

Variability in Transfusion Practice – Beyond Cardiac Surgery

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Background:

Information about variability in procedure-specific transfusion practice demonstrates that transfusion decisions are infrequently evidence-based. Actionable data helps enlist provider's participation in improving practice. While the data for patients having coronary artery bypass surgery is well known, there is little available information regarding transfusion rates and blood utilization (units used for both transfused and untransfused patients) for other common surgical procedures.

Methods:

We queried a proprietary blood management business intelligence portal (IMPACT® Online, Haemonetics, Braintree, MA) and identified 9 non-cardiac procedures associated with substantial red cell (RBC) transfusions. For each procedure, we determined the mean RBC transfusion and utilization rate for the entire hospital stay as well as the standard deviation (SD) of those rates among the participating hospitals (those that contributed at least 20 patients to each data set).

Conclusions:

Disparities in the use of RBC occur in a wide variety of procedures. These data show that variability in transfusion practice is not limited to CABG patients. When combined with hospital-specific and surgeon-specific information, demonstrating this variability is an important tool for modifying practice.

Results:

- There was substantial variation for each of the procedures. This was most prominent in patients having orthopedic and urologic procedures as compared to those having general and thoracic surgery.
- For those hospitals performing >500 of each orthopedic procedure, transfusion rates varied as follows: primary knee replacement: 6-32%; primary hip replacement: 11-41%; spinal fusion: 11-52%.
- For urologic surgery, the rate in hospitals with >300 kidney transplants varied between 21 and 79% and the rate for hospitals performing >50 radical cystectomies was 39-69%.
- For partial small bowel resection, rates at hospitals performing >500 procedures was 34-50%; at those doing >50 Whipple operations the rate was 26-69% and for those doing >50 partial hepatectomies, the frequency was 27-47%.
- For pulmonary lobectomy the variation was less with hospitals performing >100 operations ranging between 18 and 24%.

	Patients	Hospitals	Transfusion Rate Mean (%) ± SD	Utilization (RBC units/patient) ± SD
Primary Knee Replacement	31,305	32	17 ± 12	0.35 ± 0.28
Primary Hip Replacement	19,951	29	26 ± 13	0.67 ± 0.35
Spinal Fusion	9,099	24	25 ± 10	0.69 ± 0.47
Kidney Transplant	2,207	5	47 ± 20	1.58 ± 0.75
Radical Cystectomy	593	9	58 ± 17	2.59 ± 0.96
Whipple	1,298	8	44 ± 15	2.00 ± 0.90
Partial Hepatectomy	1,194	10	33 ± 7	1.44 ± 1.01
Partial Small Bowel Resection	6,067	25	43 ± 9	2.22 ± 1.11
Pulmonary Lobectomy	1,515	17	20 ± 6	0.84 ± 0.57