysterectomy, other and unspecified total abdominal hysterectomy	Total abd hyst NEC/NOS
68.51	Vaginal hysterectomy, laparoscopically assisted vaginal hysterectomy [LAVH]	Lap ast vag hysterectomy
68.59	Vaginal hysterectomy, other and unspecified vaginal hysterectomy	Vag hysterectomy NEC/NOS
68.61	Radical abdominal hysterectomy, laparoscopic radical abdominal hysterectomy	Lap radical abdomnl hyst
68.69	Radical abdominal hysterectomy, other and unspecified radical abdominal hysterectomy	Radical abd hyst NEC/NOS
68.71	Radical vaginal hysterectomy, laparoscopic radical vaginal hysterectomy [LRVH]	Lap radical vaginal hyst
68.79	Radical vaginal hysterectomy, other and unspecified radical vaginal hysterectomy	Radical vag hyst NEC/NOS
68.9	Other and unspecified hysterectomy	Hysterectomy NEC/NOS

Table 9.3 Previously Donated Autologous Transfusion

Code	ICD-9-CM Description	Shortened Description
99.02	Other nonoperative procedures, transfusion of blood and blood components, transfusion of previously collected autologous blood	TRANSFUS PREV AUTO BLOOD

Table 9.4 Packed Red Blood Cell Transfusion

Code	ICD-9-CM Description	Shortened Description
99.04	Other nonoperative procedures, transfusion of blood and blood components, transfusion of packed cells	PACKED CELL TRANSFUSION

Table 9.5 Platelet Transfusion

Code	ICD-9-CM Description	Shortened Description
99.05	Other nonoperative procedures, transfusion of blood and blood components, transfusion of platelets	PLATELET TRANSFUSION

Table 9.6 Plasma Transfusion

Code	ICD-9-CM Description	Shortened Description
99.07	Other nonoperative procedures, transfusion of blood and blood components, transfusion of other serum	SERUM TRANSFUSION NEC

Appendix A
ICD-9-CM Diagnosis and Procedure Code Tables

Table 9.7 Trauma		
Code	ICD-9-CM Description	Shortened Description
800	Fracture of vault of skull	CLOSED SKULL VAULT FX
801	Fracture of base of skull	CLOS SKULL BASE FRACTURE
802	Fracture of face bones	NASAL BONE FX-CLOSED
803	Other and unqualified skull fractures	CLOSE SKULL FRACTURE NEC
804	Multiple fractures involving skull or face with other bones	CL SKUL FX W OTH BONE FX
805	Fracture of vertebral column without mention of spinal cord injury	FX CERVICAL VERT NOS-CL
806	Fracture of vertebral column with spinal cord injury	C1-C4 FX-CL/CORD INJ NOS
807	Fracture of rib(s), sternum, larynx, and trachea	FRACTURE RIB NOS-CLOSED
808	Fracture of pelvis	FRACTURE ACETABULUM-CLOS
809	III-defined fractures of bones of trunk	FRACTURE TRUNK BONE-CLOS
810	Fracture of clavicle	FX CLAVICLE NOS-CLOSED
811	Fracture of scapula	FX SCAPULA NOS-CLOSED
812	Fracture of humerus	FX UP END HUMERUS NOS-CL
813	Fracture of radius and ulna	FX UPPER FOREARM NOS-CL
814	Fracture of carpal bones(s)	FX CARPAL BONE NOS-CLOSE
815	Fracture of metacarpal bones(s)	FX METACARPAL NOS-CLOSED
816	Fracture of one or more phalanges of hands	FX PHALANX, HAND NOS-CL
817	Multiple fractures of hand bones	MULTIPLE FX HAND-CLOSED
818	III-defined fractures of upper limb	FX ARM MULT/NOS-CLOSED
819	Multiple fractures involving both upper limbs, and upper limb with rib(s) and sternum	FX ARMS W RIB/STERNUM-CL
820	Fracture of neck of femur	FX FEMUR INTRCAPS NOS-CL
821	Fracture of other and unspecified parts of femur	FX FEMUR NOS-CLOSED
822	Fracture of patella	FRACTURE PATELLA-CLOSED
823	Fracture of tibia and fibula	FX UPPER END TIBIA-CLOSE
824	Fracture of ankle	FX MEDIAL MALLEOLUS-CLOS
825	Fracture of one or more tarsal and metatarsal bones	FRACTURE CALCANEUS-CLOSE
826	Fracture of one or more phalanges of foot	FX PHALANX, FOOT-CLOSED
827	Other, multiple, and ill-defined fractures of lower limb	FX LOWER LIMB NEC-CLOSED
828	Multiple fractures involving both lower limbs, lower with upper limb, and lower limb(s) with rib(s) and sternum	FX LEGS W ARM/RIB-CLOSED
829	Fracture of unspecified bones	FRACTURE NOS-CLOSED
830	Dislocation of jaw	DISLOCATION JAW-CLOSED
831	Dislocation of shoulder	DISLOC SHOULDER NOS-

		CLOS
832	Dislocation of elbow	DISLOCAT ELBOW NOS-CLOSE
833	Dislocation of wrist	DISLOC WRIST NOS-CLOSED
834	Dislocation of finger	DISL FINGER NOS-CLOSED
835	Dislocation of hip	DISLOCAT HIP NOS-CLOSED
836	Dislocation of knee	TEAR MED MENISC KNEE-CUR
837	Dislocation of ankle	DISLOCATION ANKLE-CLOSED
838	Dislocation of foot	DISLOCAT FOOT NOS-CLOSED
839	Other, multiple, and ill-defined dislocations	DISLOC CERV VERT NOS-CL
840	Sprains and strains of shoulder and upper arm	SPRAIN ACROMIOCLAVICULAR
841	Sprains and strains of elbow and forearm	SPRAIN RADIAL COLLAT LIG
842	Sprains and strains of wrist and hand	SPRAIN OF WRIST NOS
843	Sprains and strains of hip and thigh	SPRAIN ILIOFEMORAL
844	Sprains and strains of knee and leg	SPRAIN LATERAL COLL LIG
845	Sprains and strains of ankle and foot	SPRAIN OF ANKLE NOS
846	Sprains and strains of sacroiliac region	SPRAIN LUMBOSACRAL
847	Sprains and strains of other and unspecified parts of back	SPRAIN OF NECK
848	Other and ill-defined sprains and strains	SPRAIN OF NASAL SEPTUM
850	Concussion	CONCUSSION W/O COMA
851	Cerebral laceration and contusion	CEREBRAL CORTX CONTUSION
852	Subarachnoid, subdural, and extradural hemorrhage, following injury	TRAUM SUBARACHNOID HEM
853	Other and unspecified intracranial hemorrhage following injury	TRAUMATIC BRAIN HEM NEC
854	Intracranial injury of other and unspecified nature	BRAIN INJURY NEC
860	Traumatic pneumothorax and hemothorax	TRAUM PNEUMOTHORAX-CLOSE
861	Injury to heart and lung	HEART INJURY NOS-CLOSED
862	Injury to other and unspecified intrathoracic organs	DIAPHRAGM INJURY-CLOSED
863	Injury to gastrointestinal tract	STOMACH INJURY-CLOSED
864	Injury to liver	LIVER INJURY NOS-CLOSED
865	Injury to spleen	SPLEEN INJURY NOS-CLOSED
866	Injury to kidney	KIDNEY INJURY NOS-CLOSED
867	Injury to pelvic organs	BLADDER/URETHRA INJ-CLOS
868	Injury to other intra-abdominal organs	INTRA-ABDOM INJ NOS-CLOS
869	Internal injury to unspecified or ill-defined organs	INTERNAL INJ NOS-CLOSED
870	Open wound of ocular adnexa	LAC EYELID SKN/PERIOCULR
871	Open wound of eyeball	OCULAR LAC W/O PROLAPSE
872	Open wound of ear	OPN WOUND EXTERN EAR

		NOS
873	Other open wound of head	OPEN WOUND OF SCALP
874	Open wound of neck	OPN WND LARYNX W TRACHEA
875	Open wound of chest (wall)	OPEN WOUND OF CHEST
876	Open wound of back	OPEN WOUND OF BACK
877	Open wound of buttock	OPEN WOUND OF BUTTOCK
878	Open wound of genital organs (external), including traumatic amputation	OPEN WOUND OF PENIS
879	Open wound of other and unspecified sites, except limbs	OPEN WOUND OF BREAST
880	Open wound of shoulder and upper arm	OPEN WOUND OF SHOULDER
881	Open would of elbow, forearm, and wrist	OPEN WOUND OF FOREARM
882	Open wound of hand except finger(s) alone	OPEN WOUND OF HAND
883	Open wound of finger(s)	OPEN WOUND OF FINGER
884	Multiple and unspecified open wound of upper limb	OPEN WOUND ARM MULT/NOS
885	Traumatic amputation of thumb (complete) (partial)	AMPUTATION THUMB
886	Traumatic amputation of other finger(s) (complete) (partial)	AMPUTATION FINGER
887	Traumatic amputation of arm and hand (complete) (partial)	AMPUT BELOW ELB, UNILAT
890	Open wound of hip and thigh	OPEN WOUND OF HIP/THIGH
891	Open wound of knee, leg [except thigh], and ankle	OPEN WND KNEE/LEG/ANKLE
892	Open wound of foot except toe(s) alone	OPEN WOUND OF FOOT
893	Open wound of toe(s)	OPEN WOUND OF TOE
894	Multiple and unspecified open wound of lower limb	OPEN WOUND OF LEG NEC
895	Traumatic amputation of toe(s) (complete) (partial)	AMPUTATION TOE
896	Traumatic amputation of foot (complete) (partial)	AMPUTATION FOOT, UNILAT
897	Traumatic amputation of leg(s) (complete) (partial)	AMPUT BELOW KNEE, UNILAT
900	Injury to blood vessels of head and neck	INJUR CAROTID ARTERY NOS
901	Injury to blood vessels of thorax	INJURY THORACIC AORTA
902	Injury to blood vessels of abdomen and pelvis	INJURY ABDOMINAL AORTA
903	Injury to blood vessels of upper extremity	INJ AXILLARY VESSEL NOS
904	Injury to blood vessels of lower extremity and unspecified sites	INJ COMMON FEMORAL ARTER
905	Late effects of musculoskeletal and connective tissue injuries	LATE EFFEC SKULL/FACE FX
906	Late effects of injuries to skin and subcutaneous tissues	LT EFF OPN WND HEAD/TRNK
907	Late effects of injuries to the nervous system	LT EFF INTRACRANIAL INJ
908	Late effects of other and unspecified injuries	LATE EFF INT INJUR CHEST
909	Late effects of other and unspecified external causes	LATE EFF DRUG POISONING
910	Superficial injury of face, neck, and scalp except eye	ABRASION HEAD
911	Superficial injury of trunk	ABRASION TRUNK
912	Superficial injury of shoulder and upper arm	ABRASION SHOULDER/ARM

