Reviewer's report

Title: Missed Opportunities: Racial and Neighborhood Socioeconomic Disparities in Emergency Colorectal Cancer Diagnosis and Surgery

Version: 1 Date: 10 January 2014

Reviewer: Amanda Arrington

Reviewer's report:

Dear Editor-in-Chief:

Thank you for sending me the manuscript entitled “Missed Opportunities: Racial and Neighborhood Socioeconomic Disparities in Emergency Colorectal Cancer Diagnosis and Surgery” by Pruitt et al to review. The authors evaluate outcomes, including screening and mortality in patients who they define as having an emergency diagnosis of colorectal cancer or emergency surgery. This retrospective study of SEER-Medicare data makes several assumptions that can skew the findings. I have multiple concerns and questions regarding this study:

Major Compulsory Revisions

1. Within the methods of the study, the authors identified specific ICD9 codes/diagnoses that are excluded from the study criteria. However, the exact nature of this study's Inclusion Criteria is not as defined. For example, an emergency inpatient admission may be directly related to other co-morbidities or factors such as trauma, uncontrolled diabetes, chest pain, or hypertension and only incidentally related to a diagnosis of cancer during that admission as part of the entire evaluation. It is unclear whether the authors accounted for these cases. If not, this would be a significant limitation of the study. Due to the variation in what is considered an 'emergency diagnosis', the emphasis of the study should be on 'emergency surgeries' instead. Given that 'emergency surgeries' will have fewer potential variables to acknowledge

2. Yet another limitation that must be accounted is the determination of SES by looking at the poverty rate of the particular census tract. Living in an area with higher poverty rates does not directly indicate what SES a specific patient is from.

3. The authors should define what how the census tracts are determined within the methods.

4. The statistical analysis is quite difficult to understand in its entirety and needs further explanation. The empty model does not make sense and, in my view, weakens the impact of the analysis. In a covariate (or multivariate analysis), one is looking at the impact of independent variables on defined dependent variables. In my understanding of the ‘empty model’, there are no independent variables analyzed. If this is the case, then the variance and median odds ratio are incorrectly labeled and/or are not relevant to this ‘empty model’.
Minor Essential Revisions
1. There are several grammatical errors and language error that should be revised.

Therefore, I recommended you to consider this manuscript after authors have made these revisions and pending statistical review.

Best Wishes,

Sincerely Yours,
Amanda K Arrington, MD

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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

Declaration of competing interests:
I declare that I have no competing interests.