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Postoperative Nausea and Vomiting Risk Stratification with a Decision Support Tool to Standardize

Antiemetic Administration

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Abstract

Background or Problem/Issue: Wright-Patterson Medical Center does not have a standardized method for assessing postoperative nausea and vomiting (PONV) risk or guidance for administering antiemetics.

Clinical Question: Does implementing a PONV risk stratification score and antiemetic decision support tool affect antiemetic administration by anesthesia providers at WPMC?

Project Design: This process improvement project utilized a pre and post-intervention design.

Plan for Data Analysis: We performed a literature search to identify evidence-based practices for assessing PONV risk and effective prevention strategies. We determined the Apfel risk stratification scoring system used in conjunction with a decision support tool is the best practice for preventing PONV and standardizing antiemetic administration to current guidelines. We explained the Apfel scoring system to the anesthesia and perioperative staff, then distributed an antiemetic decision support tool badge-reminder to all anesthesia providers. We measured outcomes for cases before and after our intervention. The Apfel PONV risk stratification scoring system and antiemetic decision support tool were the independent variables. The administration of prophylactic antiemetics was the dependent variable. We tracked these variables using the electronic health record (EHR). Since both independent and dependent variables were nominal, we used the one tailed, unpaired t-test for statistical analysis to determine whether there was a significant difference between our null and alternative hypotheses.

Results: Our results were consistent with the findings of our literature search. We noted increased guideline adherence in antiemetic administration and decreased PONV rates.

Analysis of Results: Including a preoperative PONV assessment and distributing a decision support tool to guide antiemetic administration increased anesthesia providers' adherence to recommended guidelines.

PONV Risk Assessment and Decision Support

Introduction

Ninety-two percent of patients are concerned about postoperative nausea and vomiting (PONV) and view it as a significant postoperative complication. Eighteen percent fear vomiting more than any other complication (Maracrio, et al. 1999). PONV also increases healthcare costs by delaying postoperative discharge and increasing rescue antiemetic administration. Each year, anesthesia providers deliver an estimated 40 million anesthetics (ASA, 2019), many of which have emetogenic properties with nausea and vomiting rates of 30% to 70% (Apfel et al., 2002). Although most anesthesia providers have developed personal strategies to prevent PONV, a lack of standardization has led to inconsistent risk stratification and undertreatment or overtreatment compared to PONV risk (Kooij et al., 2012). The USU-RNA students at Wright-Patterson Medical Center (WPMC) clinical site performed a quality improvement project to implement the Apfel PONV risk stratification scoring system with an antiemetic decision support tool to standardize antiemetic administration to current guidelines.

Significance of the Problem

There are more than 300 million surgical procedures performed annually in the United States, with the majority requiring general anesthesia (Weiser et al., 2008). Patients who receive general anesthesia consider nausea and vomiting to be the most dreaded complication following surgery (Macario, et al., 1999). PONV can lead to additional complications such as dehydration, electrolyte imbalances, aspiration and subsequent pneumonia, increased wound dehiscence, delayed recovery time, prolonged hospital stays, and unplanned admissions (Yoo et al., 2012). The average daily cost of one inpatient bed in the U.S. is $2,424 per day, so unplanned admissions following surgery can impose high prices on the patient and hospital (Kaiser Family Foundation, 2017). Costs associated with PONV are 100 times higher without appropriate antiemetic therapy (Gan et al., 2014)

There are more than 290,000 inpatient and outpatient surgeries per year within the Department of Defense's military treatment facilities. WPMC performs approximately 5,400 surgeries per year (Andrews & Lehren, 2014). The perioperative department at WPMC does not have a standardized method for assessing and stratifying PONV risks. There are also no clear evidenced-based recommendations for antiemetic prophylaxis based on risk stratification. As a result, prophylactic antiemetic administration may not be appropriate or effective.

PONV Risk Assessment and Decision Support

Clinical Question

Does implementing a PONV risk stratification score and antiemetic decision support tool affect antiemetic administration by anesthesia providers at WPMC?

Focus Areas

We assessed how current antiemetic administration at WPMC compares to recent guidelines. Then we presented our findings to the staff and implemented the Apfel scoring system and decision support tool to guide antiemetic administration. We evaluated the impact of our tools on antiemetic administration rates and presented our findings to command leadership. Lastly, we developed a sustainment plan for preoperative PONV risk screening and a training plan for anesthesia staff regarding antiemetic options.

Relevance to Military Nursing

The four tenants of the Military Health System's (MHS) quadruple aim strategic framework are lower cost, better care, better health, and readiness. According to the Congressional Budget Office (2014), the Department of Defense spends $48.8 billion to care for its 9.4 million beneficiaries. In the perioperative environment, unplanned hospital admissions, prolonged nursing care hours, and delayed discharge from the Post-Anesthesia Care Unit (PACU) cause avoidable costs. Following recommended PONV prophylaxis guidelines reduces PONV and limits overuse of antiemetics (Gan et al., 2014),,(Kooij, Vos, Siebenga, Klok, Hollmann & Kal, 2012). Effective screening and prophylactic treatment of surgical patients for PONV results in a healthier force, increased readiness both in garrison and deployed settings.

