

INTRODUCTION

Postoperative nausea and vomiting (PONV) impacts up to 60% of surgical patients annually.⁵ Evidence based guidelines are an important avenue to decrease patient morbidity, mortality, and costs in healthcare.⁶

The **purpose** of this study was to evaluate the relationship between implementing an anesthesia specific guideline to the incidence of PONV and conduct a cost- benefit analysis.

Table 1. Risk Factors defined by American Society of PeriAnesthesia Nurses (ASPAN) PONV Guideline ¹

Risk Factors			
Female	Non-smoker	History of PONV and/or motion sickness	Postoperative opioid administration

Pharmacologic interventions recommended ASPAN PONV Guideline

- Dexamethasone
- H1 receptor blockers
- Scopolamine patch
- 5-HT3 receptor antagonists
- Droperidol

Table 2. ASPAN PONV Guideline ¹

Number of Risk Factors	% Chance PONV	Number of prophylactic interventions to consider
0-1	10-20	0
2	40	1
3	60	2
4	80	3 or more

METHODS

A secondary data analysis was conducted of local data ($n = 94$) obtained during a prospective multi-center trial involving medical record abstraction and patient journaling ($n = 2, 170$).

The purpose of the original study was to develop a simplified risk model for predicting post-discharge nausea and vomiting (PDNV).

- Calculated number of risk factors for each patient
- Calculated number of pharmacological interventions administered to each patient
- Recorded incidence of PONV
- Determined correlation between risk factors and interventions
- Determined correlation between number of interventions and incidence of PONV
- Calculated cost-benefit analysis

RESULTS

Table 3. Guideline Adherence and Incidence of PONV

Guideline Adherence Groups	Number of patients (n)	Percent of Overall Sample	PONV Occurrence	Percent of PONV Occurrence within group	Percent of PONV of Overall Sample
Undertreated	37	39.3	13	35.1	13.8
Followed Guidelines	38	40.4	7	18.4	7.4
Overtreated	19	20.2	1	5.2	1.0

Table 4. Distribution of Costs when Guideline was Followed

Risk Level	Number of patients (n)	Antiemetics Administered Recommended	Estimated Cost to treat Group	PONV Occurrence	Estimated Cost of PONV
1	10	0	\$0.00	1	\$387.00
2	11	1	\$3.52	2	\$774.00
3	14	2	\$16.10	4	\$1,548.00
4	3	3	\$4.32	0	\$0.00

Table 5. Distribution of Estimated Institutional Costs

Number of antiemetics administered	Number of patients (n)	Estimated antiemetics Cost*	PONV Occurrence	Estimated Cost of PONV**
0	10	\$0.00	1	\$387.00
1	43	\$13.76	9	\$3,483.00
2	31	\$35.65	10	\$3,870.00
3	10	\$14.40	1	\$387.00

*Projection based on most common antiemetics used intraoperatively at GRU Medical Center

**Projection based on one episode of PONV in a prolonged postanesthesia care unit.

CONCLUSIONS

- The weak positive correlation between PONV risk factors ($r = 0.3$, $p = 0.042$) and administered antiemetics medications indicated a poor adoption of the ASPAN PONV guidelines.
- Results demonstrated that those patients given more prophylactic antiemetic medications had a lower risk of PONV/PDNV.
- Evidence suggests future research is needed with a cost-benefit analysis of an escalated pharmaceutical approach to improve PONV prevention and management .

CLINICAL IMPLICATIONS

- The ASPAN guideline was poorly implemented in this patient population.
- Clinically, this data suggests that the overtreatment group exhibited the least amount of PONV rates.
- Less cost is associated with overtreating with antiemetics versus costs incurred from PONV incidence.^{4,7}

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ACKNOWLEDGEMENTS

- Marguerite Murphy, DNP, RN, DNP Committee Chair
- Vallire Hooper, PhD, RN, CPAN,FAAN, Co-investigator of Primary Study
- Thomas Joshua, MS, Statistician
- Christian Apfel, PhD, MD, Primary Investigator of Primary Study
- Jan Odom-Forrend, PhD, RN, CPAN, FAAN, Co-investigator of Primary Study