913	Superficial injury of elbow, forearm, and wrist	ABRASION FOREARM
914	Superficial injury of hand(s) except finger(s) alone	ABRASION HAND
915	Superficial injury of finger(s)	ABRASION FINGER
916	Superficial injury of hip, thigh, leg, and ankle	ABRASION HIP & LEG
917	Superficial injury of foot and toe(s)	ABRASION FOOT & TOE
918	Superficial injury of eye and adnexa	SUPERFIC INJ PERIOCULAR
919	Superficial injury of other, multiple, and unspecified sites	ABRASION NEC
920	Contusion of face, scalp, and neck except eye(s)	CONTUSION FACE/SCALP/NCK
921	Contusion of eye and adnexa	BLACK EYE NOS
922	Contusion of trunk	CONTUSION OF BREAST
923	Contusion of upper limb	CONTUSION SHOULDER REG
924	Contusion of lower limb and of other and unspecified sites	CONTUSION OF THIGH
925	Crushing injury of face, scalp, and neck	
926	Crushing injury of trunk	CRUSH INJ EXT GENITALIA
927	Crushing injury of upper limb	CRUSH INJ SHOULDER REG
928	Crushing injury of lower limb	CRUSHING INJURY THIGH
929	Crushing injury of multiple and unspecified sites	CRUSH INJ MULT SITE NEC
930	Foreign body on external eye	CORNEAL FOREIGN BODY
931	Foreign body in ear	FOREIGN BODY IN EAR
932	Foreign body in nose	FOREIGN BODY IN NOSE
933	Foreign body in pharynx and larynx	FOREIGN BODY IN PHARYNX
934	Foreign body in trachea, bronchus, and lung	FOREIGN BODY IN TRACHEA
935	Foreign body in mouth, esophagus, and stomach	FOREIGN BODY IN MOUTH
936	Foreign body in intestine and colon	FB IN INTESTINE & COLON
937	Foreign body in anus and rectum	FOREIGN BODY ANUS/RECTUM
938	Foreign body in digestive system, unspecified	FOREIGN BODY GI NOS
939	Foreign body in genitourinary tract	FB BLADDER & URETHRA
940	Burn confined to eye and adnexa	CHEMICAL BURN PERIOCULAR
941	Burn of face, head, and neck	BURN NOS HEAD-UNSPEC
942	Burn of trunk	BURN NOS TRUNK-UNSPEC
943	Burn of upper limb, except wrist and hand	BURN NOS ARM-UNSPEC
944	Burn of wrist(s) and hand(s)	BURN NOS HAND-UNSPEC
945	Burn of lower limb(s)	BURN NOS LEG-UNSPEC
946	Burns of multiple specified sites	BURN NOS MULTIPLE SITE
947	Burn of internal organs	BURN OF MOUTH & PHARYNX
948	Burns classified according to extent of body surface involved	BDY BRN < 10%/3D DEG NOS
949	Burn, unspecified	BURN NOS
950	Injury to optic nerve and pathways	OPTIC NERVE INJURY
951	Injury to other cranial nerve(s)	INJURY OCULOMOTOR NERVE
952	Spinal cord injury without evidence of spinal bone injury	C1-C4 SPIN CORD INJ NOS

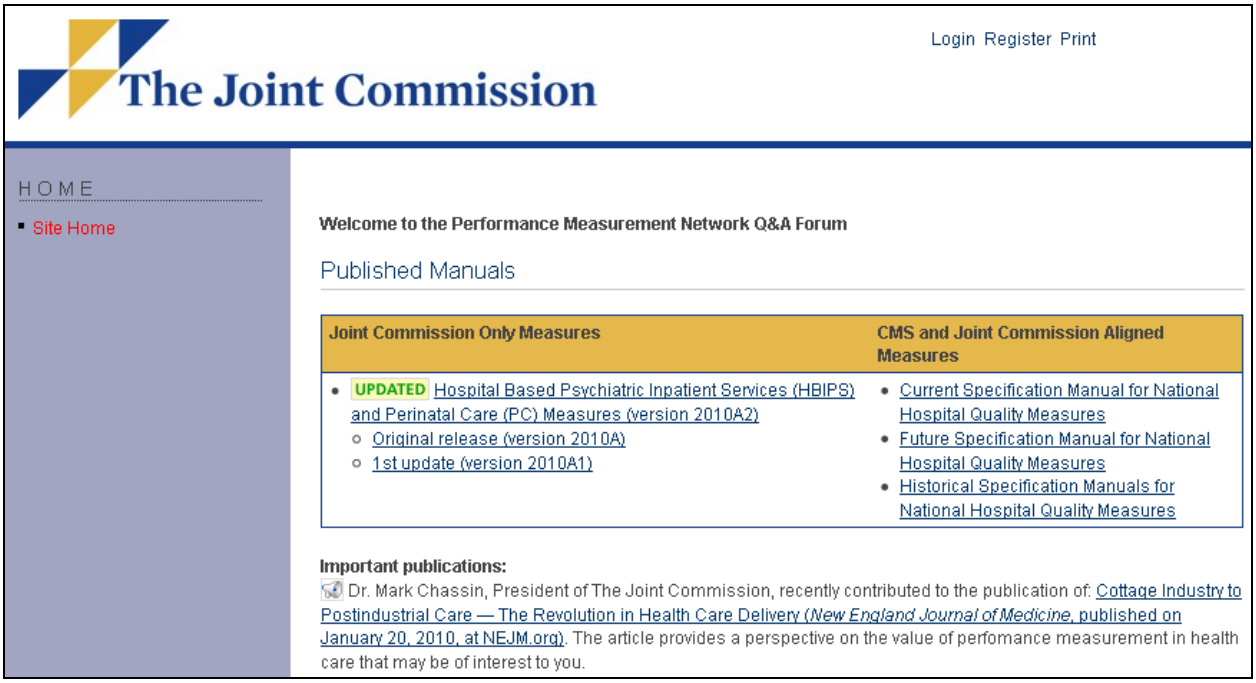
953	Injury to nerve roots and spinal plexus	CERVICAL ROOT INJURY
954	Injury to other nerve(s) of trunk, excluding shoulder and pelvic girdles	INJ CERV SYMPATH NERVE
955	Injury to peripheral nerve(s) of shoulder girdle and upper limb	INJURY AXILLARY NERVE
956	Injury to peripheral nerve(s), of pelvic girdle and lower limb	INJURY SCIATIC NERVE
957	Injury to other and unspecified nerves	INJ SUPERF NERV HEAD/NCK
958	Certain early complications of trauma	AIR EMBOLISM
959	Injury, other and unspecified	
960	Poisoning by antibiotics	POISONING-PENICILLINS
961	Poisoning by other anti-infectives	POISONING-SULFONAMIDES
962	Poisoning by hormones and synthetic substitutes	POIS-CORTICOSTEROIDS
963	Poisoning by primarily systemic agents	POIS-ANTIALLRG/ANTIEMET
964	Poisoning by agents primarily affecting blood constituents	POISONING-IRON/COMPOUNDS
965	Poisoning by analgesics, antipyretics, and antirheumatics	POISONING-OPIUM NOS
966	Poisoning by anticonvulsants and anti-Parkinsonism drugs	POISON-OXAZOLIDINE DERIV
967	Poisoning by sedatives and hypnotics	POISONING-BARBITURATES
968	Poisoning by other central nervous system depressants and anesthetics	POIS-CNS MUSCLE DEPRESS
969	Poisoning by psychotropic agents	POISON-ANTIDEPRESNT NOS
970	Poisoning by central nervous system stimulants	POISONING-ANALEPTICS
971	Poisoning by drugs primarily affecting the autonomic nervous system	POIS-PARASYMPATHOMIMETIC
972	Poisoning by agents primarily affecting the cardiovascular system	POIS-CARD RHYTHM REGULAT
973	Poisoning by agents primarily affecting the gastrointestinal system	POIS-ANTACID/ANTIGASTRIC
974	Poisoning by water, mineral, and uric acid metabolism drugs	POIS-MERCURIAL DIURETICS
975	Poisoning by agents primarily acting on the smooth and skeletal muscles and respiratory system	POISONING-OXYTOCIC AGENT
976	Poisoning by agents primarily affecting skin and mucous membrane, ophthalmological, otorhinolaryngological, and dental drugs	POIS-LOCAL ANTI-INFECT
977	Poisoning by other and unspecified drugs and medicinal substances	POISONING-DIETETICS
978	Poisoning by bacterial vaccines	POISONING-BCG VACCINE
979	Poisoning by other vaccines and biological substances	POISON-SMALLPOX VACCINE
980	Toxic effect of alcohol	TOXIC EFF ETHYL ALCOHOL
981	Toxic effect of petroleum products	TOXIC EFF PETROLEUM PROD
982	Toxic effect of solvents other than petroleum-based	TOXIC EFFECT BENZENE
983	Toxic effect of corrosive aromatics, acids, and caustic alkalis	TOX EFF CORROSIVE AROMAT

984	Toxic effect of lead and its compounds (including fumes)	TX EFF INORG LEAD COMPND
985	Toxic effect of other metals	TOXIC EFFECT MERCURY
986	Toxic effect of carbon monoxide	TOX EFF CARBON MONOXIDE
987	Toxic effect of other gases, fumes, or vapors	TOXIC EFF LIQ PETROL GAS
988	Toxic effect of noxious substances eaten as food	TOXIC EFF FISH/SHELLFISH
989	Toxic effect of other substances, chiefly nonmedicinal as to source	TOXIC EFFECT CYANIDES
990	Effects of radiation, unspecified	EFFECTS RADIATION NOS
991	Effects of reduced temperature	FROSTBITE OF FACE
992	Effects of heat and light	HEAT STROKE & SUNSTROKE
993	Effects of air pressure	BAROTRAUMA, OTITIC
994	Effects of other external causes	EFFECTS OF LIGHTNING
995	Certain adverse effects not elsewhere classified	ANAPHYLACTIC SHOCK
996	Complications peculiar to certain specified procedures	MALFUNC CARD DEV/GRF NOS
997	Complications affecting specified body systems, not elsewhere classified	NERVOUS SYST COMPLC NOS
998	Other complications of procedures, not elsewhere classified	POSTOPERATIVE SHOCK
999	Complications of medical care, not elsewhere classified	GENERALIZED VACCINIA