Organizing Framework

We used the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBP) to organize this project (Dang & Dearholt, 2017). The JHNEBP is a problem-solving approach to clinical decision making that combines current research with observational evidence from practitioners to critically consider incorporating a purposed practice into patient care. The model uses a three-step process called PET: Practice questions, Evidence, and Translation. The Practice questions step uses the familiar PICO format (Population, Intervention, Comparison, and Outcome) to establish a

specific problem. In order to answer the clinical question, the current evidence is searched, critiqued, and analyzed for strength. Finally, Translation involves creating an action plan, implementing the change, and evaluating the outcomes (White, 2012). The JHNEBP model provides simplicity, clarity, and ease of implementation in the perioperative setting. This framework provided an organized structure for our team to translate the best evidence into practice.

Literature Review of Solutions

We used a PICOT question to guide our evidence search: In adult patients requiring general anesthesia for noncardiac surgery (P), will implementing a PONV risk stratification score (Apfel) and decision-support tool (I), compared to no decision-support tool (C), increase adherence to current guidelines for antiemetic administration(O), measured up to 24 hours following PACU admission (T)? The search method included a PubMed, Cinahl, and Embase search (2002-2019), with assistance from the Uniformed Services University of the Health Sciences librarian. Using the MeSH terms in the English language "Apfel" and "Postoperative Complications" or "postoperative nausea and vomiting" or "ponv" or "postoperative complication." We also searched "Apfel" and MH "Postoperative Complications" or "postoperative nausea and vomiting" or "ponv" or "postoperative complication."

The search was limited to full-text publications in the English language. The search yielded 148 articles for review. Of the 148, four met inclusion criteria for project investigation (see Appendix A, PRISMA flow diagram). The inclusion criteria included adult patients (age ≥ 18 y/o) undergoing general anesthesia for any noncardiac surgery. Exclusion criteria included pregnancy, allergies to antiemetic agents, inability to communicate with the patient, or incomplete preoperative assessments.

Our literature review focused on four studies to support our project solution. Apfel, C. C., et al. (1999) supports the implementation of preoperative Apfel scoring. The authors validated a simplified risk scoring system for PONV using four independent variables. The probability of PONV is described with a 95% confidence interval by confounding predictors from the combined joint data sets:

- 10% (0 risk factors)
- 21% (1 risk factor)
- 39% (2 risk factors)

- 61% (3 risk factors)

- 78% (4 risk factors)

The use of a predictive scoring system in a prospective randomized trial by Bosch et al. (2005) found Apfel risk stratification was useful but underestimated PONV when patients were scored low risk and overestimated PONV in patients that scored high risk.

A multidisciplinary, international panel compiled the present guidelines for the management of PONV with expertise in PONV for the Society for Ambulatory Anesthesia in Gan et al. (2014). The guideline specifies how many antiemetics to use when correlated with a risk stratification score. A risk score of 0 (0 - 1 antiemetics), 1 (1 antiemetic), 2 (2 antiemetics), 3 (3 antiemetics), and 4 (4 antiemetics) (Gan et al., 2014). The provider may decide which antiemetics to use, but each additional antiemetic should be from a different class (Gan et al., 2014). According to Kooij et al., the use of a decision support tool is an effective method to improve clinicians' adherence to PONV guideline versus traditional methods such as education and feedback. Additionally, the decision support tool decreased overmedicating low-risk patients. (Appendix B, Evidence Table)

Based on these findings, the WPMC 2021 RNA cohort proposed the Apfel PONV risk stratification scoring system be integrated into daily operations at WPMC. We recommend using a decision support tool to guide antiemetic administration with the corresponding Apfel score.

Project Design/General Approach

This project is a process (or quality) improvement project that utilizes a pre and post-intervention design.

Settings and Population

We performed our evidence-based quality improvement project at Wright-Patterson Medical Center at Wright-Patterson AFB, Ohio, from March 5, 2020, to July 7, 2020. The anesthesia and perioperative departments are comprised of 20 anesthesia providers and 32 nursing staff who use the electronic health record (EHR) system "Essentris" to input pre and postoperative assessments. We audited these records as well as anesthesia providers' intraoperative records to determine antiemetics administered.

