Improving Compliance with Institutional Performance on Train of Four Monitoring

Authors: P Santapuram, LC Fowler, KV Garvey, MD McEvoy, A Robertson, B Dunworth, K McCarthy, R Freundlich, BFS Allen, MD Kertai (Vanderbilt University)

Train-of-four (TOF) monitoring prevents residual neuromuscular blockade and has been shown to reduce pulmonary complications as well as recovery room length of stay

Routine application of neuromuscular monitoring remained low which represented a gap between clinical practice and research-driven guidelines. A Quality Improvement (QI) Project was created to evaluate TOF monitoring performance and consensus guideline adherence.

REDCap Surveys
Pre- and post-intervention surveys were delivered to participants

MPOG Program
Provider-specific performance reports on TOF monitoring were distributed

QuizTime App
Participants completed daily questions on neuromuscular blockade/reversal and then reviewed related content

Phased Approach
Initially included 25 learners but then expanded to 400 providers. The QI spanned a 6-month period.

Identified Barriers to TOF monitoring:
- Issues with equipment/technology
- Differences in provider preferences
- Frequency of handovers

QI Project Results and Outcomes:
- The combination of RedCap Surveys, MPOG reports, and QuizTime learning improved TOF monitoring from 42% to 70%
- This change reflects a significant increase in delivery of guidance-concordant patient care
- Future studies will focus on sustaining adherence and investigating its impact on the rate of postoperative pulmonary complications