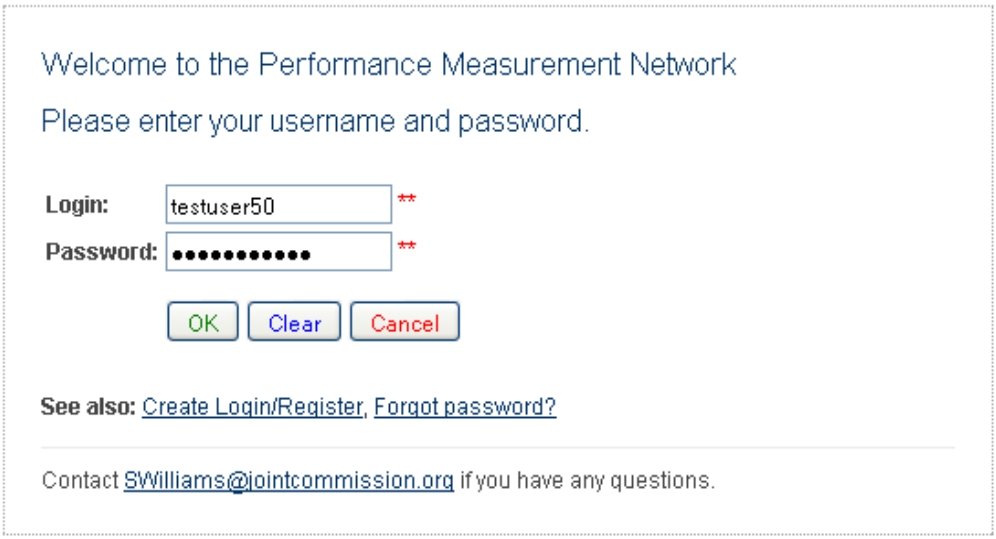
Navigating the Blood Management Project
Data Collection Tool

How to Log In and Get Started

1) Once you have registered and received your confirmation to submit data for the Blood Management Project, you may access the project website at: http://manual.jointcommission.org
2) Click on "Login" in the upper right hand corner.



3) Enter your Login and Password and click "ok".



Navigating the Blood Management Project
Data Collection Tool

4) Welcome to the Performance Measurement Network. Select the "Blood Mgmt Project" link from the left hand navigation bar.

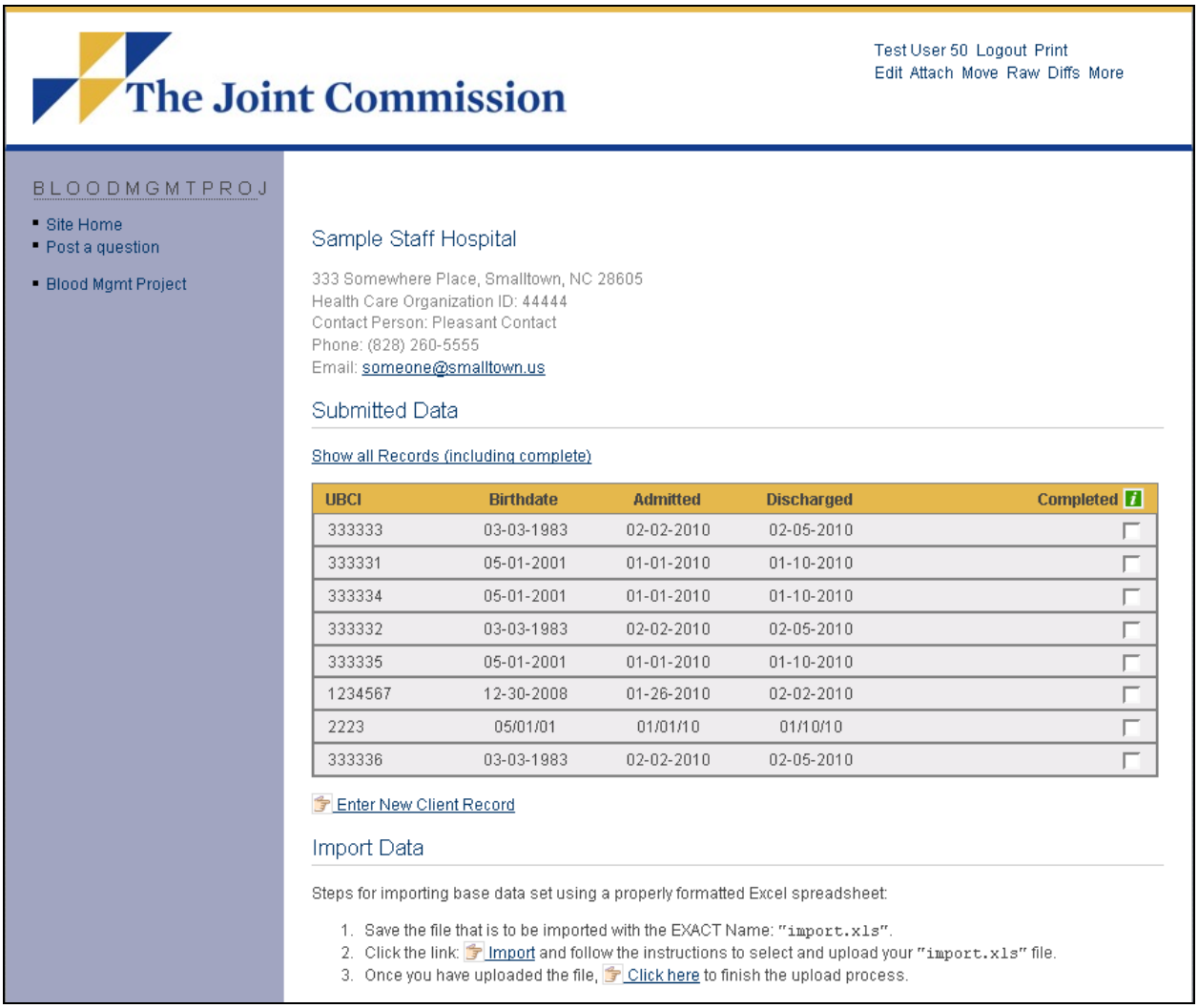
5) You are now on the Blood Management Project Page. You will see your hospitals(s) listed here. In the Project Help section, you will find a link to the measure specifications, an example of the import file template, and other material intended to assist you with your participation in this project. Please click on the hospital name to enter blood management data.

Navigating the Blood Management Project
Data Collection Tool

6) You are now on your hospital page. From this page, you can:

- update your hospital demographic information
- enter new records
- import new records
- view and update existing records
- add RBC, Plasma and Platelet events
- mark records as "complete"
- review records that have been completed
- view import attachments

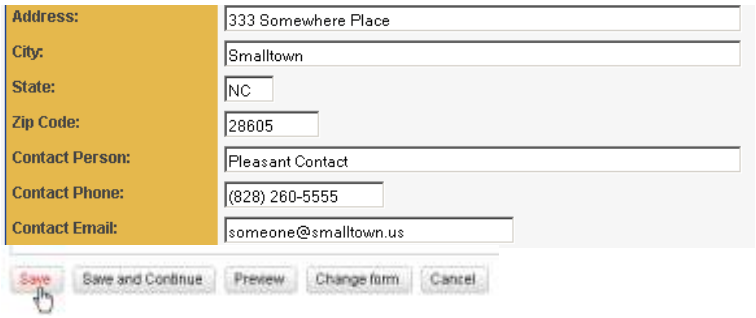
Each function will be discussed in detail below.



Navigating the Blood Management Project
Data Collection Tool
Updating your Hospital Demographic Information

a) To update your hospital's demographic information, click the "Edit" link, Fill out the form that appears, and click the "Save" button at the bottom of the form.

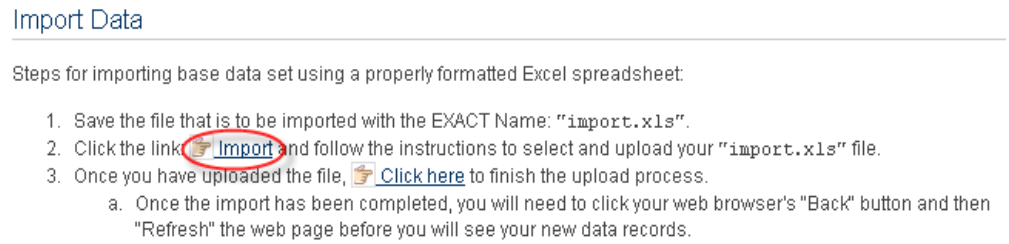
You will be directed to the Edit form, and you can change your hospital's contact details here. Click "Save" to save your changes, or "Cancel" to exit without saving.



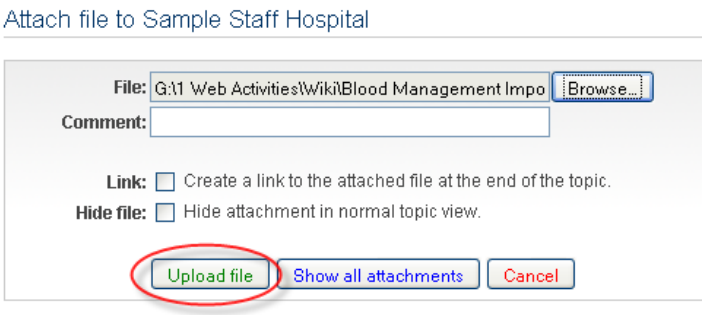
Navigating the Blood Management Project
Data Collection Tool

Importing Records

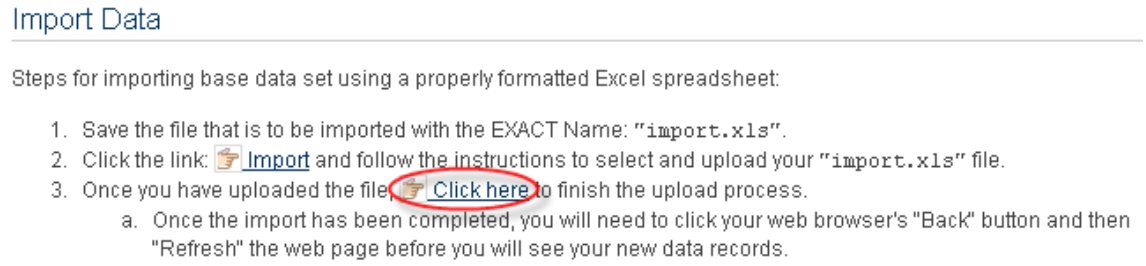
a) To import data, click on the "Import" link on your hospital home page. The template for this import file can be found on the project home page.