PONV Risk Assessment and Decision Support

Procedural Steps

After receiving Institutional Review Board (IRB) approval with an exemption we screened forty patients in the preoperative clinic whose surgeries would require general anesthesia. We assigned each patient an Apfel risk stratification score without documenting the score in the EHR (so all anesthesia providers would be blinded to the assessed score). We instructed the preoperative nurses on using the Apfel assessment tool and utilized a standardized questionnaire validity tool to ensure continuity. We then followed the screened patients through the perioperative period until discharge from the PACU, tracked the type and number of antiemetic medications used to prevent PONV, and compared this data to the Apfel score assigned during the preoperative assessment. We presented our baseline data to the staff and provided information on the Apfel risk stratification score and our decision support tool. We distributed badge reminders with the decision support tool and Apfel risk stratification scoring. After completing the intervention, we screened a second group of 40 patients for two weeks. We manually entered their Apfel score into the "Nursing Preoperative Evaluation" in Essentris, under "review of systems," in the gastrointestinal assessment. This assessment auto-populates into the "anesthesia preoperative evaluation" note in Essentris and is visible to anesthesia providers performing the preoperative assessment on the day of surgery. Again, we followed the second group of screened patients through the perioperative period until discharge from the PACU, tracking the type and number of antiemetic medications used to prevent PONV. Statisticians from WPMC analyzed our data from the pre-education and post-education groups to measure differences in adherence to antiemetic administration guidelines and PONV rates. Our independent variable was implementing the Apfel PONV risk stratification scoring system and the use of a decision support tool. The dependent variable was the administration of prophylactic antiemetics. Since both independent and dependent variables are nominal, and we compared two separate groups, we used a one-tailed unpaired T-test for statistical analysis. We excluded missing data, such as assessments not charted/ not performed or patients not reached for follow-up. There were no outliers since the outcome of the dependent variable was binary. We reported our findings to WPMC anesthesia leadership and developed a sustainment plan to continue PONV risk screening and prevention through assessments in the EHR and the antiemetic decision support tool.

HIPAA Concerns/Ethical Considerations

The IRB quality improvement officer and the privacy officer determined our project does not violate HIPPA guidelines and has met all requirements of IRB and WPMC privacy policies. All collected data pertains to patient care, and no personally identifiable information or protected health information was used or released in our project results. All data was safeguarded by WPMC Department of Defense systems security with data stored on Common Access Card enabled computers.

Results

We selected 80 patients (40 in the pre-implementation group) and (40 in the post-implementation group). The pre-implementation group included 16 males and 24 females while the post-implementation group included 14 males and 26 females. An Apfel score was calculated for the pre-implementation group, but was not visible to the anesthesia providers. After implementing the decision support tool and including the Apfel scores in the preoperative assessment, adherence to antiemetic guidelines increased, and PONV rates decreased. Adherence increased from 55% in the pre-implementation group to 80% in the post-implementation group, which was statistically significant ($t = -0.5, P = 0.01$). After we distributed the decision support tool, PONV rate decreased from 15% to 7%. In females, the prevalence of nausea was increased in both groups. (Appendix C: Results graphs)

Analysis of Results

Our results were consistent with the findings of the studies in our literature search. As predicted, the inclusion of a preoperative PONV assessment and the availability of a decision support tool to guide antiemetic administration increased anesthesia providers' adherence to recommended guidelines. Rates of PONV also decreased as a second-order effect. Using the EHR and badge reminders improved provider awareness and increased adherence to guidelines without changing existing workflow or increasing administrative workload.

Organizational Impact/ Implications to Practice & Policy

Since patients describe PONV as the most undesirable complication of general anesthesia, we expect patient satisfaction will increase at WPMC if a preoperative assessment and decision

support tool are permanently included in the EHR. We presented our findings to clinical leadership and Essentris systems specialists with the recommendation to build an assessment and decision support tool in the anesthesia preoperative assessment. The perioperative nurses and anesthesia staff will continue to learn about effectively preventing PONV during WPMC Anesthesia education seminars and monthly training days. We created a project poster to be displayed at Uniformed Services University of Health Sciences, where we will present our findings to faculty and administrative leadership during graduation week.

Future Directions for Research and Practice

Future cohorts of phase II students may use our data from Essentris EHR updates to form their hypotheses should their project consider anesthetic management of PONV. Possibilities for future projects might include a longitudinal study of our same process over an extended period, with a greater sample size to increase power and significance. It would be informative to identify specific combinations of antiemetics that have the most significant impact on PONV, including newer antiemetic therapy such as NK-1 antagonists (Aprepitant). It would also be useful to study antiemetic therapy timing within the intraoperative period, which varies significantly with medication and provider.

Our project required physical data entry by a preoperative nurse or anesthesia provider. Including an automatic prompt in the EHR to stratify PONV risk and guide antiemetic therapy would increase compliance and continuity.

Conclusion

In conclusion, our decision support tool standardized PONV prevention by increasing adherence to evidenced-based antiemetic administration practices. We observed a decrease in the most common errors of overmedicating low-risk patients and under-medicating high-risk patients. Implementing the Apfel risk assessment score and antiemetic decision support tool also decreased overall PONV incidence.

It is essential to note the possible impacts of the Covid-19 pandemic during our project. Our results may have been affected by changes to surgery schedules, patient populations, or canceled surgeries. The pandemic has had global implications with yet to be understood consequences.

