

## **Intraoperative Transfusion Of 1 U To 2 U Packed Red Blood Cells Is Associated With Increased 30-Day Mortality, Surgical-Site Infection, Pneumonia, And Sepsis In General Surgery Patients**

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**BACKGROUND:** Transfusion of packed red blood cells (PRBCs) increases morbidity and mortality in select surgical specialty patients. The impact of low-volume, leukoreduced RBC transfusion on general surgery patients is less well understood. **STUDY DESIGN:** The American College of Surgeons National Surgical Quality Improvement Program participant use file was queried for general surgery patients recorded in 2005 to 2006 (n = 125,223). Thirty-day morbidity (21 uniformly defined complications) and mortality, demographic, preoperative, and intraoperative risk variables were obtained. Infectious complications and composite morbidity and mortality were stratified across intraoperative PRBCs units received. Multivariable logistic regression was used to assess influence of transfusion on outcomes, while adjusting for transfusion propensity, procedure type, wound class, operative duration, and 30+ patient risk factors. **RESULTS:** After adjustment for transfusion propensity, procedure group, wound class, operative duration, and all other important risk variables, 1 U PRBCs significantly (p < 0.05) increased risk of 30-day mortality (odds ratio [OR] = 1.32), composite morbidity (OR = 1.23), pneumonia (OR = 1.24), and sepsis/shock (OR = 1.29). Transfusion of 2 U additionally increased risk for these outcomes (OR = 1.38, 1.40, 1.25, 1.53, respectively; p < or= 0.05) plus surgical-site infection (OR = 1.25; p < 0.05). A risk index for calculating transfusion likelihood demonstrated very good discrimination (c-index = 0.844). **CONCLUSIONS:** Intraoperative transfusion of PRBCs increases risk for mortality and several morbidities in general surgery patients. These risks, substantial for even 1 U, remain after adjustment for transfusion propensity and numerous risk factors available in the American College of Surgeons National Surgical Quality Improvement Program. Transfusion for mildly hypovolemic or anemic patients should be discouraged in light of these risks.