

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 #: 1526	NQF Project: Surgery Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION	
De.1 Measure Title: Transfusion Consent	
De.2 Brief description of measure: Percentage of patients with a signed consent for blood transfusion who received information about the risks, benefits and alternatives of transfusions prior to the initial transfusion or the initial transfusion was deemed a medical emergency - 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-01 is a part of the Patient Blood Management(PBM) measure set: 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)	
De.4 National Priority Partners Priority Area: Patient and family engagement, Care coordination, Safety	
De.5 IOM Quality Domain: Patient-centered, Safety	
De.6 Consumer Care Need: Getting better	

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. <i>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.</i>	A Y <input type="checkbox"/> N <input type="checkbox"/>
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:	
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 <input type="checkbox"/> N <input type="checkbox"/>
C. The intended use of the measure includes <u>both</u> public reporting <u>and</u> quality improvement. ► Purpose: Public reporting, Internal quality improvement Accreditation	C Y <input type="checkbox"/> N <input type="checkbox"/>
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 <input type="checkbox"/> N <input type="checkbox"/>
(for NQF staff use) Have all conditions for consideration been met? Staff Notes to Steward (<i>if submission returned</i>):	Met Y <input type="checkbox"/> N <input type="checkbox"/>
Staff Notes to Reviewers (<i>issues or questions regarding any criteria</i>):	
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: Frequently performed procedure 1a.2 1a.3 Summary of Evidence of High Impact: In certain circumstances, blood transfusions can save lives, restore normal life expectancy and improve the quality of life. However, results from recent studies have shown that blood transfusions may not be the best treatment and may cause serious adverse events, so the decision to transfuse must be made with great care. Recent national health policies and practices have put greater emphasis on patient involvement and choice about medical treatment that should include information about blood transfusions. Every patient has the right to know why a treatment is recommended and if there are any risks or alternatives. 1a.4 Citations for Evidence of High Impact: Rock, G, Berger R, Filion D, et. al. Documenting a transfusion: how well is it done? Transfusion 2007;47:568-572. Manthous CA, DeGirolama A, Haddad C, et al. Informed consent for medical procedures: Local and national practices. Chest 2003;124:1978-84. Hewitt B, de Silva M. Consent for transfusion BMJ 1997;316:397. Speiss BD, Counts RB, Gould SA. Perioperative Transfusion Medicine, Williams and Wilkins; 1998; 201-204.	1a C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/>

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. Bethesda, 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.

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: The practice of obtaining consent for blood transfusions is inconsistent across the nation. Establishing a process to monitor transfusion consents may increase the number of patients who will receive information about the risks, benefits and alternatives to transfusion as more studies cite data on increased mortality and morbidity rates from blood transfusions. Involving patients in decision-making is the right thing to do.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:

The process for obtaining consent has been inconsistent across the United Kingdom and Canada. In 1997, one study showed that only 31% of patients were given information before transfusion with the remainder receiving no information or were told they were going to have a transfusion. 82 percent of these patients felt they received enough information, while 92 percent indicated that they understood why they needed a transfusion. Twenty percent said that additional information especially about risk would have been helpful. Two small studies were done that showed that 75% of cases had no documentation by the doctor or designate that a discussion informing them about the transfusion had occurred. One study in Canada reviewed 1005 charts with documentation of a consent in 13.2% of the charts. No studies have been done like it in the US, but antidotal evidence suggests that the US has similar problems. One report stated that many patients were not aware that they had received blood. Even states that have a mandated informed consent process, compliance has not been reported to be 100%. In 2004, Saxena reported that documentation of informed consent increased from 80 to 100 percent as a result of an audit to measure compliance with blood-ordering procedures. In another study, separate consent (beyond the general consent to treat) was not uniformly obtained for the transfusion of blood products (range, 74 to 93%).

1b.3 Citations for data on performance gap:

Hewitt B, DeSilva M. Consent for transfusion. *BMJ* 1997;316:397.
 California Blood Bank Society. Survey on Informed Consent for Transfusion. Available at: http://www.cbbsweb.org/enf/2003/consent_blood2.html Accessed December 10, 2010.
 Manthous CA, DeGirolama A, Haddad C, et al. Informed consent for medical procedures: Local and national practices. *Chest* 2003;124:1978-84.
 Rock, G, Berger R, Fillion D, et. al. Documenting a transfusion: how well is it done? *Transfusion* 2007;47:568-572.
 Murphy MF, Docherty S, Greenfield P. Survey of the information given to patients about blood transfusion and the need for consent before transfusion. *Transfus Med* 1997;7:287-8.
 McClelland DB;Working party of the clinical resource and audit group. Optimal use of donor blood. Edinburgh:National Health Service (Scotland): 1995.
 Saxena S, Ramer L, Shulman IA. A comprehensive assessment program to improve blood-administering practices using the FOCUS-PDCA model. *Transfusion* 2004;44:1350-1356.

1b.4 Summary of Data on disparities by population group:

Educating patients about blood transfusions may be difficult for those with communication issues such as low literacy levels, lack of adequate skills to read or understand health care information or those who may have recently immigrated to this county.

1b.5 Citations for data on Disparities:

Matiasek J, Wynia MK. Patient and Family Involvement: Reconceptualizing the informed consent process at eight innovative hospitals. *The Joint Commission Journal on Quality and Patient Safety* 2008. 34;3:127-137.

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<p>Weiss B. Epidemiology of low health literacy. In J.G. Schwarzberg, J.B. VanGeest, C.C Wang (eds.): Understanding Health Literacy: Implications for Medicine and Public Health. Chicago:AMA Press, 2005:17-39.</p>	
<p>1c. Outcome or Evidence to Support Measure Focus</p> <p>1c.1 Relationship to Outcomes (<i>For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population</i>): The desired outcome for this measure is two-fold. Hospitals would develop a culture that promotes patient-centered care by making information about the need for transfusion available to patients, families and caregivers, and this in turn would allow all patients to have an opportunity to engage in decision-making in accordance with their personal preferences and values.</p> <p>1c.2-3. Type of Evidence: Observational study, Expert opinion</p> <p>1c.4 Summary of Evidence (<i>as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome</i>): A 1998 study in Western Australia found that 96% of patients would avoid a transfusion if possible though only 4% were aware that alternatives were available. Similar results have been noted in the US, Europe and Canada. The medical community has also expressed a preference to avoid allogeneic blood products. Professionals surveyed in the United Kingdom would prefer their own blood to donated blood while anesthesiologists would prefer a blood substitute if blood was needed.</p> <p>1c.5 Rating of strength/quality of evidence (<i>also provide narrative description of the rating and by whom</i>): Not rated</p> <p>1c.6 Method for rating evidence: NA</p> <p>1c.7 Summary of Controversy/Contradictory Evidence: NA</p> <p>1c.8 Citations for Evidence (<i>other than guidelines</i>): Farmer S. Your Body, Your Choice. Singapore, Media Masters, 2000. Eurobarometer. Europeans and blood. Prepared for the European commission on Employment, Industrial Relations and Social Affairs. Paris, Institut National de la recherche Agronomique, 1995. Lowé KC, Ferguson E. Benefit and risk perception in transfusion medicine: blood and blood substitutes. J Intern Med 2003;253:498-507. Farmer S, Webb D. Your Body, Your Choice. Singapore, Media Masters, 2000.</p> <p>1c.9 Quote the Specific guideline recommendation (<i>including guideline number and/or page number</i>): NA</p> <p>1c.10 Clinical Practice Guideline Citation: NA</p> <p>1c.11 National Guideline Clearinghouse or other URL: NA</p> <p>1c.12 Rating of strength of recommendation (<i>also provide narrative description of the rating and by whom</i>): NA</p> <p>1c.13 Method for rating strength of recommendation (<i>If different from USPSTF system, also describe rating and how it relates to USPSTF</i>): NA</p> <p>1c.14 Rationale for using this guideline over others: NA</p>	<p style="text-align: right;">1c C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/></p>
<p>TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for <i>Importance to Measure and Report</i>?</p>	<p style="text-align: center;">1</p>
<p>Steering Committee: Was the threshold criterion, <i>Importance to Measure and Report</i>, met? Rationale:</p>	<p style="text-align: center;">1 Y <input type="checkbox"/></p>

	N <input type="checkbox"/>
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, <u>as specified</u> , 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- specs C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/>
2a. Precisely Specified	
2a.1 Numerator Statement (<i>Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome</i>): 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	
2a.2 Numerator Time Window (<i>The time period in which cases are eligible for inclusion in the numerator</i>): Episode of Care	
2a.3 Numerator Details (<i>All information required to collect/calculate the numerator, including all codes, logic, and definitions</i>): The units in the numerator are a subset of the denominator units. The following data elements are collected for the numerator; Transfusion Consent, Education Addressed Risks, Benefits and Alternatives. Detailed descriptions are provided in attachment for Section 2a.30.	
2a.4 Denominator Statement (<i>Brief, text description of the denominator - target population being measured</i>): Patients who received red blood cells, platelets or plasma	
2a.5 Target population gender: Female, Male 2a.6 Target population age range: All ages	
2a.7 Denominator Time Window (<i>The time period in which cases are eligible for inclusion in the denominator</i>): Episode of Care	
2a.8 Denominator Details (<i>All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions</i>): Admission Date Blood Bank Records Discharge Date ICD-9-CM Principal or Other Procedure Codes Detailed descriptions are provided in the attachment for Section 2a.30.	
2a.9 Denominator Exclusions (<i>Brief text description of exclusions from the target population</i>): None	
2a.10 Denominator Exclusion Details (<i>All information required to collect exclusions to the denominator, including all codes, logic, and definitions</i>): None	
2a.11 Stratification Details/Variables (<i>All information required to stratify the measure including the stratification variables, all codes, logic, and definitions</i>): None	
2a.12-13 Risk Adjustment Type: No risk adjustment necessary	
2a.14 Risk Adjustment Methodology/Variables (<i>List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method</i>):	

<p>2a.15-17 Detailed risk model available Web page URL or attachment:</p>	
<p>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 the attachment for Section 2a.30.</p>	
<p>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.</p>	
<p>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 discharged from the designated six months for each of the measures. Post pilot, the sample size will be based on the number of units transfused per discharge month or quarter. Cases for this measure are derived from the initial transfusion of cases in PBM-02 - PBM-04. 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.</p>	
<p>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</p>	
<p>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 will most likely 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</p>	
<p>2a.26-28 Data source/data collection instrument reference web page URL or attachment: Attachment The_Patient Blood_Management_Tool [1].pdf</p>	
<p>2a.29-31 Data dictionary/code table web page URL or attachment: Attachment PBMSpecifications-634279424304913378.pdf</p>	
<p>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</p>	
<p>2a.36-37 Care Settings (Check the setting(s) for which the measure is specified and tested) Hospital</p>	
<p>2a.38-41 Clinical Services (Healthcare services being measured, check all that apply) Clinicians: Nurses, Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO), Other Transfusion specialist</p>	
TESTING/ANALYSIS	
<p>2b. Reliability testing</p> <p>2b.1 Data/sample (description of data/sample and size): A sample of 194 medical records were reabstracted at 12 randomly selected pilot hospitals July through September 2010.</p> <p>2b.2 Analytic Method (type of reliability & rationale, method for testing): Hospitals for reliability testing were randomly selected based on multiple characteristics, including region</p>	<p>2b C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/></p>

(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 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 cases was 139 with a computed original measure rate of 81.3%. The number of re-abstracted denominator cases was 115 with a re-abstracted measure rate of 74.8%. The absolute difference was 6.5% with a Kappa score of 0.451. The percent of hospital identified population verified as 87% and the symmetry of the numerator versus denominator was 1.7%. The match rate for 184 cases for the individual data elements was: Transfusion Consent 95.6% and Education Addressed Risks, Benefits and Alternatives to Transfusion 85.9%. 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 4.325 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 93% (54/58) of the pilot hospitals recommended moving the measure forward to the pilot test with suggested modifications.

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2d. Exclusions Justified

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

2d.2 Citations for Evidence:

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 NA

<p>2d.3 Data/sample (<i>description of data/sample and size</i>):</p> <p>2d.4 Analytic Method (<i>type analysis & rationale</i>):</p> <p>2d.5 Testing Results (<i>e.g., frequency, variability, sensitivity analyses</i>):</p>	
<p>2e. Risk Adjustment for Outcomes/ Resource Use Measures</p> <p>2e.1 Data/sample (<i>description of data/sample and size</i>):</p> <p>2e.2 Analytic Method (<i>type of risk adjustment, analysis, & rationale</i>):</p> <p>2e.3 Testing Results (<i>risk model performance metrics</i>):</p> <p>2e.4 If outcome or resource use measure is not risk adjusted, provide rationale:</p>	<p>2e C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/></p>
<p>2f. Identification of Meaningful Differences in Performance</p> <p>2f.1 Data/sample from Testing or Current Use (<i>description of data/sample and size</i>): The sub-set of patients > 4 months of age that had been selected for measures PBM-02 -PBM-04 was used from the eligible measure population of inpatient discharges from 7/1/09 - 12/31/09. For each patient, the initial transfusion for any of the blood products was used for measurement purposes.</p> <p>2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance (<i>type of analysis & rationale</i>): Z-scores were used to determine hospital measure rates that were significantly different from the overall average.</p> <p>2f.3 Provide Measure Scores from Testing or Current Use (<i>description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance</i>): Mean Rate for All Hospitals = 89.7% Overall Rate for All Hospitals = 88.7% Standard Deviation = 18.6% Median Rate for All Hospitals = 89.7% Min. = 5.7% Max. = 100% Lower Quartile = 90.3% Upper Quartile = 99.2% Z < -2* = 2 Z < 2** = 0</p>	<p>2f C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/></p>
<p>2g. Comparability of Multiple Data Sources/Methods</p> <p>2g.1 Data/sample (<i>description of data/sample and size</i>):</p> <p>2g.2 Analytic Method (<i>type of analysis & rationale</i>):</p> <p>2g.3 Testing Results (<i>e.g., correlation statistics, comparison of rankings</i>):</p>	<p>2g C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/></p>
<p>2h. Disparities in Care</p>	<p>2h C <input type="checkbox"/></p>