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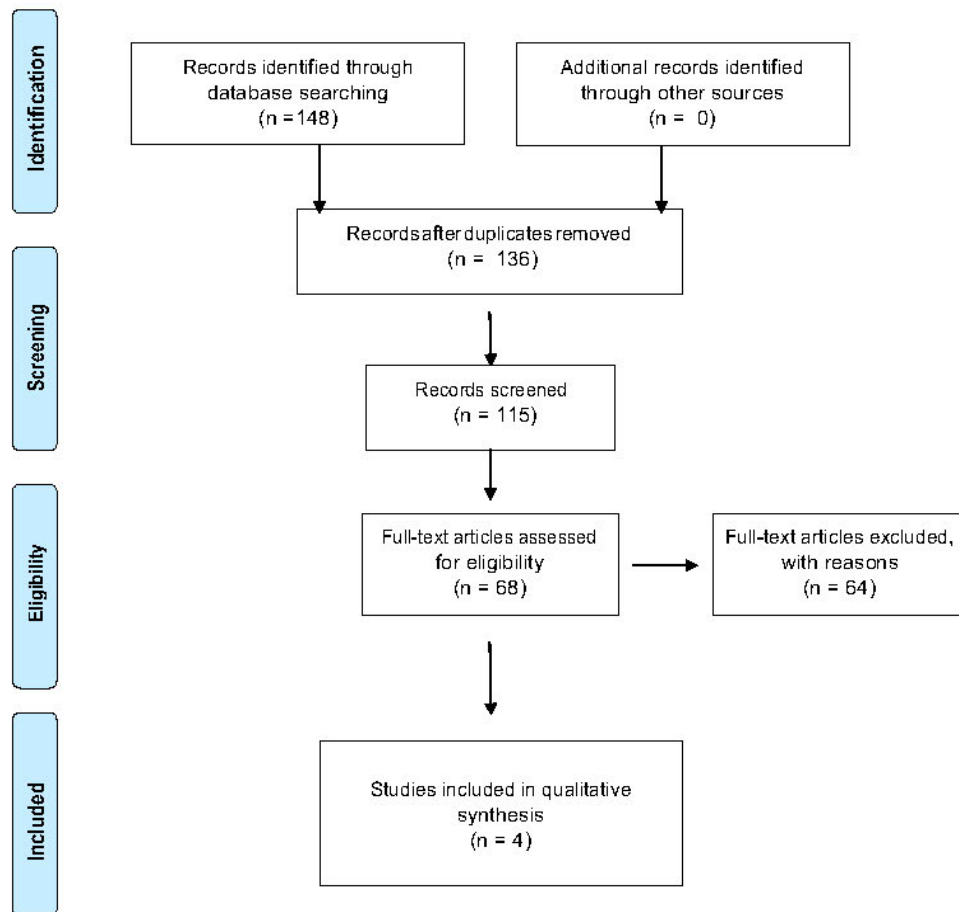https://www.anzca.edu.au/documents/2014-consensus-guidelines-for-the-management-of-

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PONV Risk Assessment and Decision Support