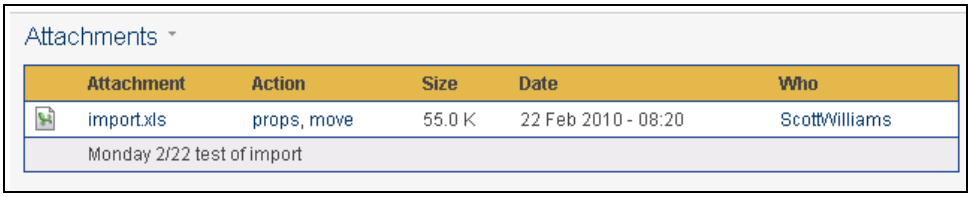
b) Click on "browse" to find and select your import file (which must be named "import.xls"), and click on "Upload File". You do not need to check the checkboxes, but you may want to add a comment to keep track of your imports (e.g., April 2010 discharges; 51 records)



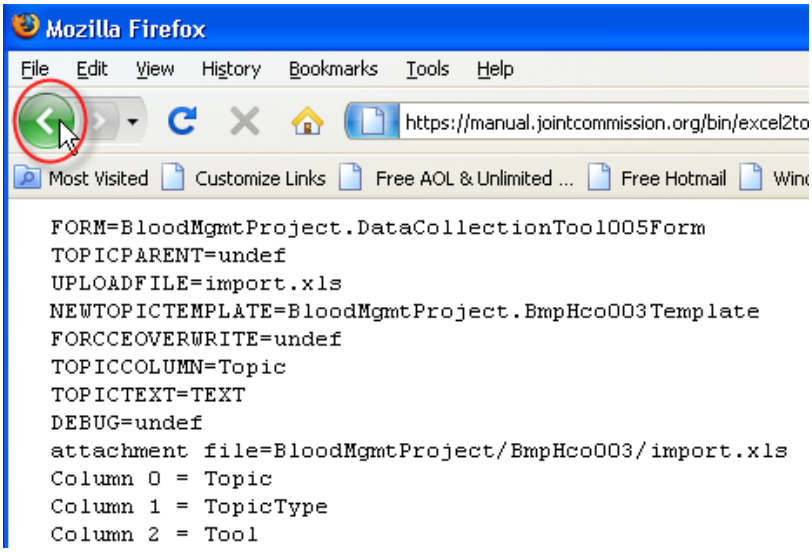
c) Once you have uploaded your file, you will need to click on the "Click here" link to finish the upload process. You'll then need to click your browser's "Back" button and "Refresh" your hospital page.



d) You may notice a form at the bottom of your hospital page. It displays the most recently imported file. This area will only be used to verify that your import was successful (note the date, time and comments to ensure that it represents the file you imported.



e) Your uploaded records are shown here (in a rather unappealing format!) and you will need to click on your browser's "Back" button to return to your hospital home page.



f) You are now back on your hospital's home page. Please click on your browser's "Refresh" button to view the records you just imported. Your records have been imported, but you will not be able to see them until the page is refreshed (or you navigate away from it and then back to it).

g) Your uploaded files should now viewable in the "Submitted Data" section of your hospital home page.

Navigating the Blood Management Project
Data Collection Tool

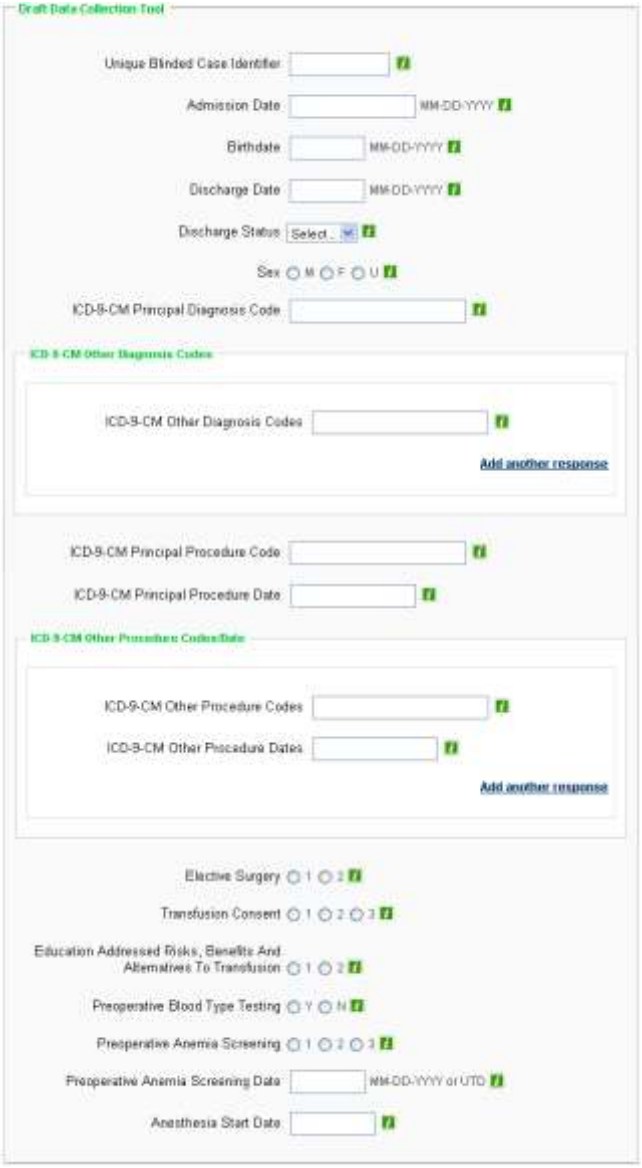
Show all Records (including complete)

UBCI	Birthdate	Admitted	Discharged	Completed
333333	03-03-1983	02-02-2010	02-05-2010	☐
333331	05-01-2001	01-01-2010	01-10-2010	☐
555555	04-04-1974	07-04-2009	07-07-2009	☐
333332	03-03-1983	02-02-2010	02-05-2010	☐
333335	05-01-2001	01-01-2010	01-10-2010	☐
1234567	12-30-2008	01-26-2010	02-02-2010	☐
2223	05/01/01	01/01/10	01/10/10	☐
333336	03-03-1983	02-02-2010	02-05-2010	☐
555556	12-09-1970	08-08-2009	08-12-2009	☐

Navigating the Blood Management Project
Data Collection Tool
Enter New Records (without using the file import

a) To enter a new record, click on the "Enter New Client Record" link (right below the data record table).

b) You are now viewing the data collection tool for Blood Management. Enter data for the client record. Note: hovering over the green "i" next to a data element will show you the question and allowable values associated with that data element as well as a link to the data element page.



c) Once you have completed data entry for this record, click on "Save Data Record".

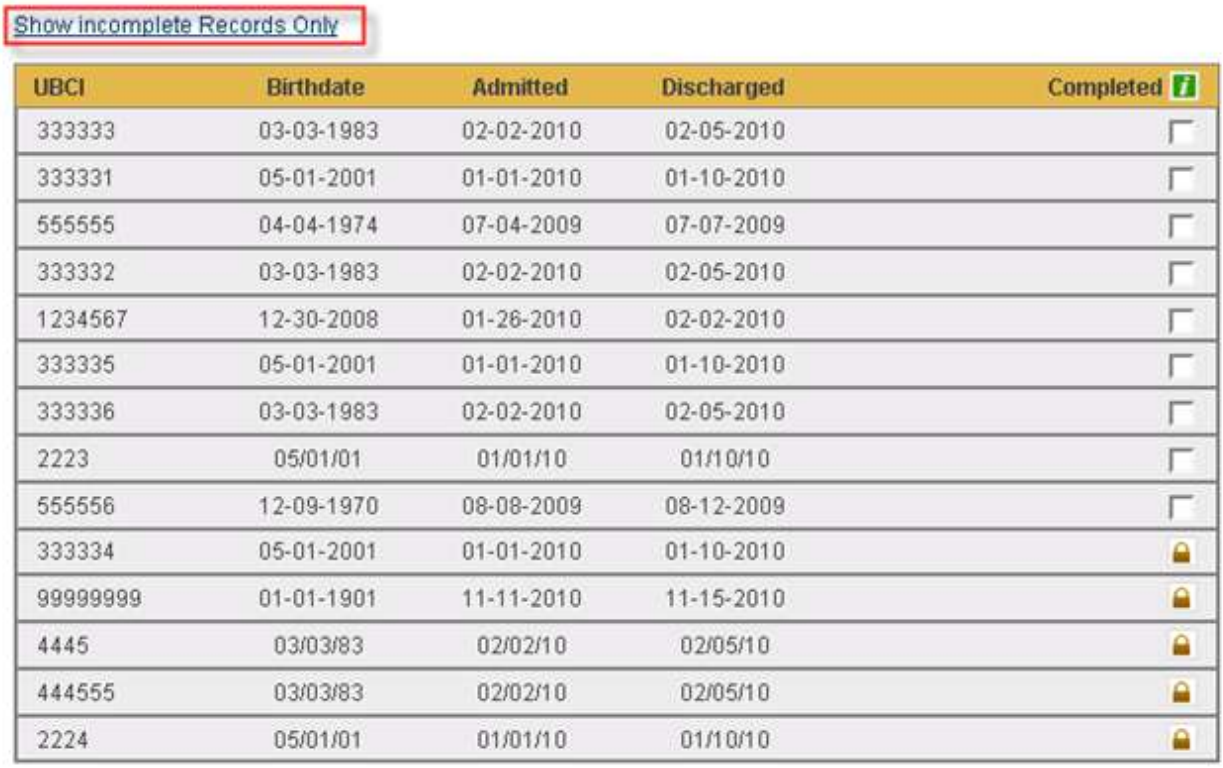
Navigating the Blood Management Project
Data Collection Tool
To View and Update Existing Records

a) There are two ways to view the list of submitted records. The default view is of all incomplete records. If you would like to view all records, including completed (locked) records, click the link "Show all Records (including complete)".