<p>2h.1 If measure is stratified, provide stratified results (scores by stratified categories/cohorts):</p> <p>2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:</p>	<p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p> <p>NA <input type="checkbox"/></p>
<p>TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for <i>Scientific Acceptability of Measure Properties</i>?</p>	<p>2</p>
<p>Steering Committee: Overall, to what extent was the criterion, <i>Scientific Acceptability of Measure Properties</i>, met? Rationale:</p>	<p>2</p> <p>C <input type="checkbox"/></p> <p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>
<p>3. USABILITY</p>	
<p>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)</p>	<p>Eval Rating</p>
<p>3a. Meaningful, Understandable, and Useful Information</p> <p>3a.1 Current Use: Not in use but testing completed</p> <p>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). <u>If not publicly reported</u>, 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.</p> <p>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). <u>If not used for QI</u>, 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.</p> <p>Testing of Interpretability (Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement)</p> <p>3a.4 Data/sample (description of data/sample and size):</p> <p>3a.5 Methods (e.g., focus group, survey, QI project):</p> <p>3a.6 Results (qualitative and/or quantitative results and conclusions):</p>	<p>3a</p> <p>C <input type="checkbox"/></p> <p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>
<p>3b/3c. Relation to other NQF-endorsed measures</p> <p>3b.1 NQF # and Title of similar or related measures:</p>	
<p>(for NQF staff use) Notes on similar/related endorsed or submitted measures:</p>	
<p>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 <u>or</u> different topic but same target population):</p> <p>3b.2 Are the measure specifications harmonized? If not, why?</p>	<p>3b</p> <p>C <input type="checkbox"/></p> <p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p> <p>NA <input type="checkbox"/></p>
<p>3c. Distinctive or Additive Value 3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:</p>	<p>3c</p> <p>C <input type="checkbox"/></p> <p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>

<p>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:</p>	<p>NA <input type="checkbox"/></p>
<p>TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for <i>Usability</i>?</p>	<p>3</p>
<p>Steering Committee: Overall, to what extent was the criterion, <i>Usability</i>, met? Rationale:</p>	<p>3 C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/></p>
<p>4. FEASIBILITY</p>	
<p>Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)</p>	<p>Eval Rating</p>
<p>4a. Data Generated as a Byproduct of Care Processes</p> <p>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)</p>	<p>4a C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/></p>
<p>4b. Electronic Sources</p> <p>4b.1 Are all the data elements available electronically? (<i>elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims</i>) No</p> <p>4b.2 If not, specify the near-term path to achieve electronic capture by most providers. Phase III will begin by January 2011 to retool the specifications for retrieval from an EHR.</p>	<p>4b C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/></p>
<p>4c. Exclusions</p> <p>4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications? No</p> <p>4c.2 If yes, provide justification.</p>	<p>4c C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/></p>
<p>4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences</p> <p>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 identified during testing</p>	<p>4d C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/></p>
<p>4e. Data Collection Strategy/Implementation</p> <p>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: There were very few data collection issues with this measure. Most patients had a signed transfusion consent, but information related to benefits was sometimes implied rather than have explicit information. Information about alternatives was also missing. We will emphasize the need for more explicit information in the notes for abstraction.</p> <p>The timing and frequency of data collection will remain monthly or quarterly as it does for the other Joint Commission measure sets. Maintaining patient confidentiality was not an issue during the pilot test, since</p>	<p>4e C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/></p>

<p>blinded hospital and patient identifiers are used on all data received by The Joint Commission staff for data quality reviews.</p> <p>Twenty hospitals estimated an average time of 30 minutes to abstract a unit of blood with an average cost of \$21-25 per hour. This measure would be included as part of the average time for one unit of blood, but anticipate that it would involve minimal time. 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.</p> <p>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 confidentiality 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.</p> <p>4e.2 Costs to implement the measure (<i>costs of data collection, fees associated with proprietary measures</i>):</p> <p>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 only evaluate the initial transfusion regardless of the number of units that were submitted for red blood cells, plasma or platelet for PBM-02 - PBM-04. 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.</p> <p>4e.3 Evidence for costs:</p> <p>4e.4 Business case documentation: For hospitals that document blood use with procedure codes, this measure requires minimal hospital resources to abstract and may decrease potential legal problems if adverse events occur as a result of the transfusion. Most hospitals require a consent for blood transfusions so the information should be readily available. Communicating with patients about their care options is in concert with national priorities and is the right thing to do. Patients who are satisfied with their experience will return when they need additional care and will likely recommend the hospital to others.</p>	
<p>TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for <i>Feasibility</i>?</p>	<p>4</p>
<p>Steering Committee: Overall, to what extent was the criterion, <i>Feasibility</i>, met? Rationale:</p>	<p>4 C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/></p>
<p style="text-align: center;">RECOMMENDATION</p>	
<p>(for NQF staff use) Check if measure is untested and only eligible for time-limited endorsement.</p>	<p>Time-limited <input type="checkbox"/></p>
<p>Steering Committee: Do you recommend for endorsement? Comments:</p>	<p>Y <input type="checkbox"/> N <input type="checkbox"/> A <input type="checkbox"/></p>
<p style="text-align: center;">CONTACT INFORMATION</p>	
<p>Co.1 Measure Steward (Intellectual Property Owner)</p>	

<p>Co.1 Organization The Joint Commission, One Renaissance Boulevard., Oakbrook Terrace, Illinois, 60181</p> <p>Co.2 Point of Contact Jerod M., Loeb, PhD, jloeb@jointcommission.org, 630-792-5920-</p>
<p>Measure Developer If different from Measure Steward</p> <p>Co.3 Organization The Joint Commission, One Renaissance Boulevard., Oakbrook Terrace, Illinois, 60181</p> <p>Co.4 Point of Contact Harriet, Gammon, MSN, RN, CPHQ, hgammon@jointcommission.org, 630-792-5926-</p>
<p>Co.5 Submitter If different from Measure Steward POC Harriet, Gammon, MSN, RN, CPHQ, hgammon@jointcommission.org, 630-792-5926-, The Joint Commission</p>
<p>Co.6 Additional organizations that sponsored/participated in measure development</p>
<p>ADDITIONAL INFORMATION</p>
<p>Workgroup/Expert Panel involved in measure development</p> <p>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.</p>
<p>Ad.2 If adapted, provide name of original measure:</p> <p>Ad.3-5 If adapted, provide original specifications URL or attachment</p>
<p>Measure Developer/Steward Updates and Ongoing Maintenance</p> <p>Ad.6 Year the measure was first released:</p> <p>Ad.7 Month and Year of most recent revision: 12, 2010</p> <p>Ad.8 What is your frequency for review/update of this measure? Biannually</p> <p>Ad.9 When is the next scheduled review/update for this measure? 06, 2011</p>
<p>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.</p> <p>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.</p>
<p>Ad.11 -13 Additional Information web page URL or attachment: Attachment TAPLISTWEBc.doc</p>
<p>Date of Submission (MM/DD/YY): 12/29/2010</p>

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

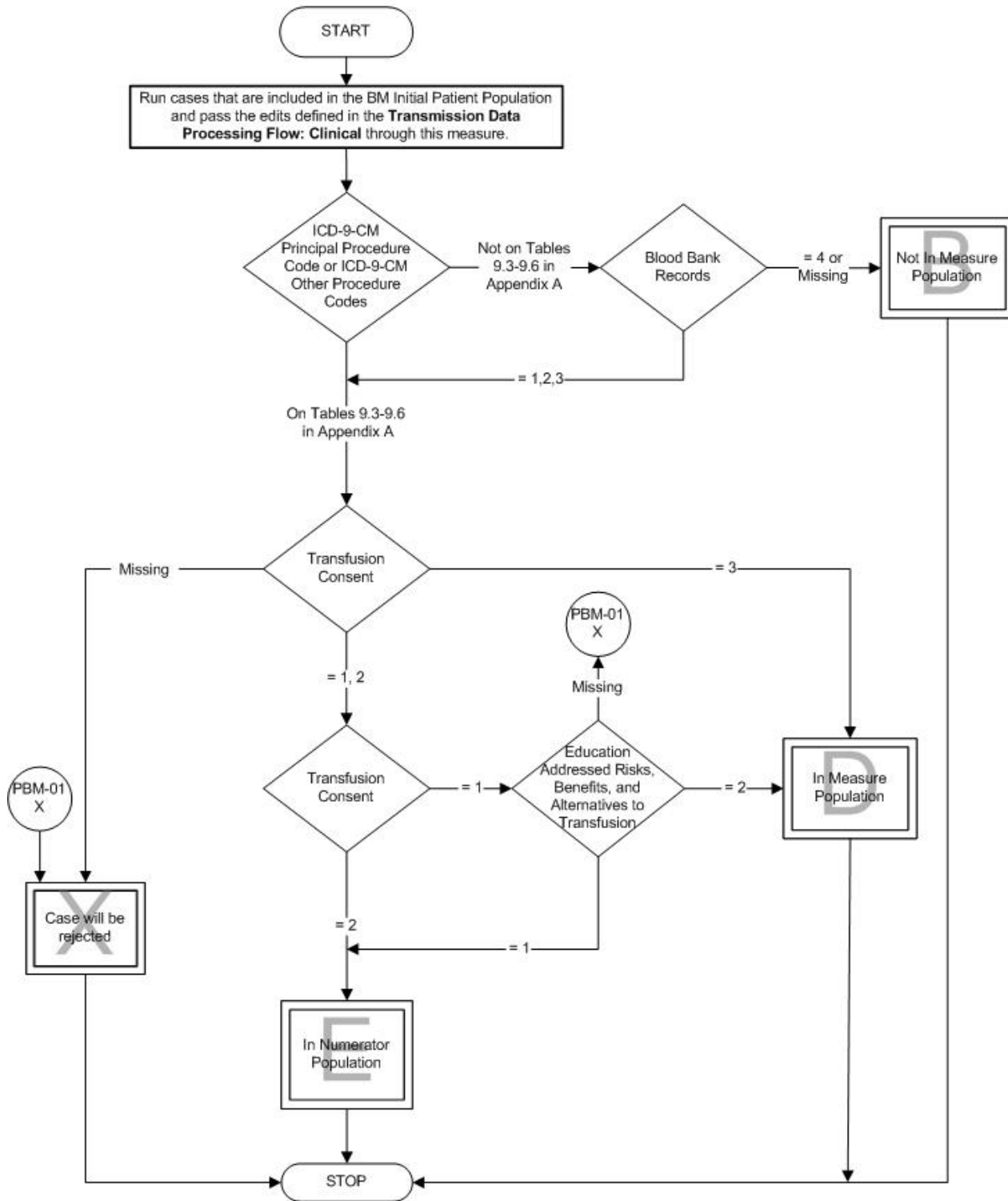
- Speiss BD, Counts RB, Gould SA. Perioperative Transfusion Medicine, Williams and Wilkins; 1998; 201-204.
- Stowell C, Sazama K. Informed Consent in Blood Transfusion and Cellular Therapies: Patients, Donors and Research Subjects. AABB Press; 2007; ISBN #978-1-56395-254-8.
- Burch JW, Uhl L. Guidelines for Informed Consent in Transfusion Medicine. AABB Press; 2006; ISBN #1-56395-146-0.2008.
- Standards for Blood Banks and Transfusion Services, 25th ed. Bethesda, 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:

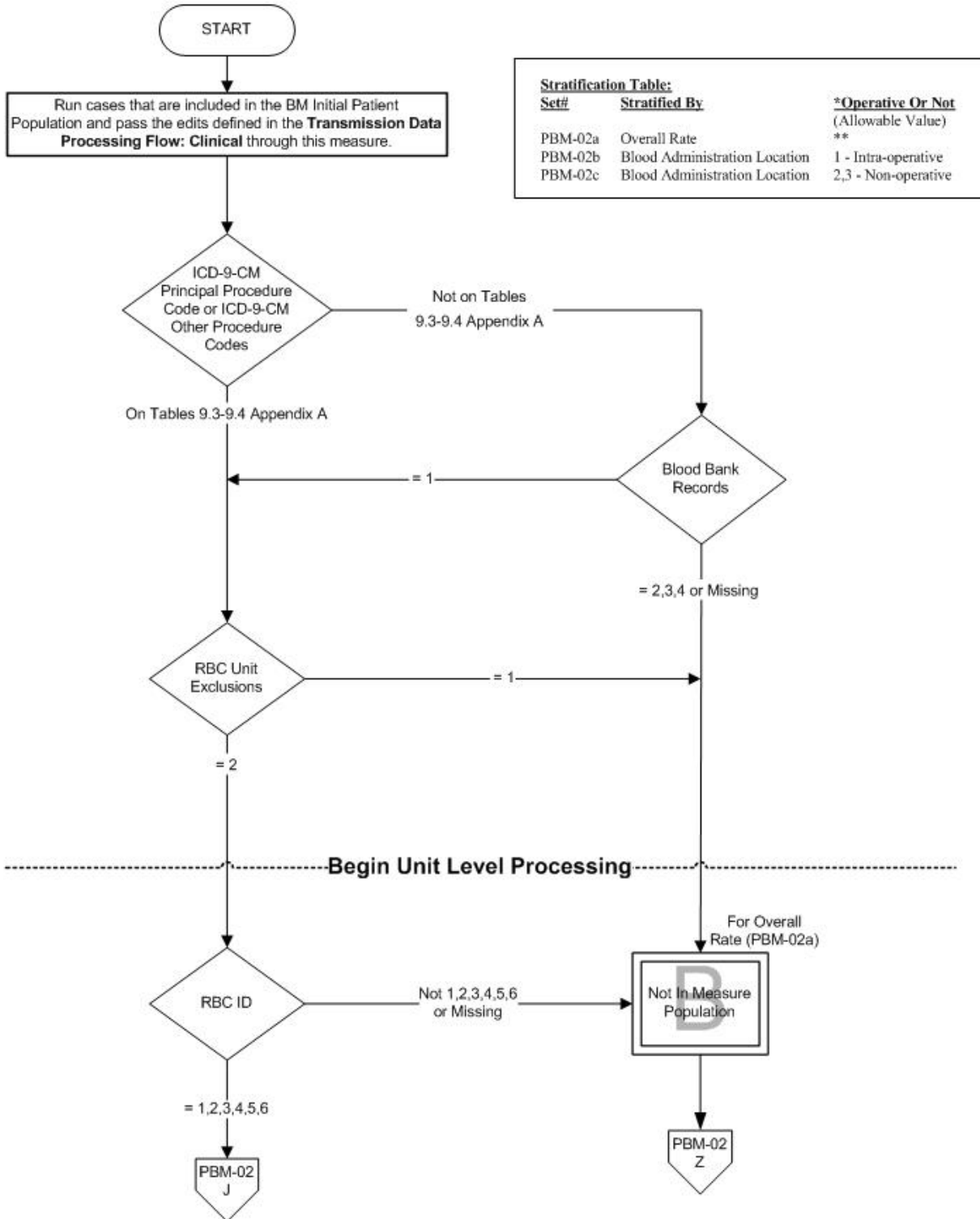
- Friedman MT, Ebrahim A. Adequacy of physician documentation of red blood cell transfusion and correlation with assessment of transfusion appropriateness. Arch Pathol Lab Med. 2006;130: 474-79.
- Corwin HL, Parsonnet KC, Gettinger A. RBC transfusion in the ICU: is there a reason? Chest. 1995;108: 767-771.
- 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.