Appendix A

PRISMA 2009 Flow Diagram

```
                Records identified through        Additional records identified
                  database searching               through other sources
Identification        (n = 148)                          (n = 0)

                                 │                     │
                                 ▼                     ▼
                      Records after duplicates removed
                              (n = 136)

                                 │
                                 ▼
Screening             Records screened
                         (n = 115)

                                 │
                                 ▼
Eligibility      Full-text articles assessed         Full-text articles excluded,
                       for eligibility        ───▶          with reasons
                          (n = 68)                            (n = 64)

                                 │
                                 ▼
Included          Studies included in qualitative
                            synthesis
                             (n = 4)
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Running head: PONV Risk Assessment and Decision Support

Appendix B

Evidence Table							
1st Author Name (Publication Yr)	Study Purpose/Aims	Research Questions	Null Hypothesis	Alternative Hypothesis	Study Design	Total Sample Size	Sampling Plan
Apfel, et al., 1999	Investigate the predictability of a simplified PONV risk scoring system	(1) Whether risk scores are valid across centers? (2) Whether risk scores based on logistic regression coefficients can be simplified without loss of discriminating power?	Risk scores are not valid across centers and discriminating power is lost with a simplified scoring system	Simplified scoring system is valid across centers without loss of discriminating power	Logistical regression model analysis	n = 1040	Convenience. Patients were Randomly assigned from two centers adult patients undergoing general anesthesia for general and ophthalmic surgery
Bosch, et al., 2005	Test effectiveness and generalizability of Apfel and Koivuranta predictive scoring systems for PONV	Can the results found in the original studies be replicated in a more diverse population and setting?	The validation dataset will show lower discrimination between patients with or without PONV and less agreement between predicted and observed rates of PONV than the original studies	The validation dataset will show better discrimination between patients with or without PONV and more agreement between predicted and observed rates of PONV than the original studies	Prospective Randomized Control Trial	n = 1388	Randomized surgical inpatients aged 18-80. All types of surgery were included except cardiac and intracranial. Emergency surgery, pregnancy, ASA 4, morbid obesity, renal or liver disease, use of antiemetic within two weeks before surgery were all criteria for exclusion
Gan et al., 2014	Provide current guidelines for the management of PONV	What are the best practices for the management of PONV?	Recommended guidelines do not prevent PONV	Evidence-based reference tool with recommended guideline treatment strategies will help PONV prevention	Meta-analysis Systematic literature review	2,171 articles reviewed 335 articles selected	Cochrane Controlled Trials Register, Cochrane Library, MEDLINE and EMBASE

PONV Risk Assessment and Decision Support

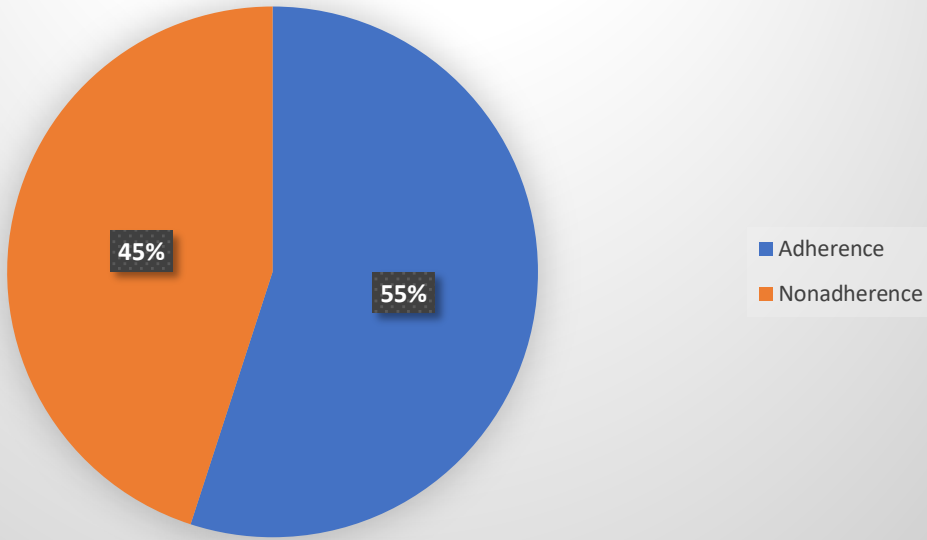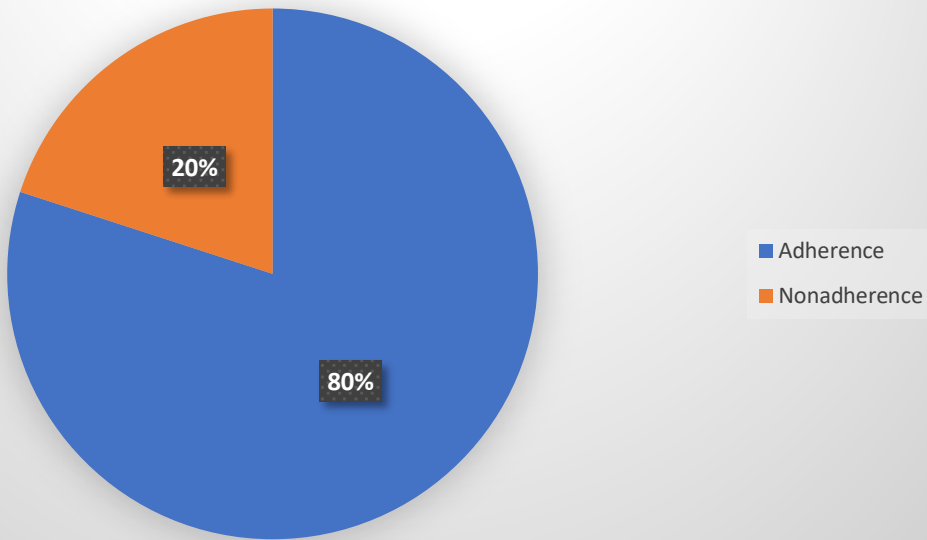| 1st Author Name (Publication Yr)	Independent Variables AND their level of measurement	Dependent Variables AND their level of measurement	Statistical Analyses (what statistical tests were used)	Results (what were the statistical results)	Strengths (how promoted internal/external validity)	Weaknesses (biases; poorly controlled threats to internal/external validity)	LEVEL OF EVIDENCE - using JHNEBP tool (Strength and Quality)
