Automated Decision Support for Anesthesia Provider Relief: An Initial Survey and Implementation Report

Presenting Author: Jonathan P. Wanderer, MD, MPhil, Vanderbilt University, Departments of Anesthesiology and Biomedical Informatics

Co-Authors: Leslie C. Fowler, M.Ed; Stephanie Reed, MD; Jesse M. Ehrenfeld, MD, MPH; Matthew D. McEvoy, MD. Vanderbilt University, Department of Anesthesiology

Introduction: Consistently providing equitable relief from clinical duties may be an important element in fostering and maintaining team morale. Achieving this in complex work environments such as academic medical centers can be challenging. Relief decisions could potentially be facilitated by the use of automated tools integrated with anesthesia information management systems (AIMS). We conducted a survey of trainee opinions on such a tool and describe its implementation.

Methods: We surveyed our PGY3-4 anesthesia residents to determine if they currently had adequate information when making relief decisions and understand their preferences in receiving automated decision support to assist with making assignments. In parallel, a system was created to generate daily emails with ranked relief prioritization utilizing information from our AIMS and our staff scheduling system. A multidisciplinary group created a set of guidelines for making relief decisions, which was incorporated into the email.

Results: Thirty-four of the 36 residents contacted completed the survey (94.4% response rate). Of residents providing relief, 60% of residents agreed or strongly agreed that they had adequate information to make equitable relief assignments; however, of residents receiving relief, only 36% agreed or strongly agreed that adequate information was available. Eighty-two percent agreed or strongly agreed that they would like to receive a prioritized relief list, and 85% preferred an automated email over a dashboard or smartphone app. As such, an automated decision support system for anesthesia provider relief was created and deployed (Figure 1).

Conclusions: There is an imbalance between the perceptions of information availability for equitable relief between those making relief decisions and those on the receiving end of those decisions. Residents were in agreement that an automated, prioritized relief list would be useful and preferably delivered by email. Preliminary results suggest that the automated decision support system has been useful, but this requires confirmation with a follow-up survey and analysis of relief data.
Figure 1: Example email from the automated decision support system for anesthesia provider relief.