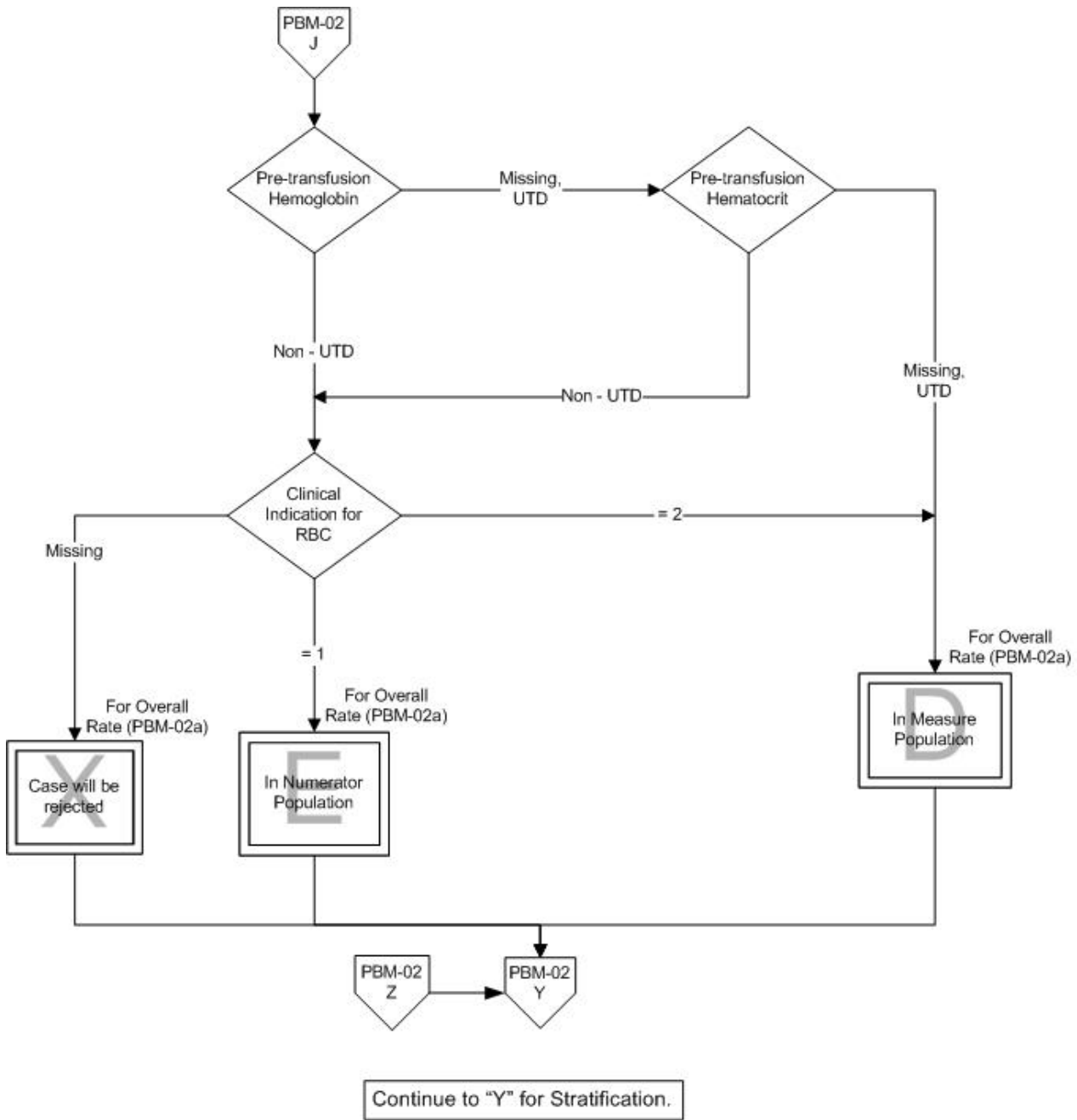
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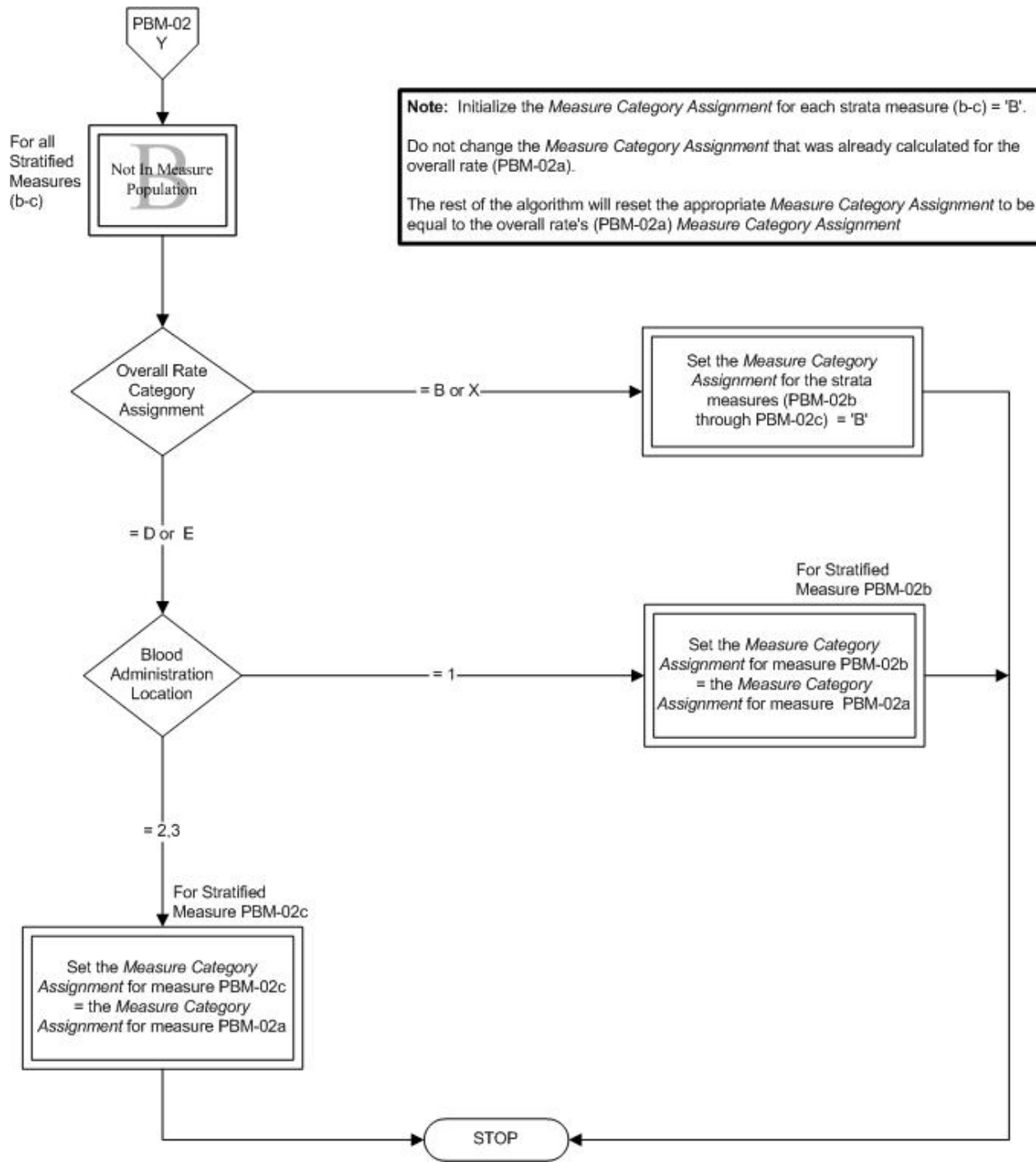
PBM-02: RBC Transfusion Indication

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







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 disproportionately 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:

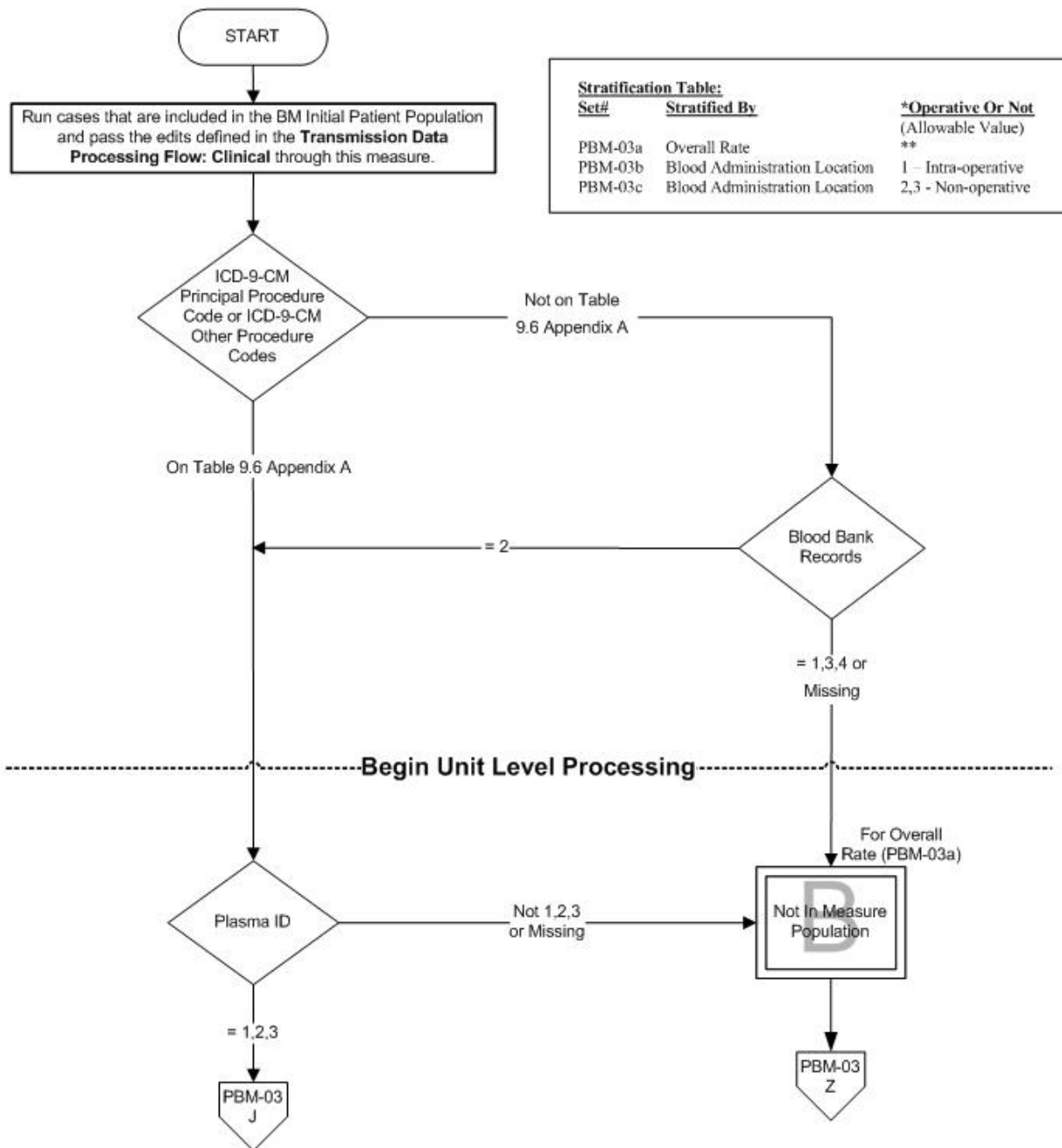
- Hui C, Williams I, Davis K. Clinical audit of the use of fresh-frozen plasma and platelets in a tertiary teaching hospital and the impact of a new transfusion request form. *Int Med J.* 2005;35:283-288.
- Wallis JP, Dzik S. Is fresh frozen plasma overtransfused in the United States? *Transfusion.* 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.