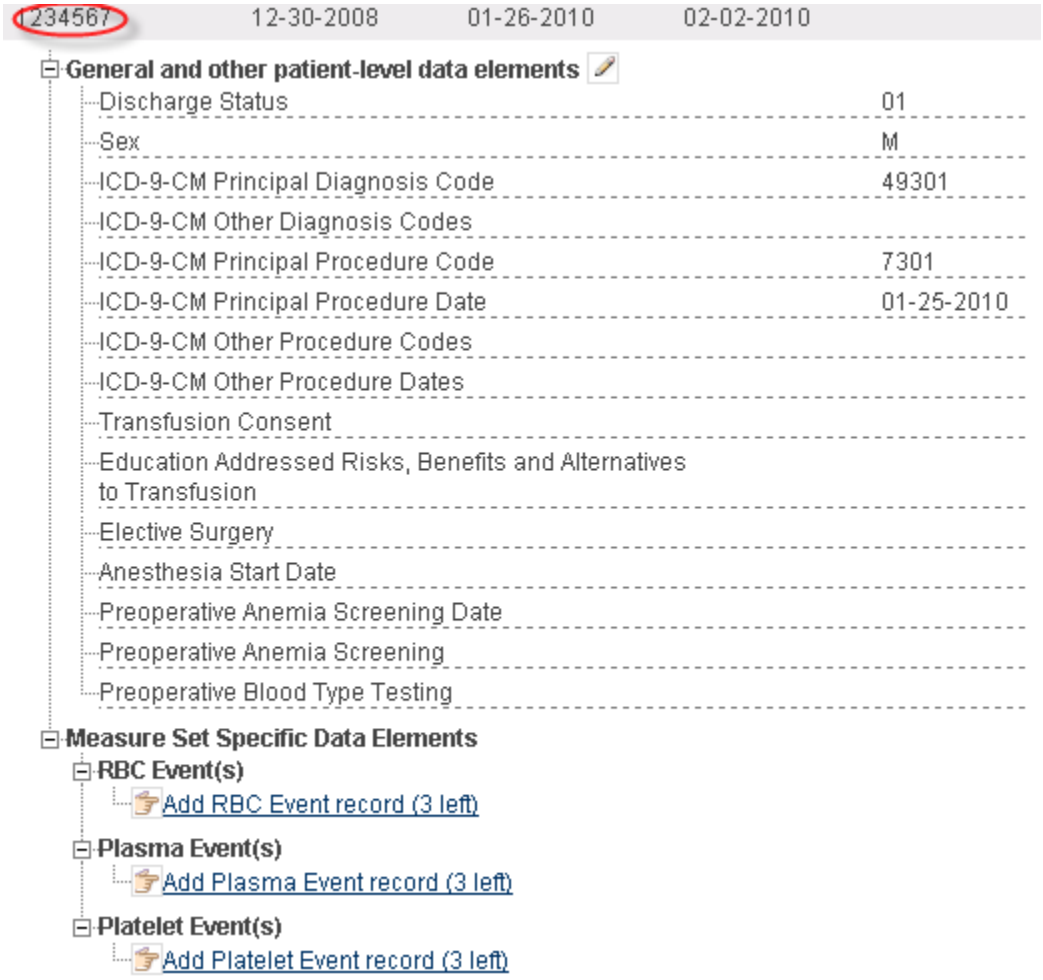
View of the default setting showing a list of only incomplete records:

UBCI	Birthdate	Admitted	Discharged	Completed
333333	03-03-1983	02-02-2010	02-05-2010	☐
333331	05-01-2001	01-01-2010	01-10-2010	☐
555555	04-04-1974	07-04-2009	07-07-2009	☐
333332	03-03-1983	02-02-2010	02-05-2010	☐
333335	05-01-2001	01-01-2010	01-10-2010	☐
1234567	12-30-2008	01-26-2010	02-02-2010	☐
2223	05/01/01	01/01/10	01/10/10	☐
333336	03-03-1983	02-02-2010	02-05-2010	☐
555556	12-09-1970	08-08-2009	08-12-2009	☐

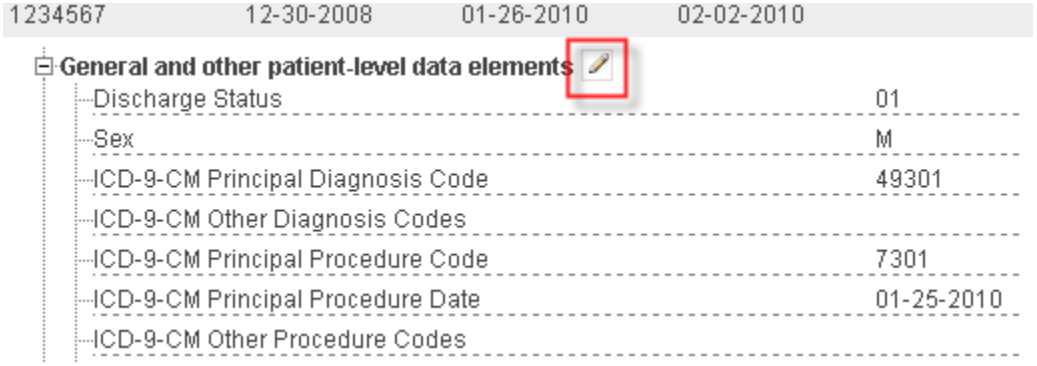
View of alternate setting showing list of all records (both incomplete and complete). To return the default setting, click the link "Show Incomplete Records Only"



b) To view or update data in an existing record, click on the UBCI number. This will create a drop down that includes all of the information for that client record. You can contract the drop down by clicking on the "-"or expand by clicking on the "+" before the different sections.

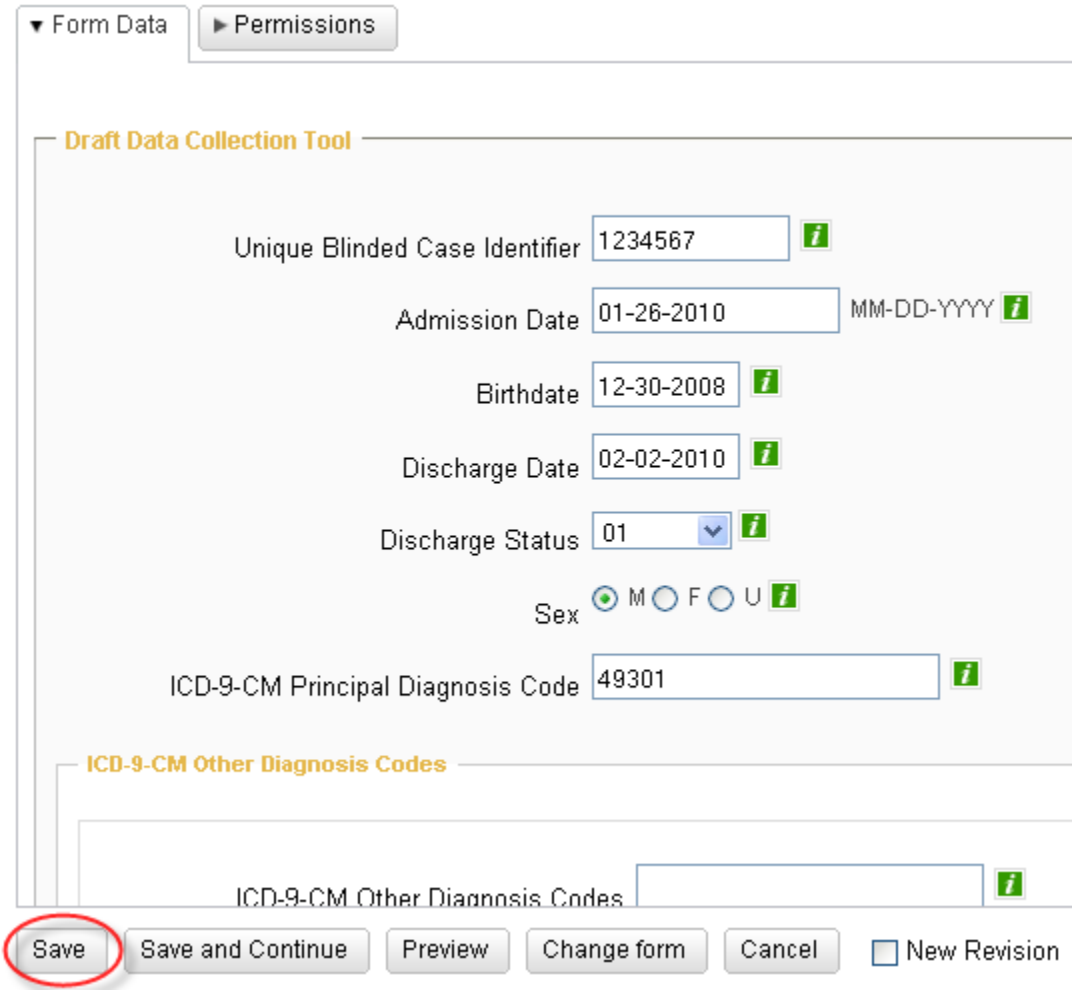


c) To edit the "General and other patient-level data elements", click on the pencil icon.



d) Make changes to the "General and other patient-level data elements" and click "Save" when you are done.

