

Implementation of Clinical Guidelines to Reduce Postoperative Nausea and Vomiting in Adult Patients

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Purpose & Background: The quality improvement project site performed approximately 10,000 surgeries per year. According to the literature, 30% to 80% of patients experience postoperative nausea and vomiting (PONV) (Gan et al., 2020; Thomas et al., 2019). The organization previously evaluated PONV as an area to improve patient outcomes. This quality improvement project aimed to decrease the incidence of PONV and provide a standardized process for the care of patients. The purpose of this quality improvement project was to determine if or to what degree the implementation of Gan et al.'s Fourth Consensus Guidelines for the Management of Postoperative Nausea and Vomiting would impact the incidence of postoperative nausea and vomiting when compared to the current practice among adult post-surgical patients in a post-anesthesia care unit in suburban New York over four weeks.

Method: The methodology was quantitative with a quasi-experimental design. The evaluation of the Adult PONV Pharmacy Protocol implementation from Gan et al.'s (2020) Fourth Consensus Guidelines for the Management of Postoperative Nausea and Vomiting provided an opportunity to determine if there was an impact on the incidence of nausea and vomiting. The population sample included adult post-surgical patients. Based on the G*Power analysis, a minimum of $N = 202$, patients needed to be sampled for the project. The total sample was 1199 patients, $n = 647$ in the pre-intervention group and $n = 552$ in the implementation group. The electronic medical record and the Apfel risk score data sources were valid and reliable. Data analysis included descriptive and inferential statistics to characterize the pre and post intervention groups. Data included incidence of PONV, Apfel risk score, type of surgery, anesthesia, age, and gender.

Limitations included using a single site, the potential for a decrease in surgical volume, gaps in documentation of PONV, case mix of patients (inpatients versus outpatient), and staff resistance to change. The validity and reliability of the data were established for the Apfel risk score, and the documentation results audited from the electronic medical record.

Results: The clinical question was answered by analyzing the data obtained from the EMR for the incidence of PONV. The incidence of PONV for the comparative and intervention groups was $n = 70$ (10.82%) and $n = 40$ (7.25%), respectively. A chi-square test of independence was conducted and showed a statistical and clinically significant decrease in PONV from the comparative group ($n = 70$, 10.82%) to the implementation group ($n = 40$, 7.25%), $\chi^2(1, n= 1186) = 4.81$, $p = .028$. Clinical significance was supported by the 3.57% decrease in PONV incidence.

Discussion/Conclusion: Data analysis occurred that answered the clinical question, and there was an improvement in patient outcomes. The incidence of PONV decreased from 10.82% to 7.25%. The improvement in the incidence met the criteria for statistical significance when comparing the comparative and intervention groups, $p = .028$. The results were also clinically significant as they demonstrated the improvement in the incidence of PONV with the change in practice.

Next Steps: Future studies recommended include implementing clinical guidelines for pediatric and obstetrical populations. Another potential project is evaluating adherence to the clinical guidelines and the relationship to the incidence of PONV. Lastly, it is important to continue advance the electronic medical record to improve assessment of the risk for PONV.