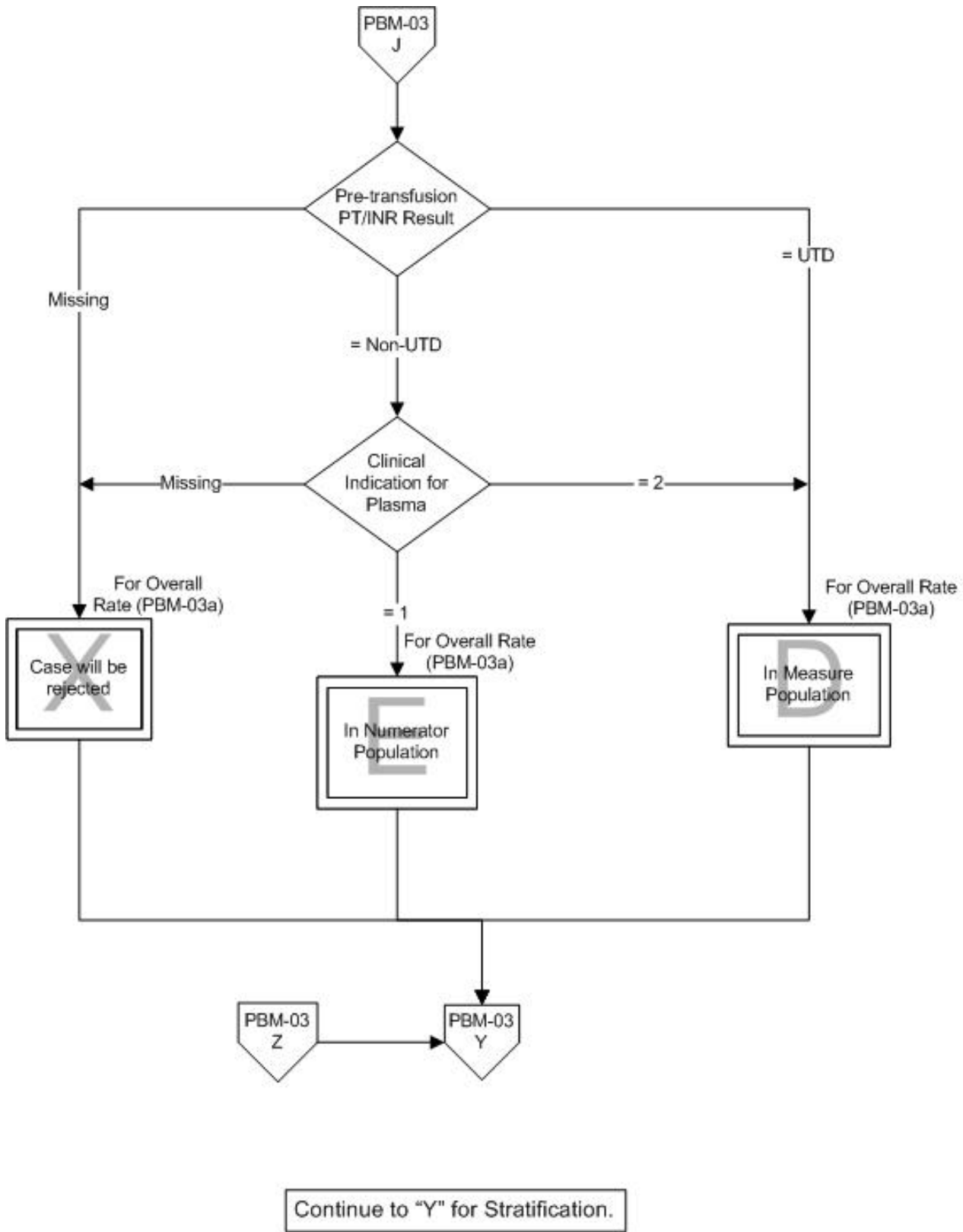
Measure Algorithm:

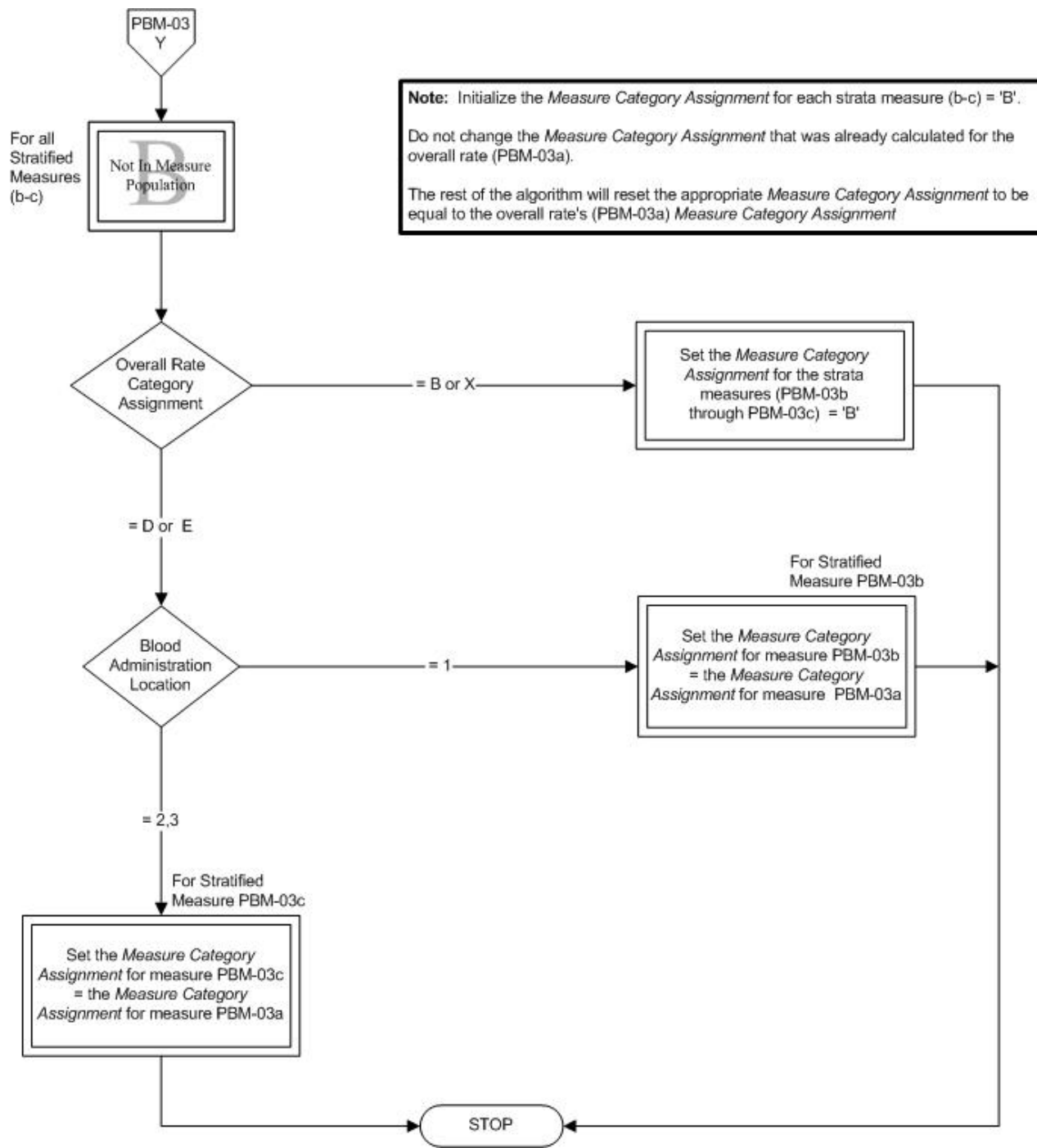
PBM-03: Plasma Transfusion Indication

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

Denominator: Number of transfused plasma units evaluated







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 appropriateness 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:

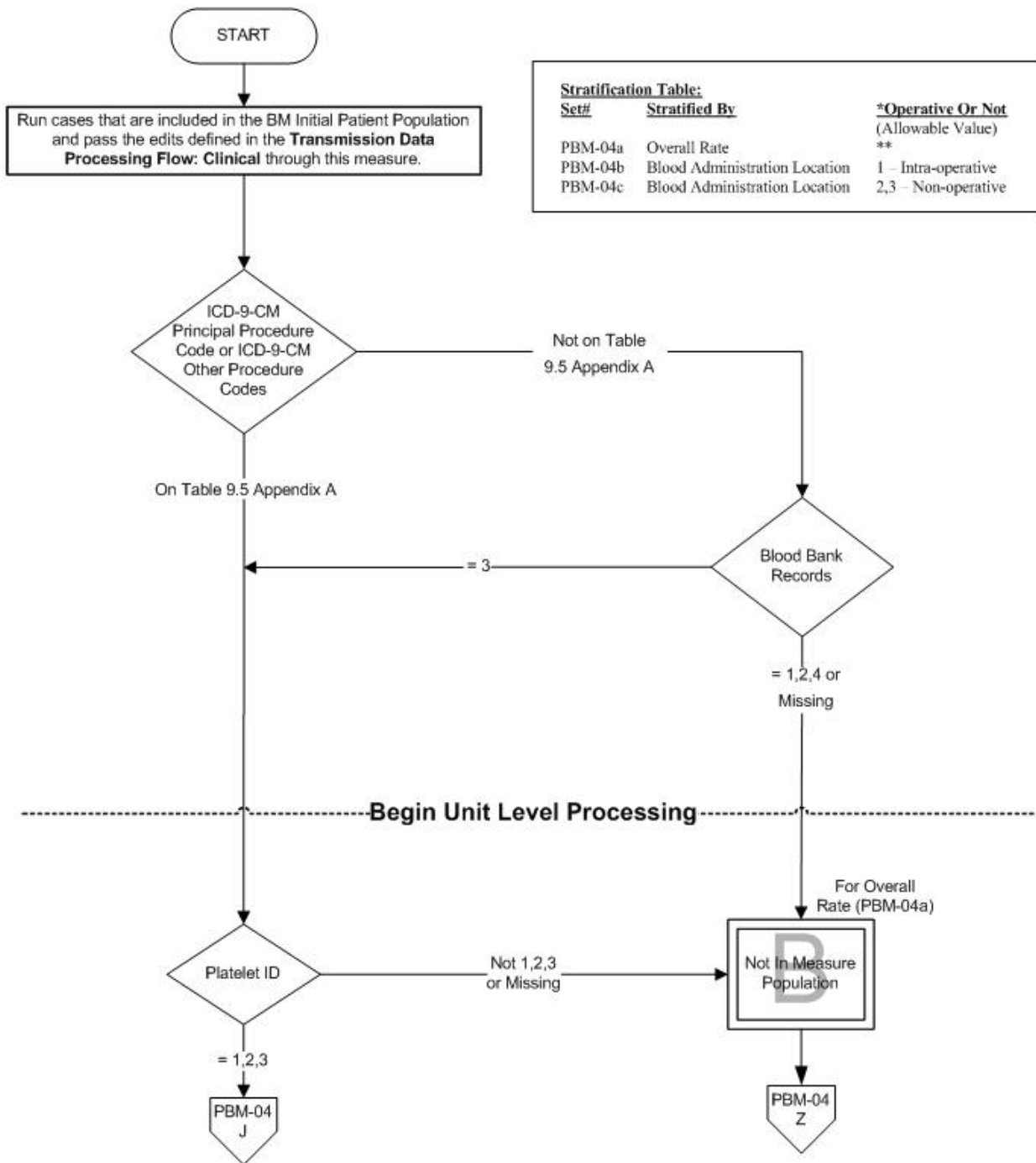
- Garrioch M, Sandbach J, Pirie E, Morrison A, Todd A, Green R. Reducing red cell transfusion by audit, education and a new guideline in a large teaching hospital. *Transfusion Med.* 2004;14:25-31.
- Petrides M. Red cell transfusion “trigger”: A review. *Southern Med J.* 2003; 96:664-667.
- Roback JD,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

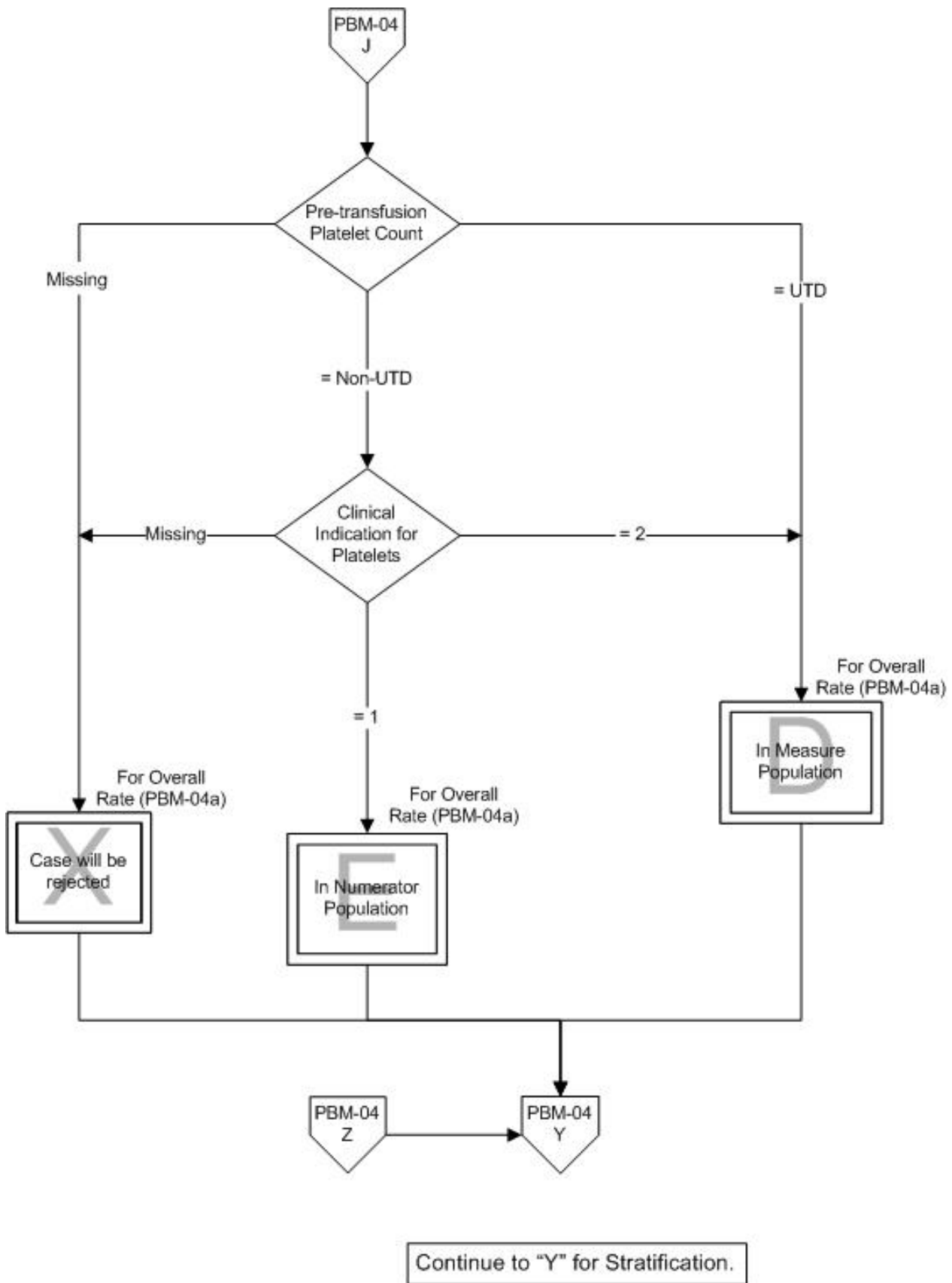
Measure Algorithm:

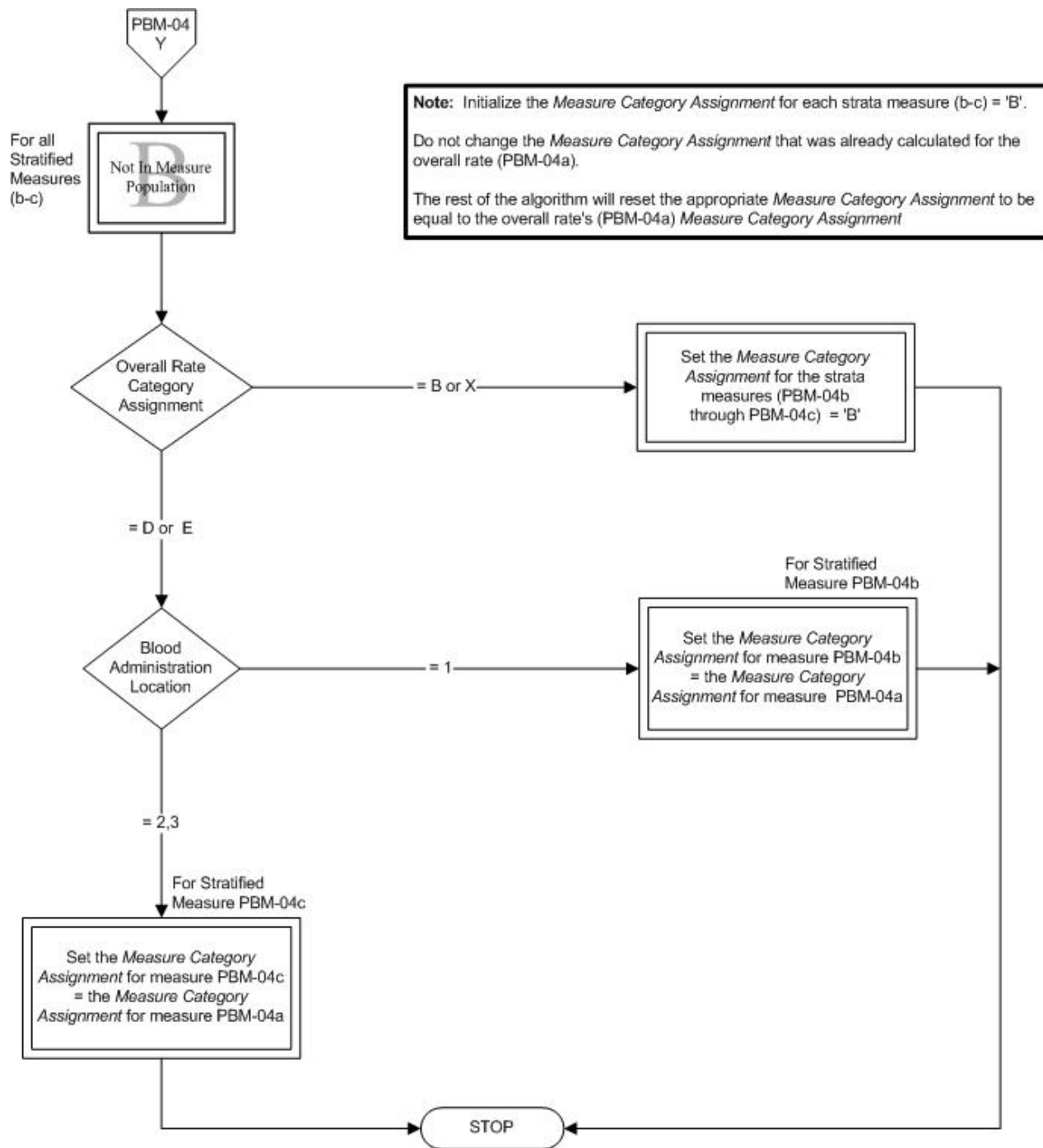
PBM-04: Platelet Transfusion Indication

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

Denominator: Number of transfused platelet units evaluated







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, Bethesda, 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. Bethesda, Maryland. [Available at http://www.aabb.org/Content/Professional_Development/Education_and_Training_Material/edtr (accessed November 2009).]

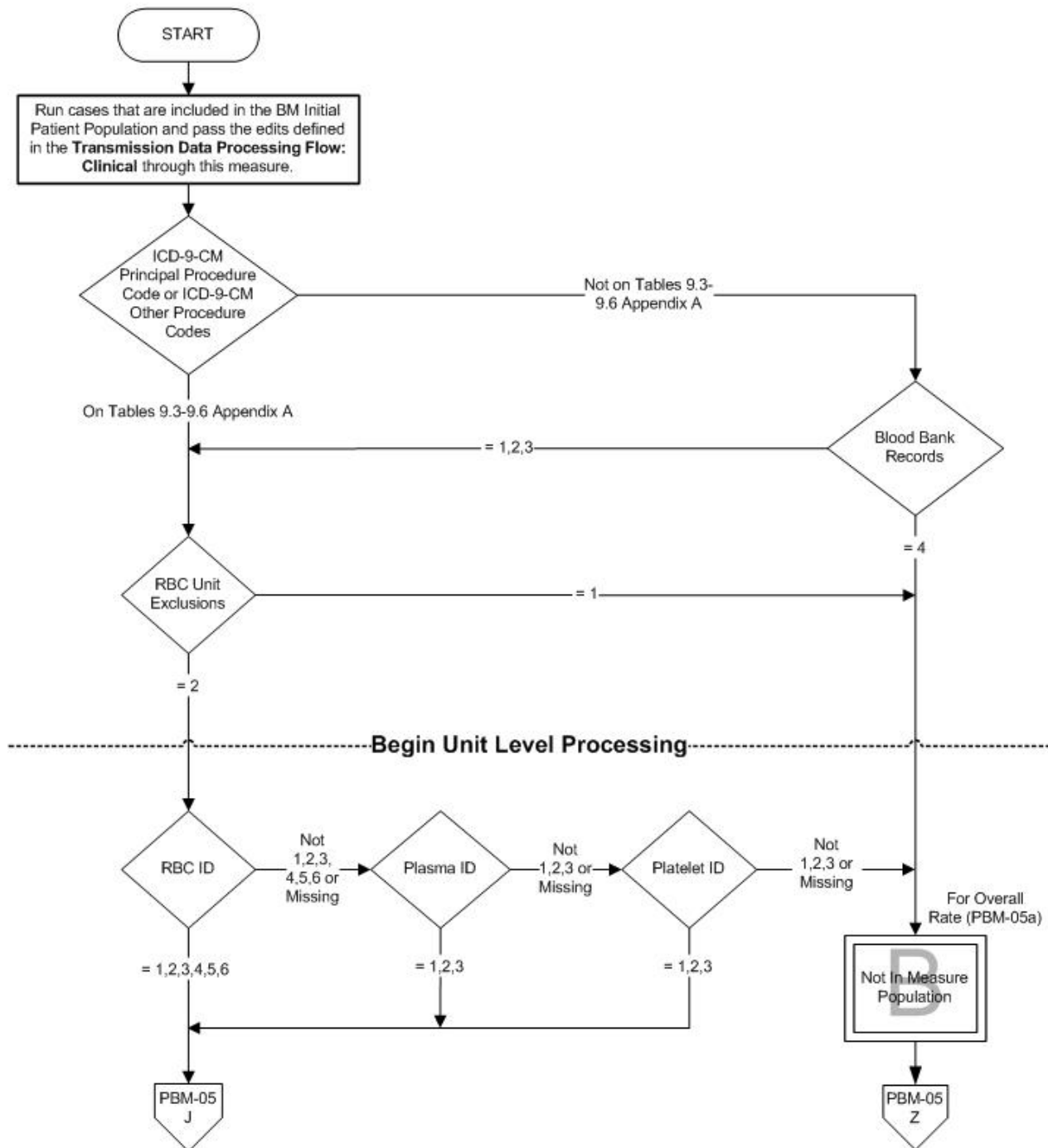
Measure Algorithm:

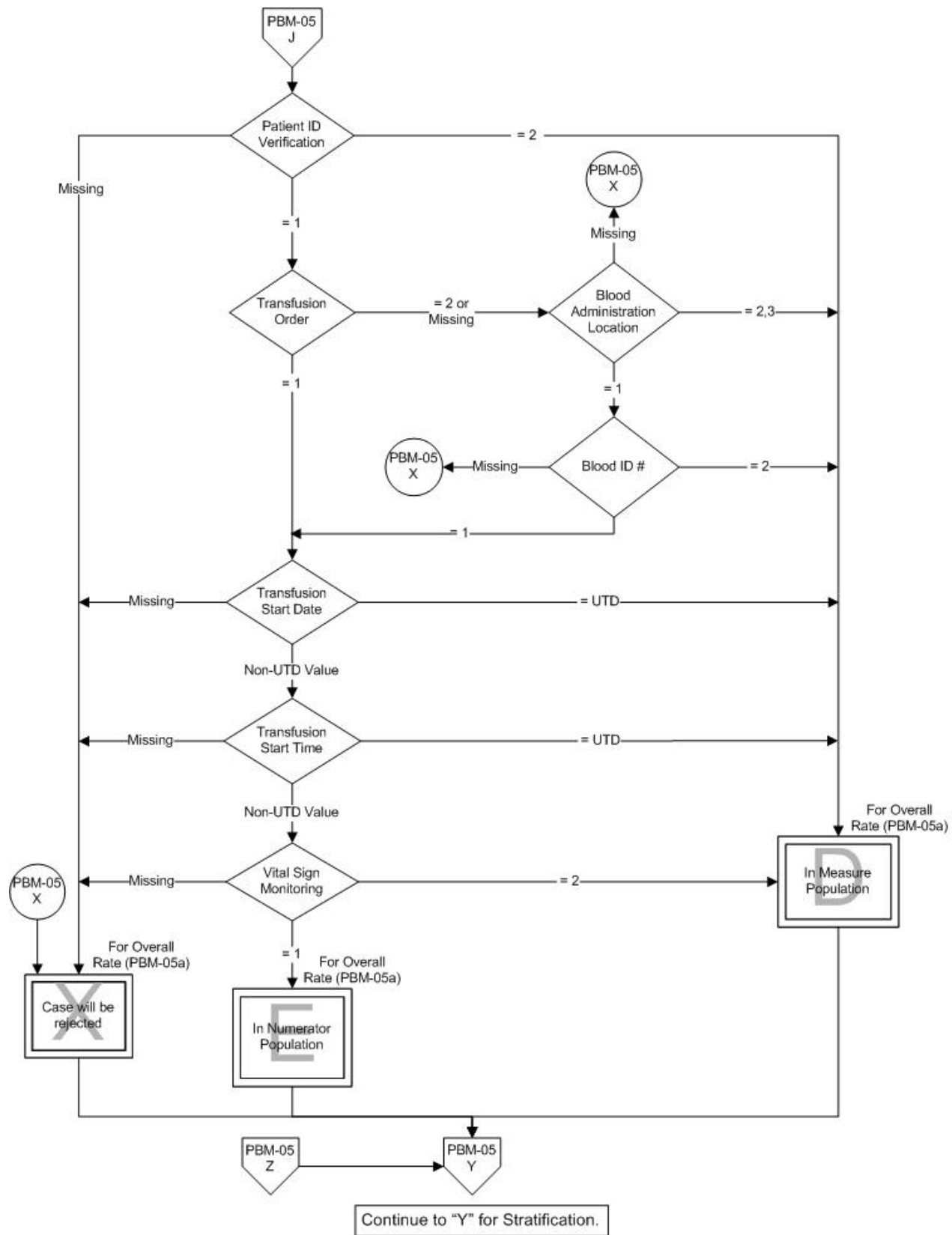
PBM-05: Blood Administration Documentation

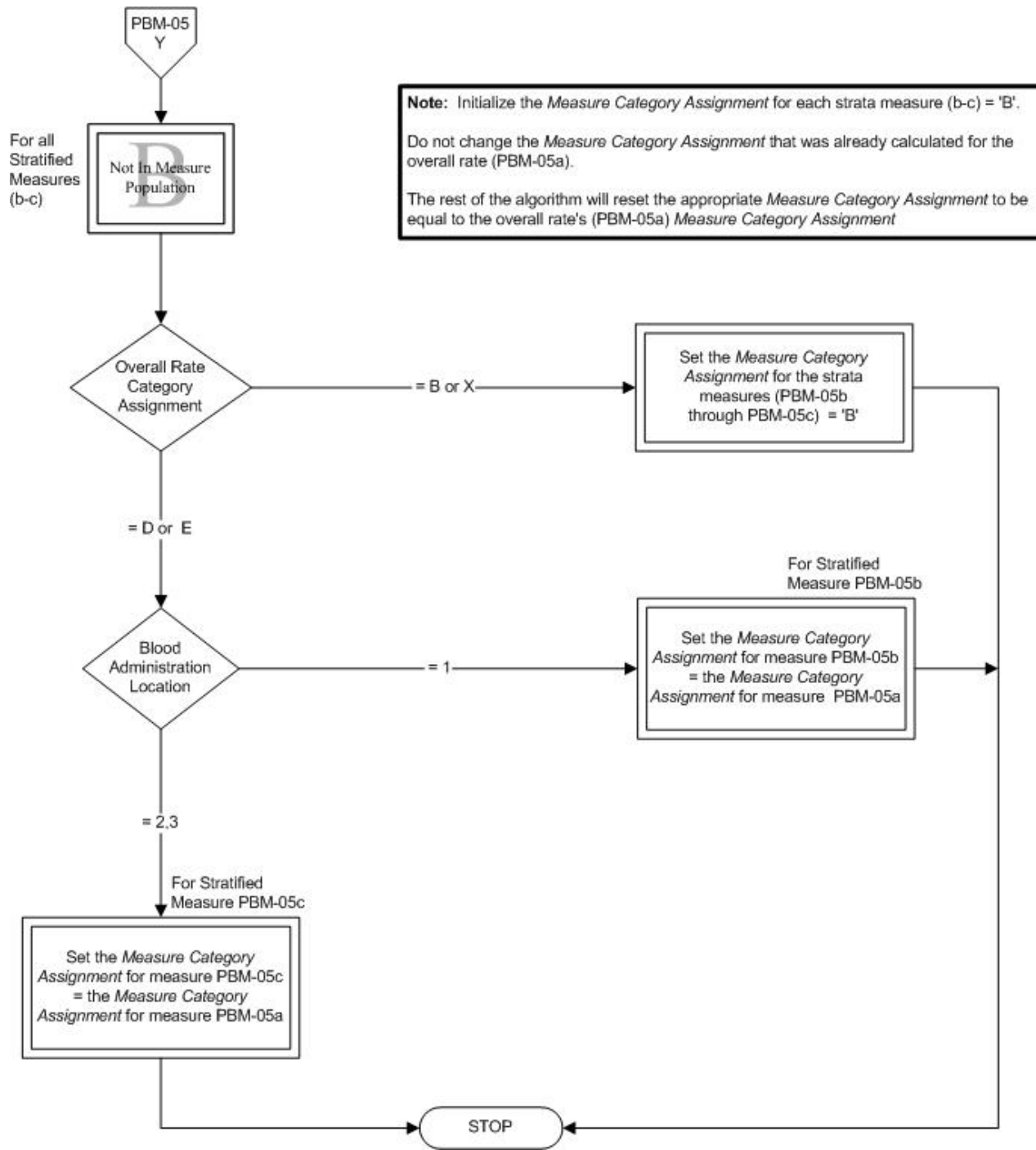
Numerator: Number of blood transfusion units (bags) or doses with documentation for all of the following:

- 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







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, Bethesda, MD: AABB, 2008.