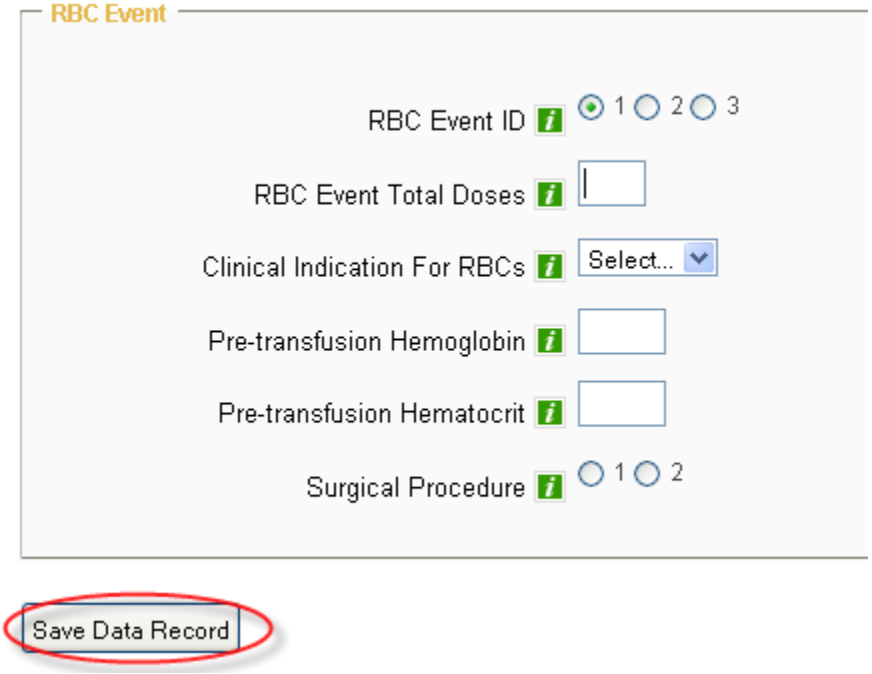
Navigating the Blood Management Project
Data Collection Tool



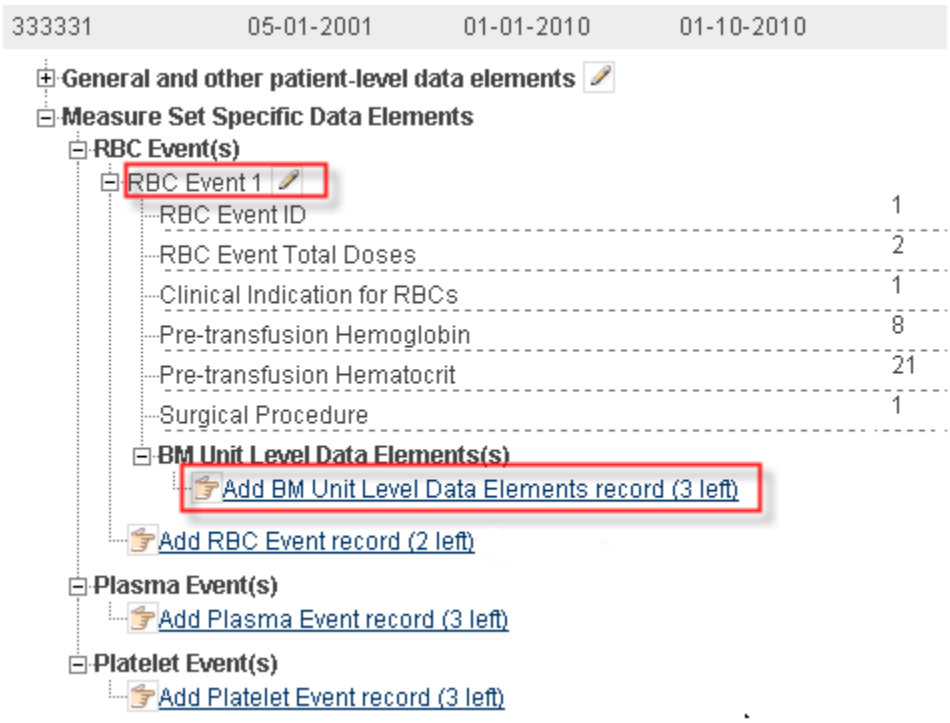
Navigating the Blood Management Project
Data Collection Tool
Add RBC Events and BM Unit Level Data Elements

a) To add a RBC event (NOTE: you can add up to three RBC events), click on the "Add RBC Event Record" Link.

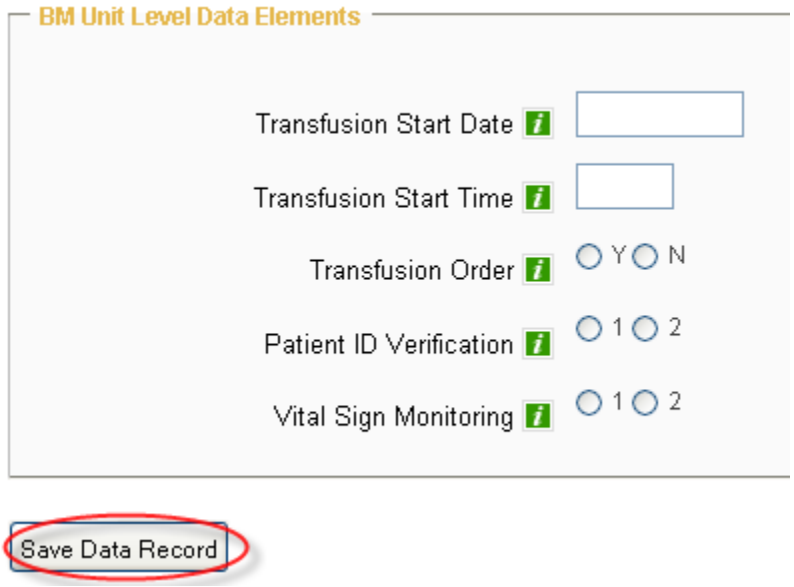
b) Enter data for RBC Event 1 and click "Save Data Record"



c) Data for "RBC Event 1" is now included with this client record. To edit the RBC Event data that you just entered, click on the pencil icon next to the event. To add unit level data for RBC Event 1, click on the "Add BM Unit Level Data Elements Record" link. (NOTE: you can add up to three BM Unit Level Records)

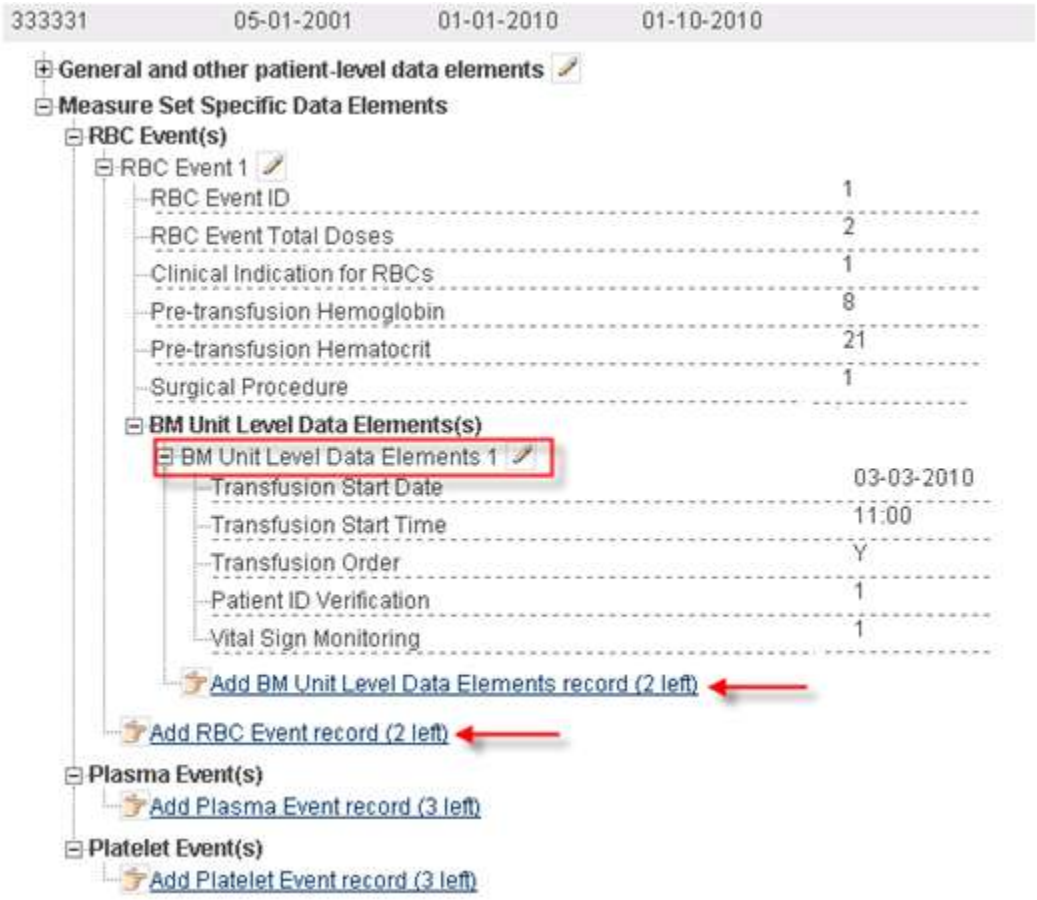


d) Enter data for the BM Unit Level Record for RBC Event 1 and click "Save Data Record"



e) Data for "BM Unit 1" for "RBC Event 1" is now included with this client record. To edit the BM unit data that you just entered, click on the pencil icon. To add another BM Unit for RBC Event 1, click on "Add BM Unit Level Data Elements Record" link. To add another RBC Event, click on "Add RBC Event Record".