Apfel et al., 1999	gender (female =1, male = 0) age (< 50 yr = 1, 50 yr ≥ 0) smoking status (nonsmoker = 1, smoker = 0),motion sickness (MS) or PONV in the patient history (yes = 1, no = 0), duration of operation (< 60 min = 0, ≥ 60 min = 1), use of postoperative opioids (yes 5 1, no 5 0), and type of surgery	Incidence of PONV up to 24 hours after general anesthesia	Multiple regression models	Simplification did not weaken discrimination power (area under curve = 0.65 -0.75). Final score consisted of four predictors gender (female =1, male = 0), age (< 50 yr = 1, 50 yr ≥ 0), smoking status (nonsmoker = 1, smoker = 0), motion sickness (MS) or PONV in the patient history (yes = 1, no = 0), duration of operation (< 60 min = 0, ≥ 60 min = 1), use of postoperative opioids (yes 5 1, no 5 0), and type of surgery (orthopedic, ophthalmologic, otolaryngologic, laparoscopic, laparotomic, and other)	Well powered with large sample size. Centers used similar preoperative management for all patients. Proper analysis using regression model to compare multiple independent variables.	Medical centers were from countries with different postoperative pain management protocols. Sample poorly defined. Types of surgeries poorly defined.	Logistical regression model is compared to randomized control trials level 1 evidence
Bosch, et al., 2005	Apfel scoring system, Koivuranta scoring system (Nominal)	PONV (one incidence of nausea or vomiting in 24 hrs postop) or no PONV (nominal)	Hosmer-Lemeshow test statistic, histograms, ROC area, smoothed calibration line	Apfel discrimination ROC AUC 0.62 vs validation set 0.63: good correlation. Apfel predicted and observed calibration line 0.39: poor agreement. Koivuranta system calibration line of 0.58: poor agreement	Well powered with a large randomized sample size. All types of surgery included	The interviewer was not blind to the type of predictive model used. Pts all from one facility at risk for selection bias	Level I: Randomized Control Trial
Gan et al., 2014	PONV, PONV risk, PONV prophylactic measures, cost-effectiveness	Guidelines recommendations, treatment strategies	NA	PONV risk stratification for screening patients at risk for surgery mitigates PONV versus no screening Implementation of PONV-prevention algorithm improves appropriate therapy and reduces PONV	Exhaustive literature review with strict inclusion criteria to include only RCTs to make recommendations	Subjected to expert opinions/subjectivity to literature selection.	Level 1: meta-analysis/systematic review
Kooij et al., 2012	Independent variable and level of measurement = decision support tool which was nominal	Dependent variable and level of measurement= incidence of PONV which was interval	Chi squared-test and either a student's t-test or Mann-Whitney U-test	Statistical significance was excepted at P - values <0.05 decision support tool intervention period, a 4 percent decrease (P=0.01) in PONV compared to the control period. Reduction in the high-risk group by Apfel score was 17% (P<0.001)	Strengths: Fulfillment of power analysis number in decision support tool data set. Study personnel were masked to therapies about PONV. High-risk patients were classified by methods for risk stratification	Weakness: The control group did not achieve the calculated sample size of the power analysis of 1,250 patients. Prophylactic antiemetic drugs were high for risk and non-risk patients, leaving the overall incidence of PONV in the control group low at 27%. Increased number of high-risk PONV patients counted in the intervention period compared to the control	Level I

PONV Risk Assessment and Decision Support

Data Analysis Plan							
Variable Name	Variable Description and Type of Measure	Level of Measurement	Data Source	Possible Range of Values	Statistical Test	Time Frame for Collection	Decision Rule