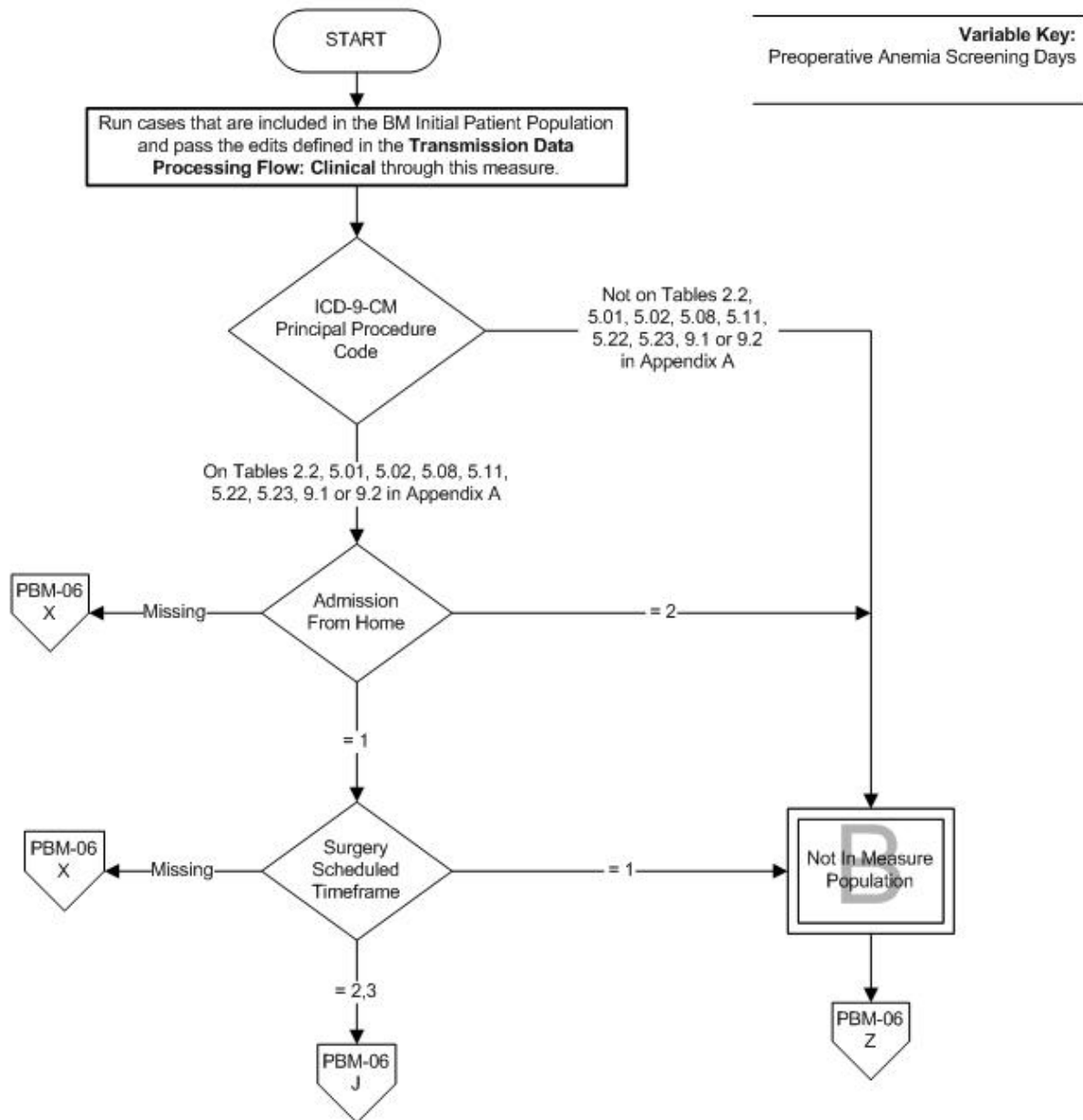
- Salido JA, Martin LA, Gomez LA, et al. Preoperative hemoglobin levels and the need for transfusion after prosthetic hip and knee surgery; analysis of predictive factors. J Bone Joint Surg. 2002;84: 216-20.
- Rady MY, Ryan T, Starr NJ. Perioperative determinants of morbidity and mortality in elderly 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.

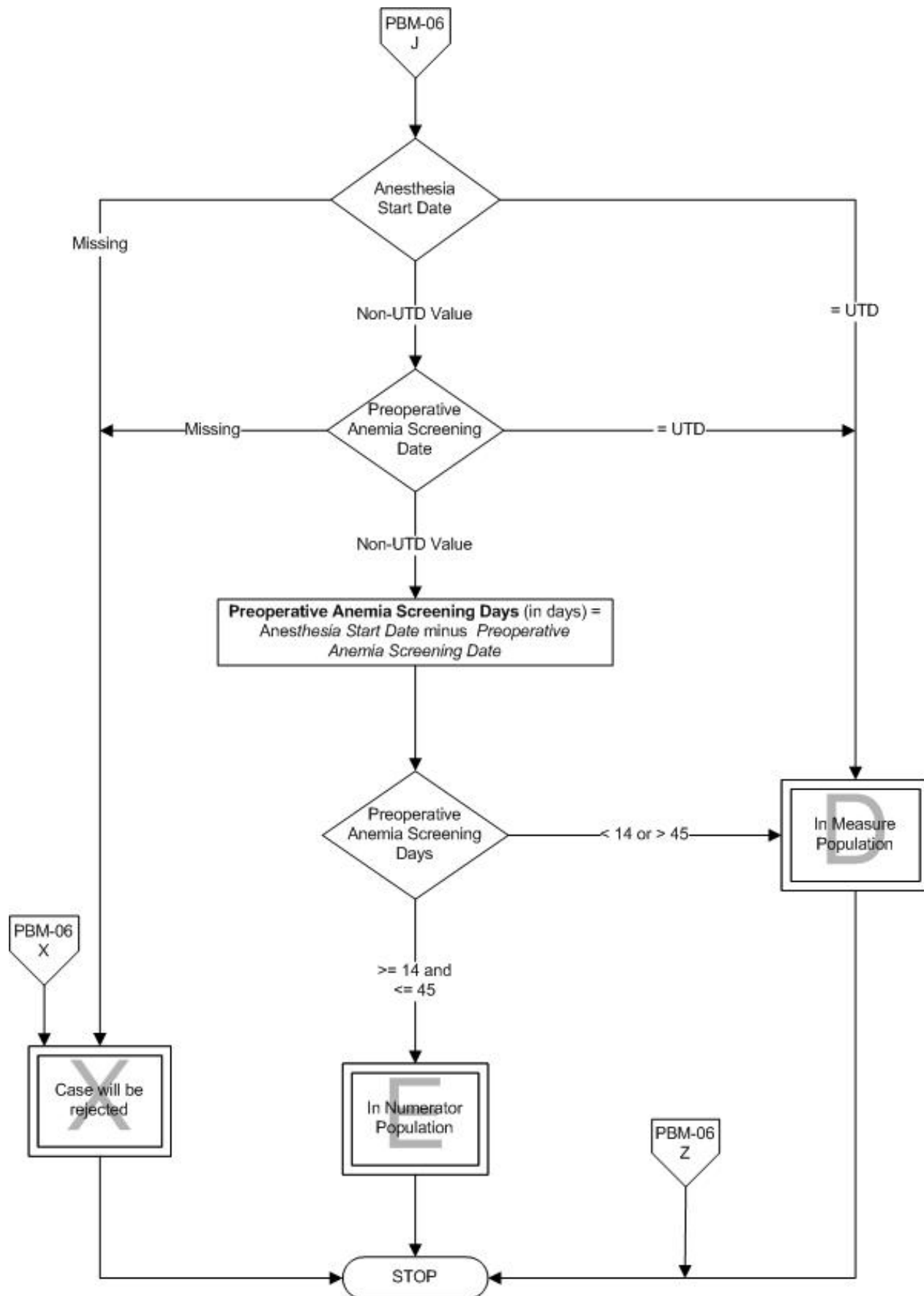
Measure Algorithm:

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.

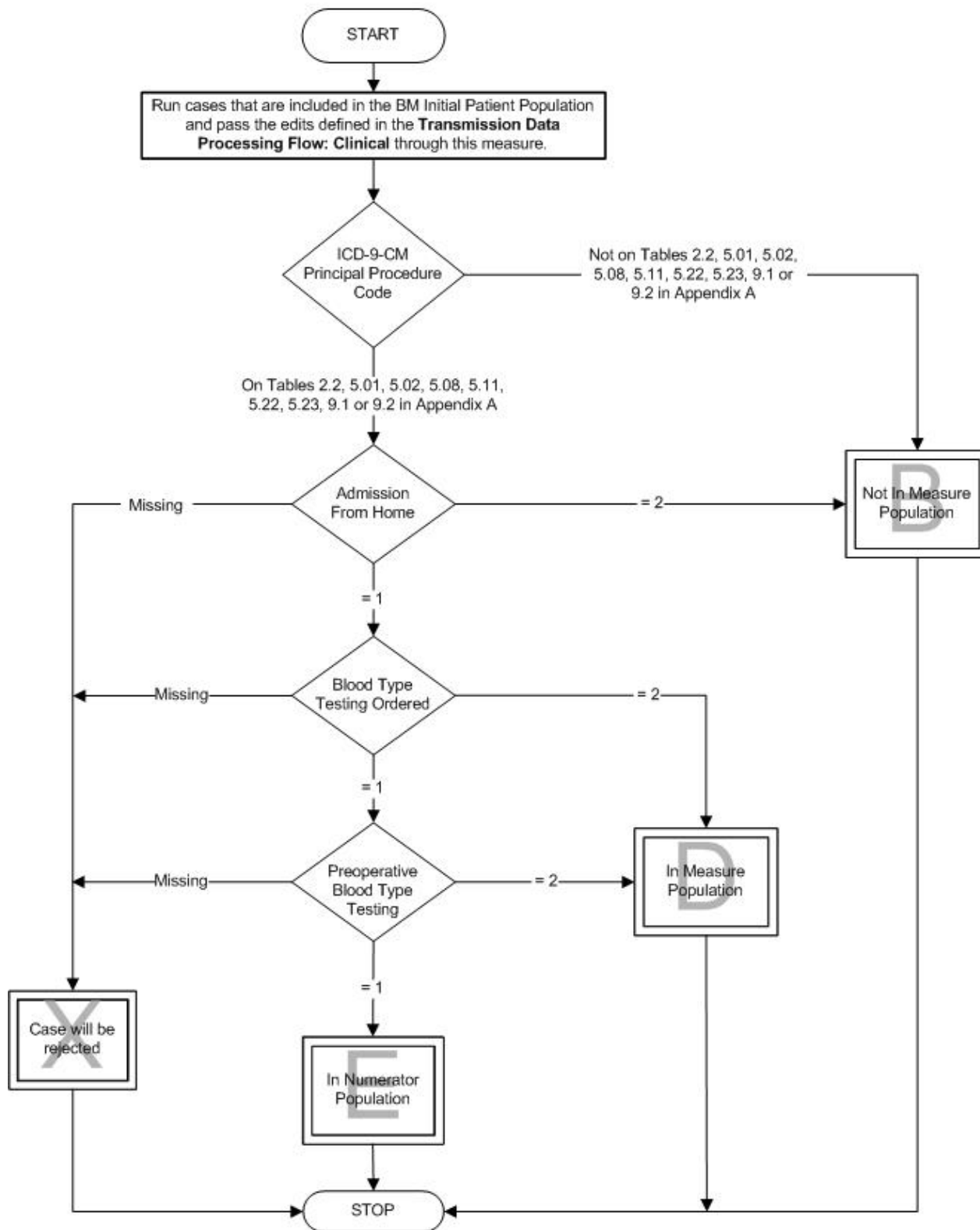
- Friedberg RC, Jones BA, Walsh MK. Type and screen completion for scheduled surgical procedures. A College of American Pathologists Q-Probes study of 8941 type and screen tests in 108 institutions. Arch Pathol Lab Med. 2003;127:533-40.
- Roback JD, ed. Technical manual. 16th ed, Bethesda, MD: AABB, 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 transfused 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 abstraction.
 - 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 $10^9/\mu\text{L}$ 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
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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 transfused. 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

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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

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	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

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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 ENDARTERECT
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

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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

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ICD-9-CM Diagnosis and Procedure Code Tables

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 transmycocardial revascularization	OPEN CHEST TRANS REVASC
36.32	Other transmycocardial 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

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ICD-9-CM Diagnosis and Procedure Code Tables

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

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

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

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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 transmycocardial revascularization	OPEN CHEST TRANS REVASC
36.32	Other transmycocardial 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

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ICD-9-CM Diagnosis and Procedure Code Tables

	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

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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	Ill-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	Ill-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-

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		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/PERIOCLUR
871	Open wound of eyeball	OCULAR LAC W/O PROLAPSE
872	Open wound of ear	OPN WOUND EXTERN EAR

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		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 wound 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

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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 PERIOCLAR
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 PERIOCLAR
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

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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

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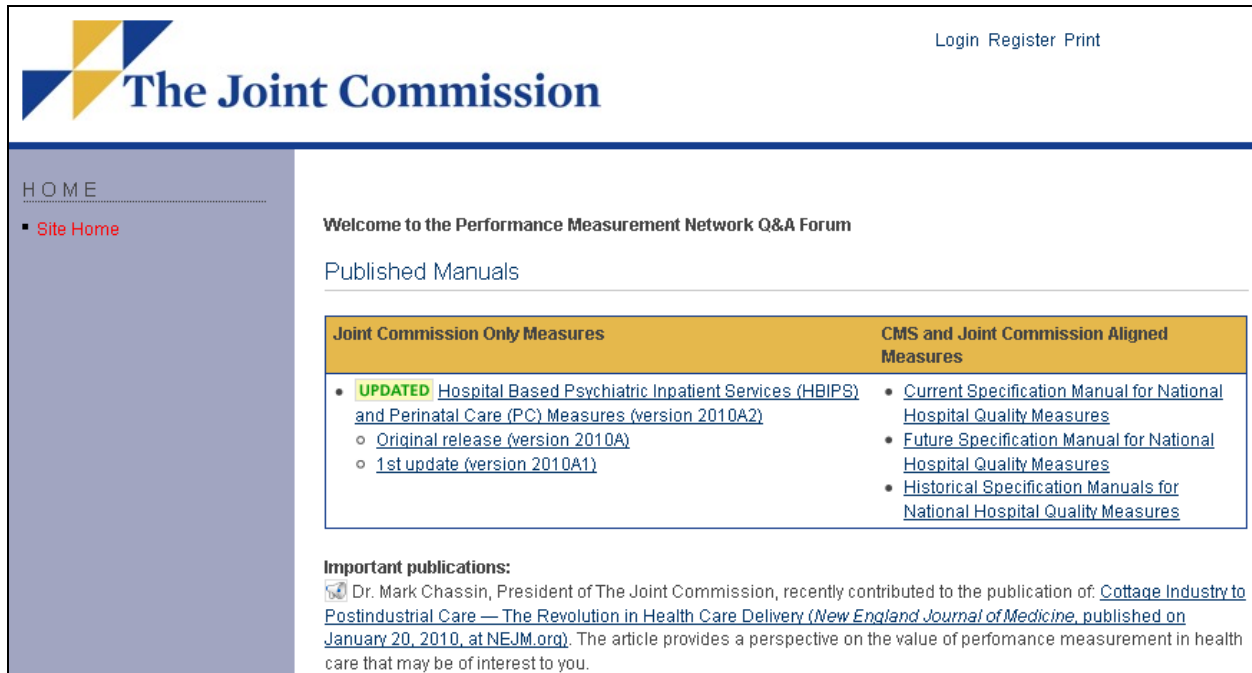
ICD-9-CM Diagnosis and Procedure Code Tables

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

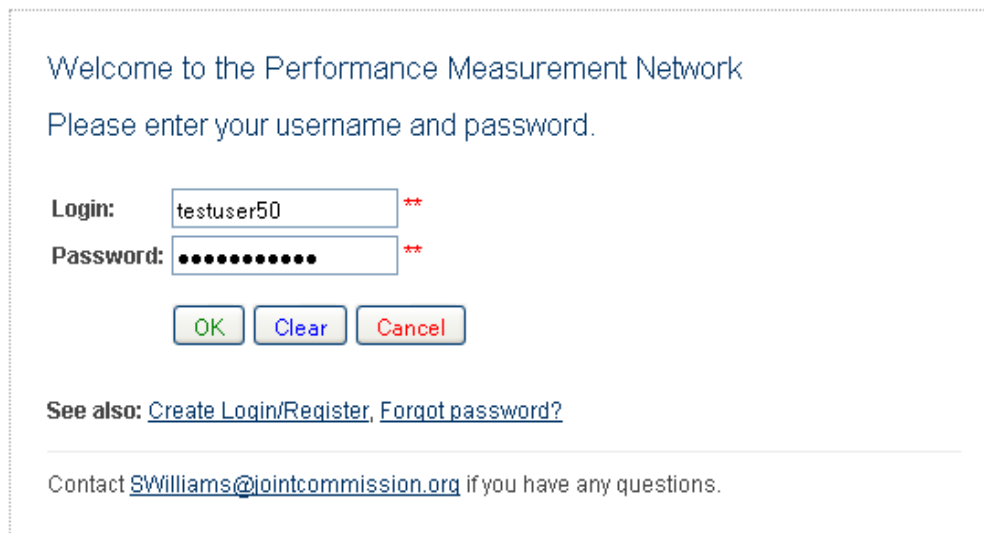
How to Log In and Get Started

- 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.



The screenshot shows the homepage of The Joint Commission. At the top left is the logo, and at the top right are links for "Login", "Register", and "Print". A navigation menu on the left includes "HOME" and "Site Home". The main content area features a "Welcome to the Performance Measurement Network Q&A Forum" and a "Published Manuals" section. This section is divided into two columns: "Joint Commission Only Measures" and "CMS and Joint Commission Aligned Measures". The "Joint Commission Only Measures" column lists an "UPDATED Hospital Based Psychiatric Inpatient Services (HBIPS) and Perinatal Care (PC) Measures (version 2010A2)" with sub-links for "Original release (version 2010A)" and "1st update (version 2010A1)". The "CMS and Joint Commission Aligned Measures" column lists "Current Specification Manual for National Hospital Quality Measures", "Future Specification Manual for National Hospital Quality Measures", and "Historical Specification Manuals for National Hospital Quality Measures". Below this is an "Important publications:" section with a link to a Dr. Mark Chassin article in the *New England Journal of Medicine*.

- 3) Enter your Login and Password and click “ok”.



The screenshot shows a login form titled "Welcome to the Performance Measurement Network". It asks the user to "Please enter your username and password." There are two input fields: "Login:" with the text "testuser50" and "Password:" with masked characters. Both fields have a double asterisk (**) to the right. Below the fields are three buttons: "OK", "Clear", and "Cancel". At the bottom, there is a link "See also: [Create Login/Register](#), [Forgot password?](#)" and a contact email "Contact SWilliams@jointcommission.org if you have any questions."

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.



The screenshot shows the top of a web page for The Joint Commission. The logo is on the left, and the text "The Joint Commission" is in the center. In the top right corner, it says "Test User 50". Below the logo, there is a navigation menu with three items: "Site Home", "Post a question", and "Blood Mgmt Project". The "Blood Mgmt Project" link is circled in red. To the right of the navigation menu, there is a welcome message: "Welcome TestUser50! to the Performance Measurement Network Q&A Forum". Below the welcome message, there is a section titled "On this Page" with three links: "Published Manuals", "Ask a Question", and "Search for Frequently Asked Questions".

- 5) You are now on the Blood Management Project Page. You will see your hospital(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.



The screenshot shows the "Blood Mgmt Project" page. The logo is on the left, and the text "The Joint Commission" is in the center. In the top right corner, it says "Test User 50 Logout Print". Below the logo, there is a navigation menu with three items: "Site Home", "Post a question", and "Blood Mgmt Project". The "Blood Mgmt Project" link is highlighted in red. To the right of the navigation menu, there is a section titled "Web Home for Blood Management Project". Below this, there is a section titled "Your Hospitals:" with one link: "Sample Staff Hospital - Smalltown, NC". Below the hospitals section, there is a section titled "Blood Management Project Help, News and Announcements" with one link: "Measures and Data Dictionary". At the bottom, there is a message: "If you have any questions, contact Harriet Gammon".

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.



Test User 50 Logout Print
Edit Attach Move Raw Diff More

BLOODMGMTPROJ

- Site Home
- Post a question
- Blood Mgmt Project

Sample Staff Hospital

333 Somewhere Place, Smalltown, NC 28605
Health Care Organization ID: 44444
Contact Person: Pleasant Contact
Phone: (828) 260-5555
Email: someone@smalltown.us

Submitted Data

[Show all Records \(including complete\)](#)

UBCI	Birthdate	Admitted	Discharged	Completed 7
333333	03-03-1983	02-02-2010	02-05-2010	<input type="checkbox"/>
333331	05-01-2001	01-01-2010	01-10-2010	<input type="checkbox"/>
333334	05-01-2001	01-01-2010	01-10-2010	<input type="checkbox"/>
333332	03-03-1983	02-02-2010	02-05-2010	<input type="checkbox"/>
333335	05-01-2001	01-01-2010	01-10-2010	<input type="checkbox"/>
1234567	12-30-2008	01-26-2010	02-02-2010	<input type="checkbox"/>
2223	05/01/01	01/01/10	01/10/10	<input type="checkbox"/>
333336	03-03-1983	02-02-2010	02-05-2010	<input type="checkbox"/>

[Enter New Client Record](#)

Import Data

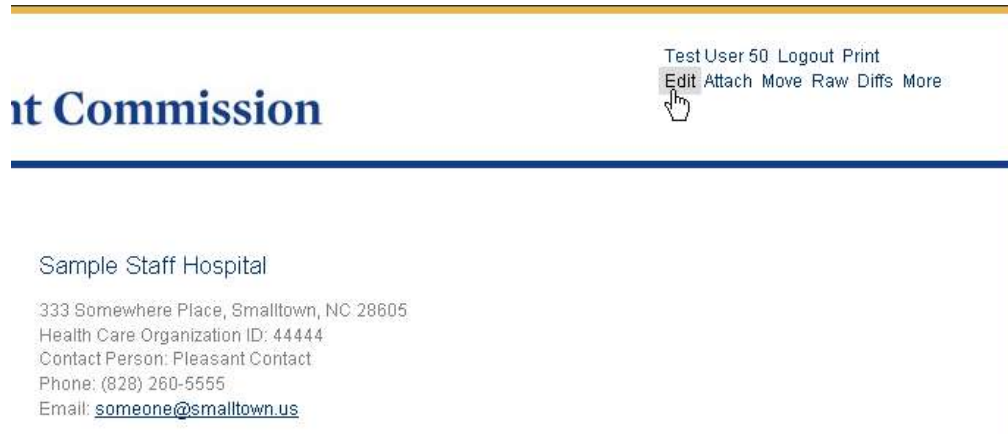
Steps for importing base data set using a properly formatted Excel spreadsheet:

1. Save the file that is to be imported with the EXACT Name: "import.xls".
2. Click the link: [Import](#) and follow the instructions to select and upload your "import.xls" file.
3. Once you have uploaded the file, [Click here](#) to finish the upload process.

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.

The screenshot shows a form with a yellow background for the labels. The form fields are as follows:

Address:	333 Somewhere Place
City:	Smalltown
State:	NC
Zip Code:	28605
Contact Person:	Pleasant Contact
Contact Phone:	(828) 260-5555
Contact Email:	someone@smalltown.us

At the bottom of the form, there are five buttons: 'Save', 'Save and Continue', 'Preview', 'Change form', and 'Cancel'. A mouse cursor is hovering over the 'Save' button.

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.

Import Data

Steps for importing base data set using a properly formatted Excel spreadsheet:

1. Save the file that is to be imported with the EXACT Name: “import.xls”.
2. Click the link [Import](#) and follow the instructions to select and upload your “import.xls” file.
3. Once you have uploaded the file, [Click here](#) to finish the upload process.
 - a. Once the import has been completed, you will need to click your web browser's "Back" button and then "Refresh" the web page before you will see your new data records.

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)

Attach file to Sample Staff Hospital

 Create a link to the attached file at the end of the topic.' and 'Hide file: Hide attachment in normal topic view.' At the bottom, there are three buttons: 'Upload file' (circled in red), 'Show all attachments', and 'Cancel'."/>

File: G:\1 Web Activities\Wiki\Blood Management Impo

Comment:

Link: Create a link to the attached file at the end of the topic.

Hide file: Hide attachment in normal topic view.

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.


Import Data

Steps for importing base data set using a properly formatted Excel spreadsheet:

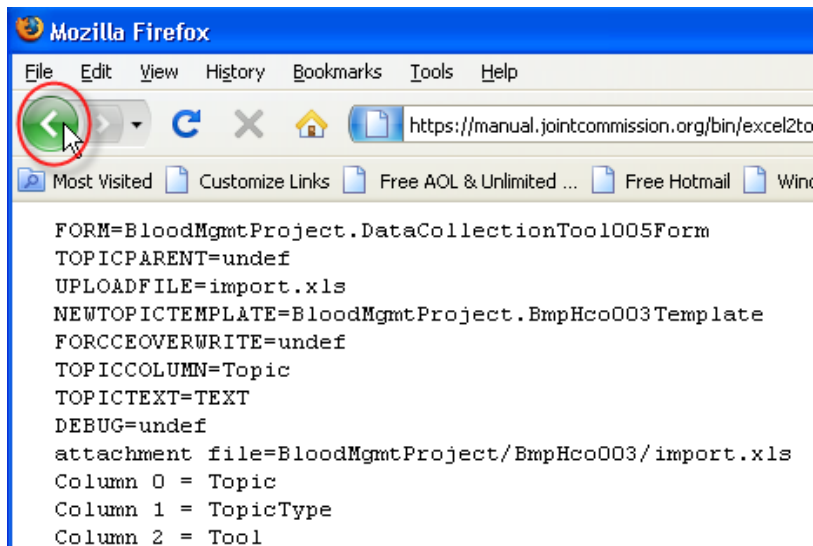
1. Save the file that is to be imported with the EXACT Name: “import.xls”.
2. Click the link: [Import](#) and follow the instructions to select and upload your “import.xls” file.
3. Once you have uploaded the file, [Click here](#) to finish the upload process.
 - a. Once the import has been completed, you will need to click your web browser's "Back" button and then "Refresh" the web page before you will see your new data records.

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).

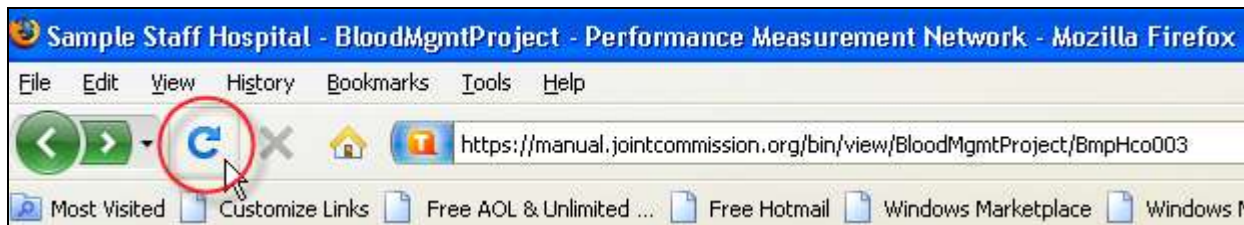
Navigating the Blood Management Project Data Collection Tool

Attachments ▾					
Attachment	Action	Size	Date	Who	
 import.xls	props, move	55.0 K	22 Feb 2010 - 08:20	ScottWilliams	
Monday 2/22 test of import					

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 be 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	<input type="checkbox"/>
333331	05-01-2001	01-01-2010	01-10-2010	<input type="checkbox"/>
555555	04-04-1974	07-04-2009	07-07-2009	<input type="checkbox"/>
333332	03-03-1983	02-02-2010	02-05-2010	<input type="checkbox"/>
333335	05-01-2001	01-01-2010	01-10-2010	<input type="checkbox"/>
1234567	12-30-2008	01-26-2010	02-02-2010	<input type="checkbox"/>
2223	05/01/01	01/01/10	01/10/10	<input type="checkbox"/>
333336	03-03-1983	02-02-2010	02-05-2010	<input type="checkbox"/>
555556	12-09-1970	08-08-2009	08-12-2009	<input type="checkbox"/>

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.

