

**Title: Understanding the Cognition and Decision Making of Community Anesthesiologists
NCT #04195178**

Date: September 16, 2025

Statistical Analysis Plan for the Survey data

Demographic and clinical practice characteristics of our survey will be collated and presented as mean \pm SD (range) where applicable (**Table 1**). A multivariate regression will be performed to identify any significant ($p < 0.05$) differences between the three participant cohorts – all those who answer the survey, all those who are interviewed, and those who are eligible to be interviewed but declined.

We will calculate the difference between accuracy and confidence and then use a Welch's two-sample t-test to assess whether mean reported confidence differed between respondents who answered each question correctly versus incorrectly. For each question, the difference in group means and the associated 95% confidence interval will be reported. In a more rigorous comparison of accuracy vs. confidence, we will perform a bootstrap analysis. We will also create calibration curves (between accuracy and confidence) as described by Naguib et al, 2022. For this, we will assume that, for a given population, the proportion of respondents answering correctly should reflect the average confidence within that population.

We will then create an ordinal logistic regression model to explore which participant variables is associated with greater correctness or confidence. Participant age, sex, individual case workload (frequently vs infrequently), current enrollment in MOCA, practice type (academic vs community) and whether the participant has access to a Quantitative Neuromuscular Blockade Monitor will be modeled as predictors. Results will be presented as odds ratios (OR) and 95% confidence intervals (CI).

The participants' responses to the hazardous attitudes survey will be compared between the hazardous attitudes responses of all survey participants with interview eligible participants, those who are interviewed and those from a prior survey on hazardous attitudes among academic anesthesiologists who participated in a high-fidelity simulation study. We will create a separate regression model, analogous the one described above, to examine which possible predictor variables are associated with the presence of one or more hazardous attitudes of concern.

Finally, we will use a binomial generalized linear mixed model with a logit link indexed by participant ID. Up to 9 questions (one for each question answered) will be modeled as a repeating binary outcome. Along with age, sex and practice type (academic vs. community), the total score for each of the six HA domains will be included as predictors.