Independent Variable: Documented Apfel Score in preoperative assessment	1.Female gender 2. History of motion sickness, or PONV 3. Nonsmoking 4. use of postoperative 10% (0 risk factors) 21% (1 risk factor) 39% (2 risk factors) 61% (3 risk factors) 78% (4 risk factors)	Nominal – Apfel score documented (yes or no)	Electronic Health Record (Essentris)	Apfel score documented or not Documented = 1 Not Documented = 0	None	December 5, 2019, to March 7, 2020	N/A
Dependent Variable: Postoperative Nausea and Vomiting Use of TIVA	Incidence of PONV up to 24 hours after general anesthesia Propofol-Alfentanil Propofol-Dexmedetomidine Propofol-Remifentanil Propofol-Ketamine Propofol-Sufentanil	Nominal - incidence of PONV, requirement of rescue antiemetic, Yes or No? Nominal - Patients either received TIVA or did not receive TIVA	Electronic Health Record (Essentris)	Incidence was yes or no = nominal. Severity-Mild (1-3), Moderate (4-6), severe (7-10) = ordinal Incidence was yes or no = nominal.	Chi-Square Test - Compares proportions, IV is Nominal, DV is nominal (frequency of 5 per cell) Backup is Fisher's Exact Test - Compares proportions, IV is nominal, DV is nominal (frequency < 5)	December 5, 2019, to March 7, 2020	Based on current literature, documented Apfel score decreased PONV up to 17% in high-risk patients with Apfel > 2 Based on current literature, TIVA has been shown to decrease PONV by 31% with a high level of statistical significance

PONV Risk Assessment and Decision Support

Appendix C

PONV Risk Assessment and Decision Support

Percent Adherence

PONV Rates
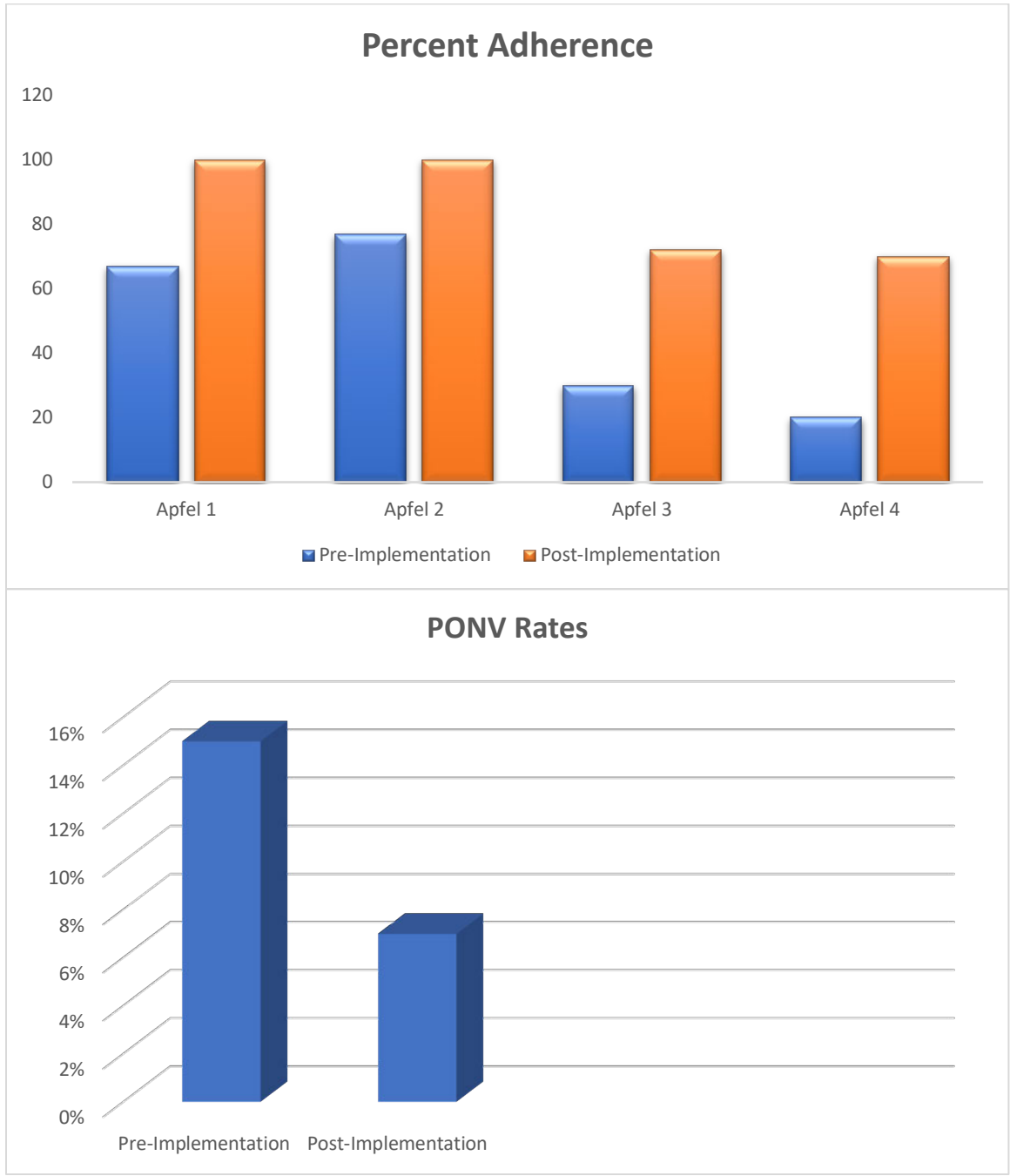
CITI PROGRAM

Completion Date 24-Aug-2018
Expiration Date 23-Aug-2021
Record ID   28283986

This is to certify that:

Jason Melvin

Has completed the following CITI Program course:

Responsible Conduct of Research (RCR) (Curriculum Group)
Responsible Conduct of Research (RCR) (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
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Verify at www.citiprogram.org/verify/?wb328c643-8f93-49e6-aedf-92f11dcba47f-28283986

PONV Risk Assessment and Decision Support

Completion Date 09-Sep-2018
Expiration Date 08-Sep-2021
Record ID 28414084

This is to certify that:

Robert Stanley

Has completed the following CITI Program course:

Responsible Conduct of Research (RCR) (Curriculum Group)
Responsible Conduct of Research (RCR) (Course Learner Group)
1 - Basic Course (Stage)

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Office of the Under Secretary of Defense (Personnel and Readiness)

Collaborative Institutional Training Initiative

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CITI PROGRAM

Completion Date 23-Aug-2018
Expiration Date 22-Aug-2021
Record ID   28285104

This is to certify that:

Joseph Acquafredda

Has completed the following CITI Program course:

Responsible Conduct of Research (RCR) (Curriculum Group)
Responsible Conduct of Research (RCR) (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
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NOTICE OF PROJECT APPROVAL

Change Number: Original

VPR Site Number:	GSN-61-11177
Principal Investigator:	Acquafredda, Joseph
Department:	Graduate School of Nursing
Project Type:	Student
Project Title:	Implementation of Postoperative Nausea and Vomiting Risk Stratification and a Decision Support Tool to Modify Antiemetic Administration
Project Period:	3/23/2020 to 1/31/2021

Assurance and Progress Report Information:

Name	Sup	Approval Type	Status	Approved On	Forms Received
Progress Report	0			To be Submitted	N/A

Remarks:
This Notice Of Project Approval has been reviewed and approved. Please remember that you must submit a final Progress Report (Form 3210) upon completion of this project.

Questions regarding this approval should be directed to the following person in the Office of Research:
Sharon McIver, (301) 295-9814.
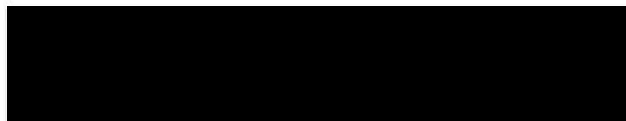
Toya V. Randolph, Ph.D., MSPH   Date
Acting Vice President for Research
