Reviewer's report

Title: Racial Disparities in the Use of Blood Transfusion in Major Surgery

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Reviewer: Amresh Hanchate

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While commonly used for major surgery, blood transfusion increases risk of post-surgical complications and death. Based on this premise, this study compares the rate of use of blood transfusion by race, adjusting for patient risk factors. Using an administrative database covering a majority (N=87) of nation’s academic medical centers, the study examines patients receiving one of three procedures: CABG, total hip replacement and colectomy. It also examines if racial differences in blood transfusion rates are due to systematic hospital-level (between-hospital) differences, or prevail generally at all hospitals (i.e., within-hospital differences). The main finding is that blacks receive blood transfusions at a higher rate than whites (for CABG and hip replacement) and that these differences are robust to patient differences and between-hospital effects.

Major issues

1. Why is perioperative blood transfusion important an important marker? This question has not been adequately motivated. As the first study to examine racial differences in blood transfusion rates (authors’ claim), this is an important question. And what is this a marker of? Quality? Are there formal or informal guidelines for use of perioperative blood transfusion? Is it true that generally that higher rate of perioperative blood transfusion is a sign of poorer quality of care?

2. The claim: “Our findings … pinpoint the main cause of such disparities – discrimination … during the clinical encounter.” seems premature, since the authors provide no compelling motivation for why providers may favor using blood transfusion for one subgroup of patients over another. The authors recognize that the “decision to transfuse a patient can be complex and can involve more than one physician..” It is unclear that a model that adjusts for comorbidities identified in ICD-9 diagnosis codes, is adequate for capturing this complexity. From Table 1 it is apparent that there may be systematic differences by race in sex composition (CABG), age (hip replacement) and proportion of emergent (non-elective) admission (CABG and colectomy).

3. As identification of race is critical, it is important to provide the overall distribution of the race field. Is race identified as white or black in 100% of cases? What are the other values of this field? Specifically, how often is race unknown or missing, and how does this rate vary by hospitals? If some hospitals have high missingness of race, should they be included in the study?
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests