Michael Andreae, MD

Department of Anesthesiology
Montefiore Medical Center
Albert Einstein College of Medicine
111 E 210th St, Bronx, NY 10467
Tel: (+1) 917 583 4864
Fax: (+1)718 920 4327

Email: mhandreae@gmail.com

RE: Manuscript Submission

"Utilization of Antiemetic Medication as a Marker of Healthcare Disparities in Anesthesia A Bayesian Hierarchical Model Using the National Anesthesia Clinical Outcomes Registry."

Dear Editor,

Healthcare disparities are a major concern in the US, but have rarely been studied in anesthesia. We investigated utilization of antiemetic medication, the sole domain of anesthesiologists. We demonstrated that insurance status or median income predict antiemetic utilization, pointing to hitherto unappreciated, but worrisome healthcare disparities in anesthesia at the provider level. Even those who do not accept antiemetic utilization as a valid indicator of anesthesia quality will have to concede that disparities in antiemetic prophylaxis due to insurance or socioeconomic status are worrisome in their own right.

Several aspect that makes our work stand out, besides the clinical significance for the anesthesia community and the societal importance of perioperative healthcare disparities, among them our cutting edge statistical approach, the size of the dataset studied (NACOR) and the robustness of our findings: Beyond bivariate analysis, stratified analysis and logistic regression, we used hierarchical mixed effects Bayesian models, difficult to fit with conventional software. (We therefore recommend that our manuscript be reviewed also by experts familiar with Bayesian

hierarchical modeling. We proposed a few reviewers, because this expertise is still rare.) Our findings are invariant to the statistical approach and the subset of cases in the NACOR dataset we used, pointing to the robustness of the association between socioeconomic status and antiemetic administration.

With a pre-specified hypothesis and a detailed description of our analysis approach [before we had access to the data], with a transparent description of missingness and methods, we followed best practices (attached STROBE checklist). However, we propose to relegate some detail (of the results) and the comprehensive statistical description of our many hierarchical models and its computational implementation in Rstan to the supplement. **We will follow your lead as to how much detail you want to provide online for transparency**.

We hope you find our manuscript as informative as succinct as we intended it.

We look forward to your feedback.

Yours Truly

Michael Andreae

PS: None of our authors have any conflicts of interests to declare. Our work falls under the NIH public access policy.