Navigating the Blood Management Project Data Collection Tool

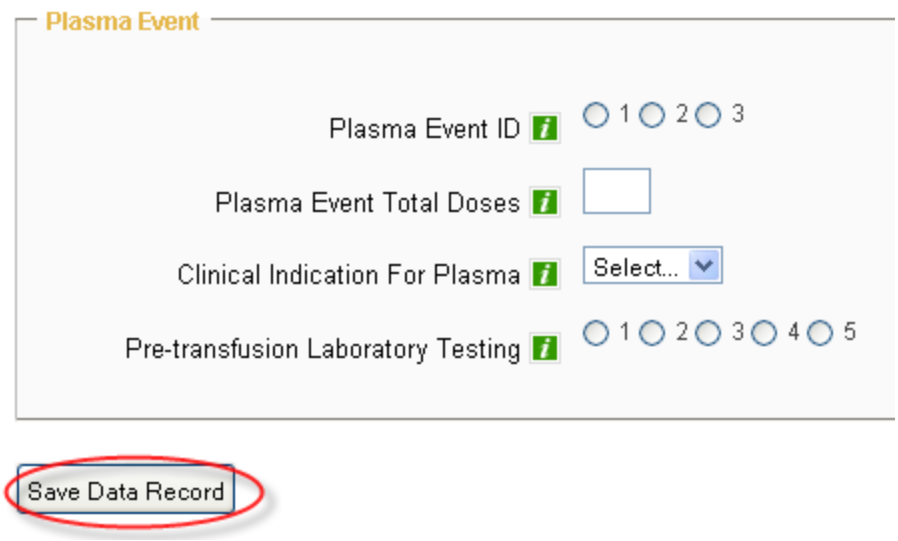


Navigating the Blood Management Project Data Collection Tool

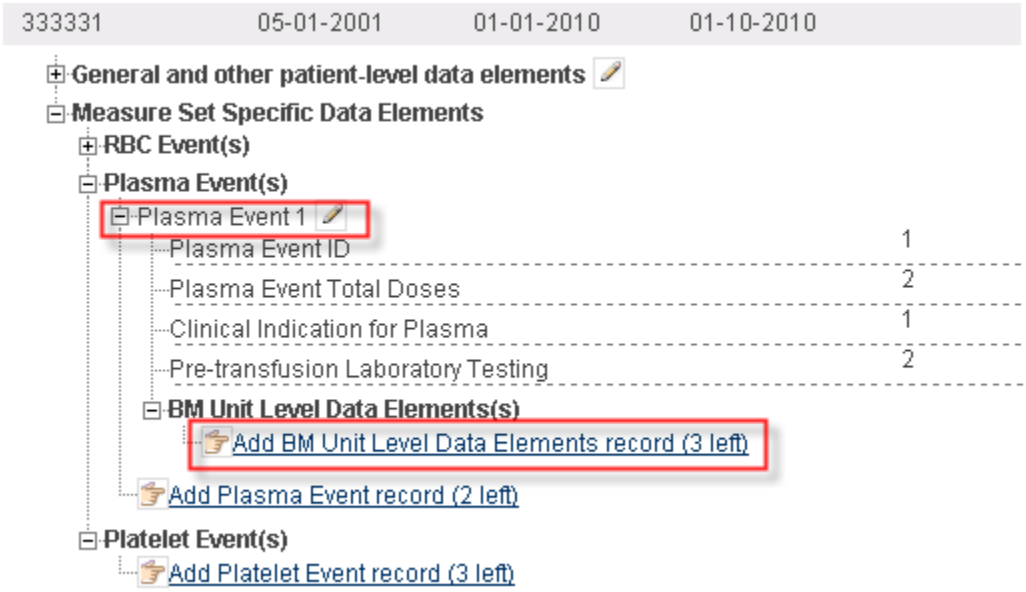
Add Plasma Events and BM Unit Level Data Elements

a) To add a Plasma event, click on the "Add Plasma Event Record" Link

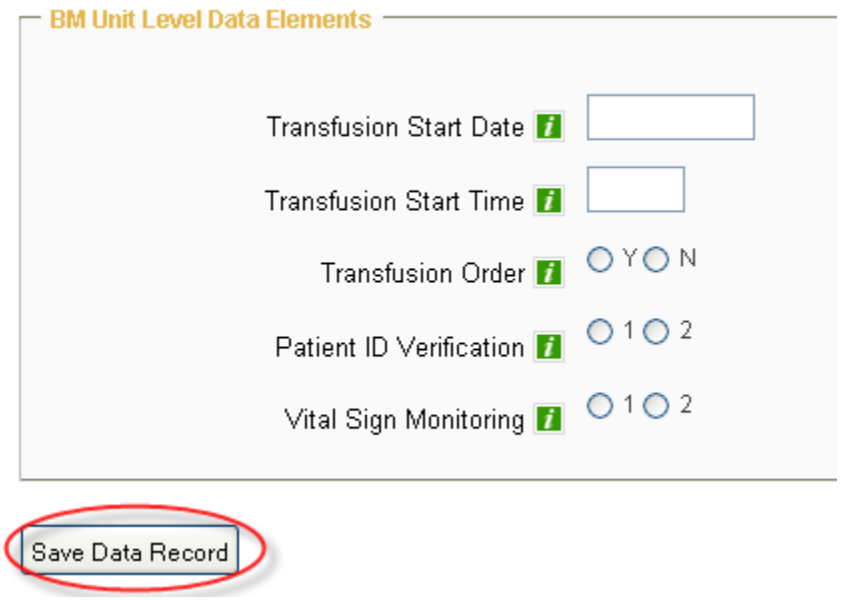
b) Enter data for Plasma Event 1 and click "Save Data Record"



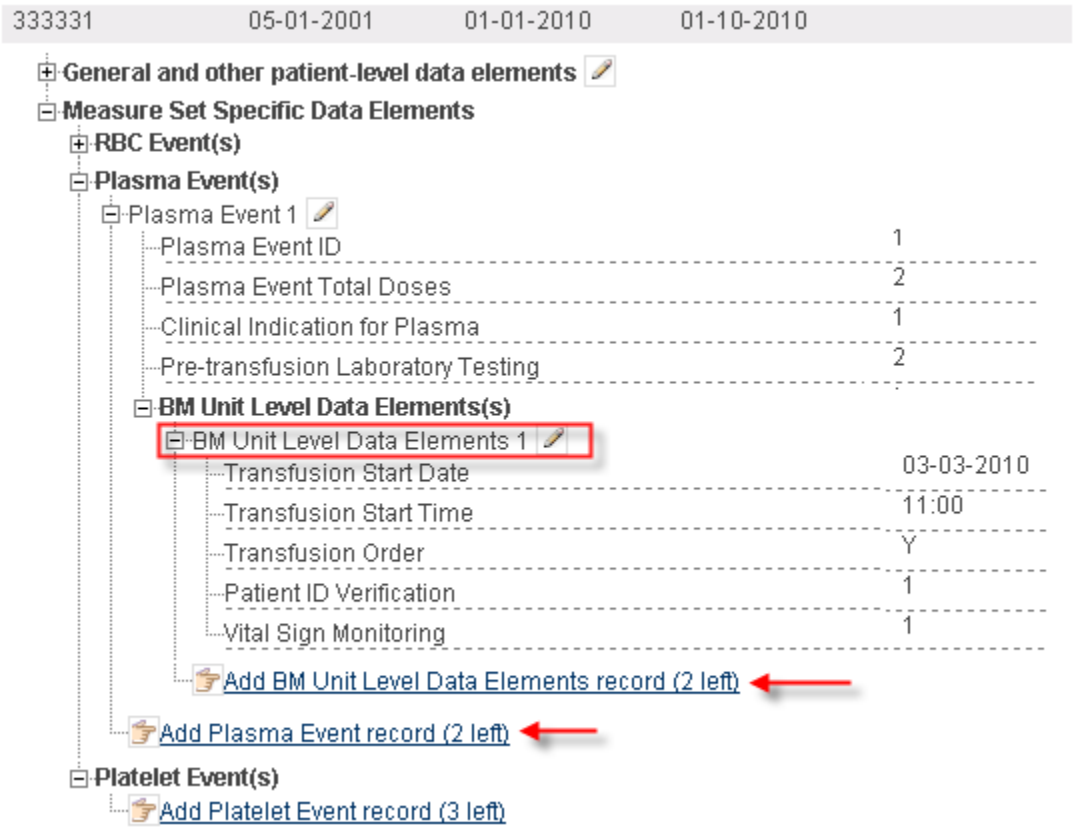
c) Data for "Plasma Event 1" is now included with this client record. To edit the Plasma Event data that you just entered, click on the pencil icon next to the event. To add unit level data for Plasma Event 1, click on the "Add BM Unit Level Data Elements Record" link. (NOTE: you can add up to three BM Unit Level Records)



d) Enter data for the BM Unit Level Record for Plasma Event 1 and click "Save Data Record"



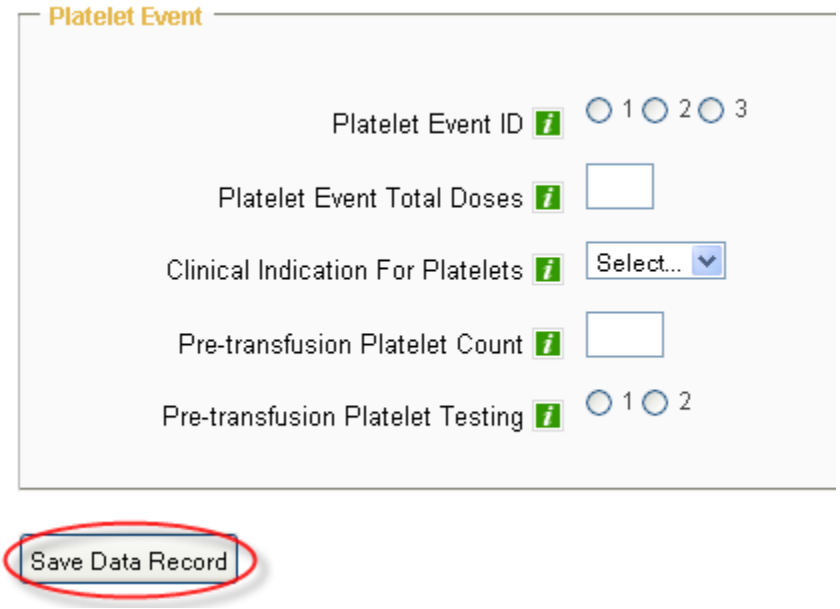
e) Data for "BM Unit Level 1" for "Plasma Event 1" is now included with this client record. To edit the BM unit data that you just entered, click on the pencil icon. To add another BM Unit for Plasma Event 1, click on "Add BM Unit Level Data Elements Record" link. To add another Plasma Event, click on "Add Plasma Event Record".