Draft Data Collection Tool

Unique Blinded Case Identifier: ⓘ

Admission Date: MM-DD-YYYY ⓘ

Birthdate: MM-DD-YYYY ⓘ

Discharge Date: MM-DD-YYYY ⓘ

Discharge Status: ⓘ

Sex: M F U ⓘ

ICD-9-CM Principal Diagnosis Code: ⓘ

ICD-9-CM Other Diagnosis Codes

ICD-9-CM Other Diagnosis Codes: ⓘ [Add another response](#)

ICD-9-CM Principal Procedure Code: ⓘ

ICD-9-CM Principal Procedure Date: ⓘ

ICD-9-CM Other Procedure Codes/Date

ICD-9-CM Other Procedure Codes: ⓘ

ICD-9-CM Other Procedure Dates: ⓘ [Add another response](#)

Elective Surgery: 1 2 ⓘ

Transfusion Consent: 1 2 3 ⓘ

Education Addressed Risks, Benefits And Alternatives To Transfusion: 1 2 ⓘ

Preoperative Blood Type Testing: Y N ⓘ

Preoperative Anemia Screening: 1 2 3 ⓘ

Preoperative Anemia Screening Date: MM-DD-YYYY or UTD ⓘ

Anesthesia Start Date: ⓘ


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:







[Show all Records \(including complete\)](#)

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

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”

Navigating the Blood Management Project Data Collection Tool

Show incomplete Records Only

UBCI	Birthdate	Admitted	Discharged	Completed 
333333	03-03-1983	02-02-2010	02-05-2010	<input type="checkbox"/>
333331	05-01-2001	01-01-2010	01-10-2010	<input type="checkbox"/>
555555	04-04-1974	07-04-2009	07-07-2009	<input type="checkbox"/>
333332	03-03-1983	02-02-2010	02-05-2010	<input type="checkbox"/>
1234567	12-30-2008	01-26-2010	02-02-2010	<input type="checkbox"/>
333335	05-01-2001	01-01-2010	01-10-2010	<input type="checkbox"/>
333336	03-03-1983	02-02-2010	02-05-2010	<input type="checkbox"/>
2223	05/01/01	01/01/10	01/10/10	<input type="checkbox"/>
555556	12-09-1970	08-08-2009	08-12-2009	<input type="checkbox"/>
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) 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.

Navigating the Blood Management Project Data Collection Tool

234567	12-30-2008	01-26-2010	02-02-2010
<input type="checkbox"/> General and other patient-level data elements			

Discharge Status 01			

Sex M			

ICD-9-CM Principal Diagnosis Code 49301			

ICD-9-CM Other Diagnosis Codes			

ICD-9-CM Principal Procedure Code 7301			

ICD-9-CM Principal Procedure Date 01-25-2010			

ICD-9-CM Other Procedure Codes			

ICD-9-CM Other Procedure Dates			

Transfusion Consent			

Education Addressed Risks, Benefits and Alternatives to Transfusion			

Elective Surgery			

Anesthesia Start Date			

Preoperative Anemia Screening Date			

Preoperative Anemia Screening			

Preoperative Blood Type Testing			

<input type="checkbox"/> Measure Set Specific Data Elements			
<input type="checkbox"/> RBC Event(s)			
<input type="button" value="Add RBC Event record (3 left)"/>			
<input type="checkbox"/> Plasma Event(s)			
<input type="button" value="Add Plasma Event record (3 left)"/>			
<input type="checkbox"/> Platelet Event(s)			
<input type="button" value="Add Platelet Event record (3 left)"/>			

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

1234567	12-30-2008	01-26-2010	02-02-2010
<input type="checkbox"/> General and other patient-level data elements			

Discharge Status 01			

Sex M			

ICD-9-CM Principal Diagnosis Code 49301			

ICD-9-CM Other Diagnosis Codes			

ICD-9-CM Principal Procedure Code 7301			

ICD-9-CM Principal Procedure Date 01-25-2010			


ICD-9-CM Other Procedure Codes			


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


▼ Form Data ► Permissions


Draft Data Collection Tool


Unique Blinded Case Identifier 


Admission Date MM-DD-YYYY 

Birthdate 


Discharge Date 

Discharge Status 

Sex M F U 

ICD-9-CM Principal Diagnosis Code 

ICD-9-CM Other Diagnosis Codes

ICD-9-CM Other Diagnosis Codes 

Save Save and Continue Preview Change form Cancel New Revision

Navigating the Blood Management Project Data Collection Tool

Add RBC Events and BM Unit Level Data Elements

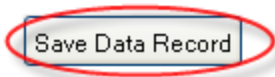
a) To add a RBC event (NOTE: you can add up to three RBC events), click on the “Add RBC Event Record” Link.



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

The screenshot shows a form titled 'RBC Event' with the following fields and controls:

- RBC Event ID: Radio buttons for 1 (selected), 2, and 3.
- RBC Event Total Doses: A text input field.
- Clinical Indication For RBCs: A dropdown menu with 'Select...' and a downward arrow.
- Pre-transfusion Hemoglobin: A text input field.
- Pre-transfusion Hematocrit: A text input field.
- Surgical Procedure: Radio buttons for 1 and 2.



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)

Navigating the Blood Management Project Data Collection Tool

333331 05-01-2001 01-01-2010 01-10-2010

- General and other patient-level data elements
- Measure Set Specific Data Elements
 - RBC Event(s)
 - RBC Event 1**
 - RBC Event ID 1
 - RBC Event Total Doses 2
 - Clinical Indication for RBCs 1
 - Pre-transfusion Hemoglobin 8
 - Pre-transfusion Hematocrit 21
 - Surgical Procedure 1
 - BM Unit Level Data Elements(s)**
 - [Add BM Unit Level Data Elements record \(3 left\)](#)
 - [Add RBC Event record \(2 left\)](#)
 - Plasma Event(s)
 - [Add Plasma Event record \(3 left\)](#)
 - Platelet Event(s)
 - [Add Platelet Event record \(3 left\)](#)

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

BM Unit Level Data Elements

Transfusion Start Date		<input type="text"/>
Transfusion Start Time		<input type="text"/>
Transfusion Order		<input type="radio"/> Y <input type="radio"/> N
Patient ID Verification		<input type="radio"/> 1 <input type="radio"/> 2
Vital Sign Monitoring		<input type="radio"/> 1 <input type="radio"/> 2

[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

333331 05-01-2001 01-01-2010 01-10-2010

- ⊕ General and other patient-level data elements
- ⊖ Measure Set Specific Data Elements
 - ⊖ RBC Event(s)
 - ⊖ RBC Event 1
 - RBC Event ID 1
 - RBC Event Total Doses 2
 - Clinical Indication for RBCs 1
 - Pre-transfusion Hemoglobin 8
 - Pre-transfusion Hematocrit 21
 - Surgical Procedure 1
 - ⊖ BM Unit Level Data Elements(s)
 - ⊖ BM Unit Level Data Elements 1
 - Transfusion Start Date 03-03-2010
 - Transfusion Start Time 11:00
 - Transfusion Order Y
 - Patient ID Verification 1
 - Vital Sign Monitoring 1
 - [Add BM Unit Level Data Elements record \(2 left\)](#) ←
 - [Add RBC Event record \(2 left\)](#) ←
 - ⊖ Plasma Event(s)
 - [Add Plasma Event record \(3 left\)](#)
 - ⊖ Platelet Event(s)
 - [Add Platelet Event record \(3 left\)](#)

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

333331 05-01-2001 01-01-2010 01-10-2010

- ⊕ General and other patient-level data elements
- ⊖ Measure Set Specific Data Elements
 - ⊖ RBC Event(s)
 - [Add RBC Event record \(3 left\)](#)
 - ⊖ Plasma Event(s)
 - [Add Plasma Event record \(3 left\)](#)
 - ⊖ Platelet Event(s)
 - [Add Platelet Event record \(3 left\)](#)

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

Plasma Event

Plasma Event ID 1 2 3

Plasma Event Total Doses

Clinical Indication For Plasma

Pre-transfusion Laboratory Testing 1 2 3 4 5

Save Data Record

Navigating the Blood Management Project Data Collection Tool

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)

333331 05-01-2001 01-01-2010 01-10-2010

- General and other patient-level data elements
- Measure Set Specific Data Elements
 - RBC Event(s)
 - Plasma Event(s)
 - Plasma Event 1
 - Plasma Event ID 1
 - Plasma Event Total Doses 2
 - Clinical Indication for Plasma 1
 - Pre-transfusion Laboratory Testing 2
 - BM Unit Level Data Elements(s)
 - Add BM Unit Level Data Elements record (3 left)
 - Add Plasma Event record (2 left)
 - Platelet Event(s)
 - Add Platelet Event record (3 left)

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



BM Unit Level Data Elements


Transfusion Start Date	<input type="text"/>
Transfusion Start Time	<input type="text"/>
Transfusion Order	<input type="radio"/> Y <input type="radio"/> N
Patient ID Verification	<input type="radio"/> 1 <input type="radio"/> 2
Vital Sign Monitoring	<input type="radio"/> 1 <input type="radio"/> 2



Navigating the Blood Management Project Data Collection Tool

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”.

333331 05-01-2001 01-01-2010 01-10-2010

- [-] General and other patient-level data elements 
- [-] Measure Set Specific Data Elements
 - [-] RBC Event(s)
 - [-] Plasma Event(s)
 - [-] Plasma Event 1 

Plasma Event ID	1
Plasma Event Total Doses	2
Clinical Indication for Plasma	1
Pre-transfusion Laboratory Testing	2
 - [-] BM Unit Level Data Elements(s)
 - [-] BM Unit Level Data Elements 1 

Transfusion Start Date	03-03-2010
Transfusion Start Time	11:00
Transfusion Order	Y
Patient ID Verification	1
Vital Sign Monitoring	1
 - [Add BM Unit Level Data Elements record \(2 left\)](#) 
 - [Add Plasma Event record \(2 left\)](#) 
 - [-] Platelet Event(s)
 - [Add Platelet Event record \(3 left\)](#)

**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”

Platelet Event

Platelet Event ID 1 2 3

Platelet Event Total Doses

Clinical Indication For Platelets

Pre-transfusion Platelet Count

Pre-transfusion Platelet Testing 1 2

Save Data Record

Navigating the Blood Management Project Data Collection Tool

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)

333331 05-01-2001 01-01-2010 01-10-2010

- ⊕ General and other patient-level data elements
- ⊖ Measure Set Specific Data Elements
 - ⊕ RBC Event(s)
 - ⊕ Plasma Event(s)
 - ⊖ Platelet Event(s)
 - ⊖ Platelet Event 1
 -
 - Platelet Event ID 1
 -
 - Platelet Event Total Doses 3
 -
 - Clinical Indication for Platelets 1
 -
 - Pre-transfusion Platelet Count 100
 -
 - Pre-transfusion Platelet Testing 1
 -
 - ⊖ BM Unit Level Data Elements(s)
 - [Add BM Unit Level Data Elements record \(3 left\)](#)
 - [Add Platelet Event record \(2 left\)](#)

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

BM Unit Level Data Elements

Transfusion Start Date

Transfusion Start Time

Transfusion Order Y N

Patient ID Verification 1 2

Vital Sign Monitoring 1 2

[Save Data Record](#)

Navigating the Blood Management Project Data Collection Tool

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”.

333331 05-01-2001 01-01-2010 01-10-2010

- ⊕ General and other patient-level data elements
- ⊖ Measure Set Specific Data Elements
 - ⊕ RBC Event(s)
 - ⊕ Plasma Event(s)
 - ⊖ Platelet Event(s)
 - ⊖ Platelet Event 1

Platelet Event ID	1
Platelet Event Total Doses	3
Clinical Indication for Platelets	1
Pre-transfusion Platelet Count	100
Pre-transfusion Platelet Testing	1
 - ⊖ BM Unit Level Data Elements(s)
 - ⊖ BM Unit Level Data Elements 1

Transfusion Start Date	03-03-2010
Transfusion Start Time	11:00
Transfusion Order	Y
Patient ID Verification	1
Vital Sign Monitoring	1
 - [Add BM Unit Level Data Elements record \(2 left\)](#)
 - [Add Platelet Event record \(2 left\)](#)

Navigating the Blood Management Project Data Collection Tool

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	<input type="checkbox"/>
333331	05-01-2001	01-01-2010	01-10-2010	<input type="checkbox"/>
555555	04-04-1974	07-04-2009	07-07-2009	<input type="checkbox"/>
333332	03-03-1983	02-02-2010	02-05-2010	<input type="checkbox"/>
333335	05-01-2001	01-01-2010	01-10-2010	<input checked="" type="checkbox"/>
1234567	12-30-2008	01-26-2010	02-02-2010	<input type="checkbox"/>
2223	05/01/01	01/01/10	01/10/10	<input type="checkbox"/>
333336	03-03-1983	02-02-2010	02-05-2010	<input type="checkbox"/>
555556	12-09-1970	08-08-2009	08-12-2009	<input type="checkbox"/>

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	<input type="checkbox"/>
333331	05-01-2001	01-01-2010	01-10-2010	<input type="checkbox"/>
555555	04-04-1974	07-04-2009	07-07-2009	<input type="checkbox"/>
333332	03-03-1983	02-02-2010	02-05-2010	<input type="checkbox"/>
1234567	12-30-2008	01-26-2010	02-02-2010	<input type="checkbox"/>
333335	05-01-2001	01-01-2010	01-10-2010	<input type="checkbox"/>
333336	03-03-1983	02-02-2010	02-05-2010	<input type="checkbox"/>
2223	05/01/01	01/01/10	01/10/10	<input type="checkbox"/>
555556	12-09-1970	08-08-2009	08-12-2009	<input type="checkbox"/>
333334	05-01-2001	01-01-2010	01-10-2010	<input checked="" type="checkbox"/>
99999999	01-01-1901	11-11-2010	11-15-2010	<input checked="" type="checkbox"/>
4445	03/03/83	02/02/10	02/05/10	<input checked="" type="checkbox"/>
444555	03/03/83	02/02/10	02/05/10	<input checked="" type="checkbox"/>
2224	05/01/01	01/01/10	01/10/10	<input checked="" type="checkbox"/>

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.

To...	Gammon, Harriet
Cc...	
Subject:	Request to unlock record BloodMgmtProject/RecBmpHco003C333334L0D40188

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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