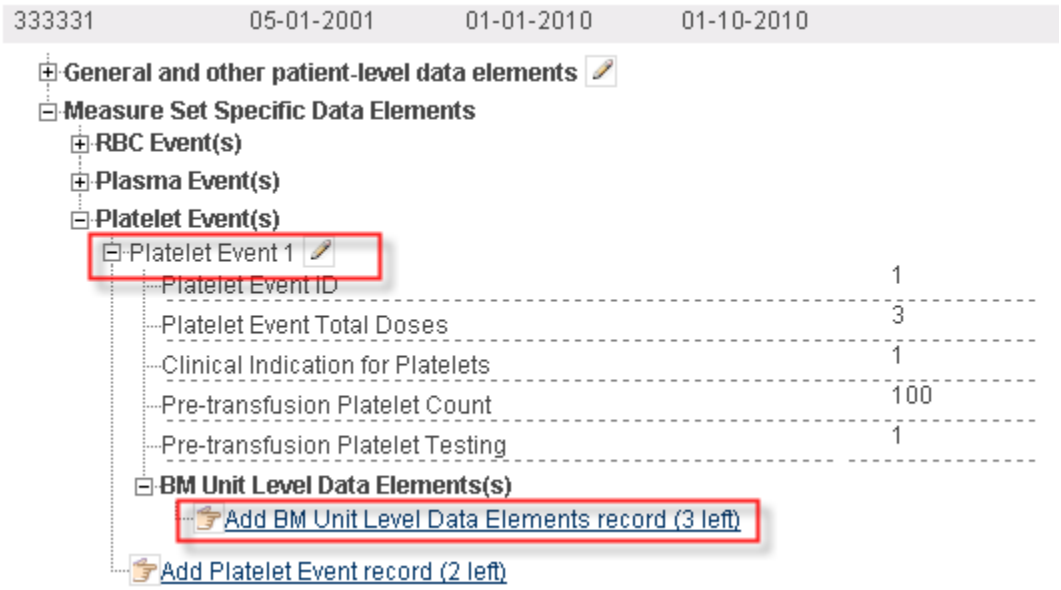
Navigating the Blood Management Project
Data Collection Tool
Add Platelet Events and BM Unit Level Data Elements

a) To add a Platelet event, click on the "Add Platelet Event Record" Link

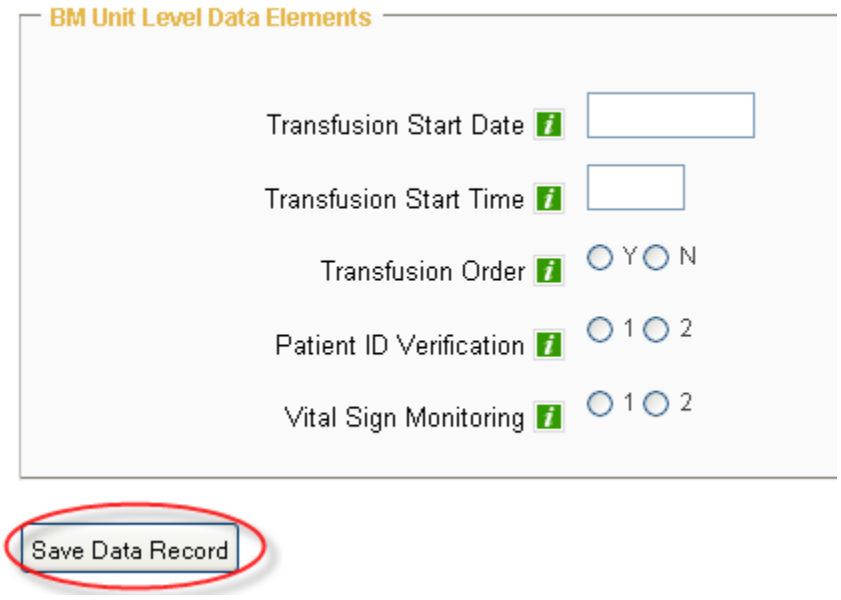
b) Enter data for Platelet Event 1 and click "Save Data Record"



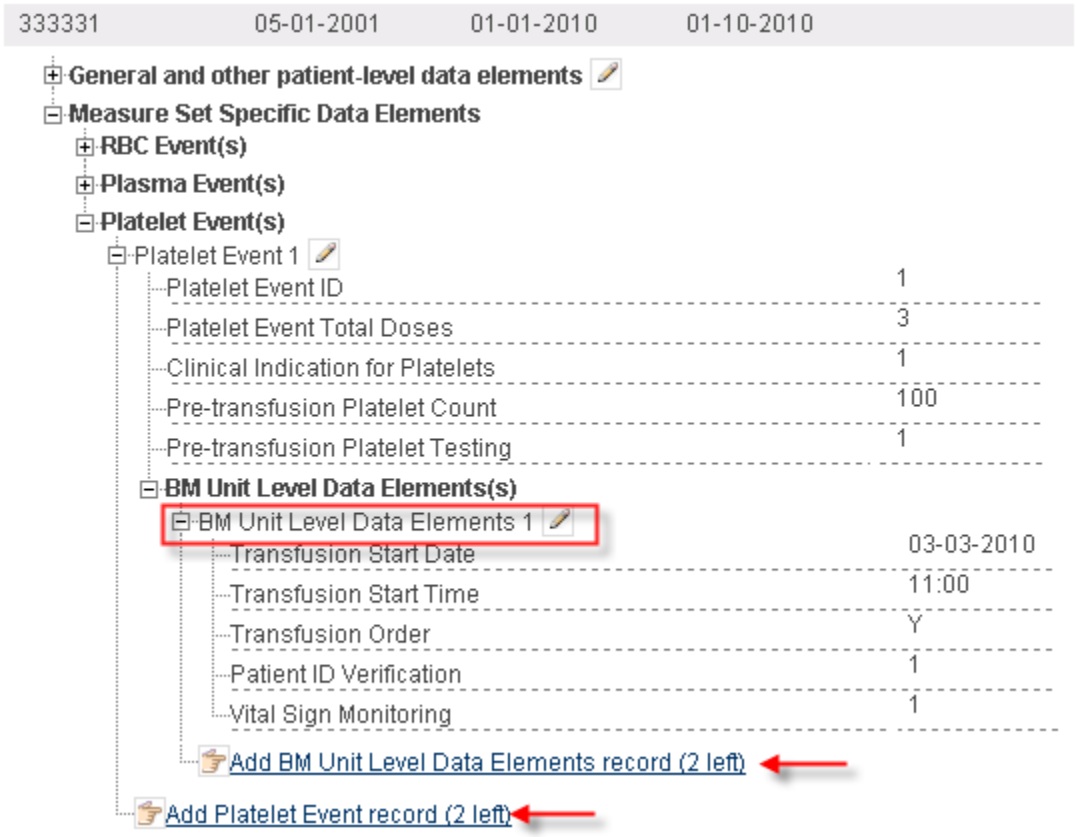
c) Data for "Platelet Event 1" is now included with this client record. To edit the Platelet Event data that you just entered, click on the pencil icon next to the event. To add unit level data for Platelet Event 1, click on the "Add BM Unit Level Data Elements Record" link. (NOTE: you can add up to three BM Unit Level Records)



d) Enter data for the BM Unit Level Record for Platelet Event 1 and click "Save Data Record"



e) Data for "BM Unit Level 1" for "Platelet Event 1" is now included with this client record. To edit the BM unit data that you just entered, click on the pencil icon. To add another BM Unit for Platelet Event 1, click on "Add BM Unit Level Data Elements Record" link. To add another Platelet Event, click on "Add Platelet Event Record".



Marking Records As "Complete"

a) Once you are done entering and editing data for a record, you will need to mark the record as complete. **Please note: Once you check the box for a record under "Complete" you are BOTH marking the record as complete AND locking that record for any further editing**. When you click on the checkbox, the record will "disappear" from view. Do not be alarmed. The default view of the table is to only show incomplete records. To view the record you just completed, click on the link to "Show all Records (including complete)"

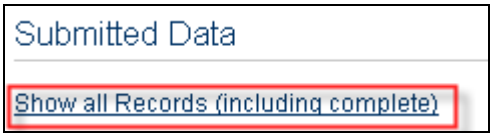

Show all Records (including complete)

UBCI	Birthdate	Admitted	Discharged	Completed
333333	03-03-1983	02-02-2010	02-05-2010	☐
333331	05-01-2001	01-01-2010	01-10-2010	☐
555555	04-04-1974	07-04-2009	07-07-2009	☐
333332	03-03-1983	02-02-2010	02-05-2010	☐
333335	05-01-2001	01-01-2010	01-10-2010	☐
1234567	12-30-2008	01-26-2010	02-02-2010	☐
2223	05/01/01	01/01/10	01/10/10	☐
333336	03-03-1983	02-02-2010	02-05-2010	☐
555556	12-09-1970	08-08-2009	08-12-2009	☐

Navigating the Blood Management Project
Data Collection Tool

Reviewing Records That Have Been Completed

a) To review a record that has been marked complete, switch the view on your hospital home page by clicking on the "Show all Records (including complete)" link.

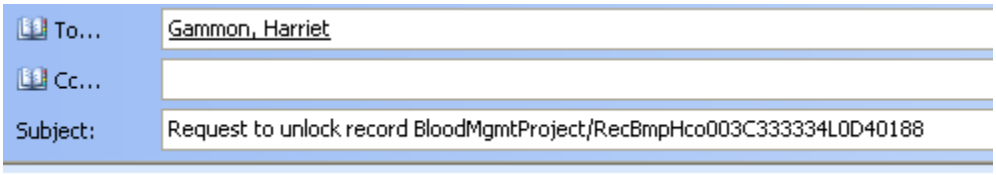


b) In this view you can see all records both complete and incomplete. Completed records are now LOCKED and can not be edited.

Show incomplete Records Only

UBCI	Birthdate	Admitted	Discharged	Completed
333333	03-03-1983	02-02-2010	02-05-2010	☐
333331	05-01-2001	01-01-2010	01-10-2010	☐
555555	04-04-1974	07-04-2009	07-07-2009	☐
333332	03-03-1983	02-02-2010	02-05-2010	☐
1234567	12-30-2008	01-26-2010	02-02-2010	☐
333335	05-01-2001	01-01-2010	01-10-2010	☐
333336	03-03-1983	02-02-2010	02-05-2010	☐
2223	05/01/01	01/01/10	01/10/10	☐
555556	12-09-1970	08-08-2009	08-12-2009	☐
333334	05-01-2001	01-01-2010	01-10-2010	🔒
99999999	01-01-1901	11-11-2010	11-15-2010	🔒
4445	03/03/83	02/02/10	02/05/10	🔒
444555	03/03/83	02/02/10	02/05/10	🔒
2224	05/01/01	01/01/10	01/10/10	🔒

b) If, for any reason, you need to unlock a record, you will need to send an e-mail to the project leader, Harriet Gammon. To send your e-mail request, click on the "lock" icon, and an e-mail form should appear. It will be addressed to Harriet, and the subject line will contain a reference to the specific record.



c) In your e-mail, please briefly explain why the record needs to be unlocked (e.g., Accidentally clicked the "Complete" checkbox).

PATIENT BLOOD MANAGEMENT PERFORMANCE MEASURES PROJECT - Technical Advisory Panel

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Department of Veterans Affairs, Louis Stokes Medical Center
Case Western Reserve University School of Medicine
Cleveland, OH