Uniformed Services University of the Health Sciences

cc: File
     Radford, Kennett
     Taylor, Laura

PONV Risk Assessment and Decision Support

WPAFB PAO Clearance Letters

From: usaf.pentagon.saf-pa.mbx.saf-pa-security-and-policy-review@mail.mil
Sent: Thursday, November 12, 2020 2:32 PM
To: Melvin, Jason W Maj USAF 88 MDG (USA); Funke, Frederick H (Fred) CIV USAF 88 MDG (USA)
Subject: 88 ABW Case Completed: Case Number 88ABW-2020-3548

88 ABW has completed the review process for your case on 12 Nov 2020:

Subject: Apfel Scoring and Decision Support Tool to Guide PONV Prophylaxis (Briefing Charts)

Case Reviewer: William Huntington
Case Number: 88ABW-2020-3548
The material was assigned a clearance of CLEARED on 12 Nov 2020. This email serves as the official notice of the disposition of this case. If you have additional questions, contact the Review Manager for your case, William Huntington,

From: usaf.pentagon.saf-pa.mbx.saf-pa-security-and-policy-review@mail.mil
Sent: Sunday, November 22, 2020 9:05 PM
To: Melvin, Jason W Maj USAF 88 MDG (USA); Funke, Frederick H (Fred) CIV USAF 88 MDG (USA)
Subject: 88 ABW Case Completed: Case Number 88ABW-2020-3684

88 ABW has completed the review process for your case on 22 Nov 2020:

Subject: Implementation of Postoperative Nausea and Vomiting Risk Stratification and a Decision Support Tool to Modify Antiemetic Administration (Manuscript)

Case Reviewer: William Huntington
Case Number: 88ABW-2020-3684
The material was assigned a clearance of CLEARED on 22 Nov 2020. This email serves as the official notice of the disposition of this case. If you have additional questions, contact the Review Manager for your case, William Huntington,

From: usaf.pentagon.saf-pa.mbx.saf-pa-security-and-policy-review@mail.mil
Sent: Thursday, November 5, 2020 6:59 PM
To: Melvin, Jason W Maj USAF 88 MDG (USA); Funke, Frederick H (Fred) CIV USAF 88 MDG (USA)
Subject: 88 ABW Case Completed: Case Number 88ABW-2020-3473

88 ABW has completed the review process for your case on 05 Nov 2020:

Subject: Implementation of Postoperative Nausea and Vomiting Risk Stratification and a Decision Support Tool to Modify Antiemetic Administration (Graphics - Poster)

Case Reviewer: William Huntington
Case Number: 88ABW-2020-3473
The material was assigned a clearance of CLEARED on 05 Nov 2020. This email serves as the official notice of the disposition of this case. If you have additional questions, contact the Review Manager for your case, William Huntington,

PONV Risk Assessment and Decision Support

Patient #	Apfel Score	Anesthetic Used	Surgery Type	# of Antiemetics given	TIVA	Scopolamine	Dexmethasone	Ondansetron	Aprepitant	Nausea	Vomiting	Adhere to guidelines	gender	Type
1		GETA												Pre
2		GETA												Pre
3		GETA												Pre
4		GETA												Pre
5		GETA												Pre
6		GETA												Pre
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38		GETA												Pre
39		GETA												Pre
40		GETA												Pre
1		GETA												Post
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40		GETA												Post

1=3 ALL
2=9 ALL
3=18 5/18 NON
4=10 3 non

DEPARTMENT OF THE AIR FORCE
88TH MEDICAL GROUP (AFMC)
WRIGHT-PATTERSON AIR FORCE BASE OHIO

1 October 2019

MEMORANDUM FOR 88 SGC/SGCJ
ATTN: CAPT JOSEPH ACQUAFREDDA

FROM: WPMC INSTITUTIONAL REVIEW BOARD

SUBJECT: Institutional Review Board (IRB) Research Determination

1. Your project proposal titled "Implementation of Preoperative Apfel score effect perioperative anesthetic management and PONV," has been reviewed by the Wright-Patterson Medical Center (WPMC) IRB.

DoD Assurance: F50005
DHHS Federalwide Assurance: 00000609
DHHS IRB Registration: 00001357

2. The WPMC IRB has determined that this project does not meet the criteria to be considered research in accordance with 32 CFR § 219.102(l). This activity is an evidence-based practice initiative conducted solely in the WPMC Perioperative Unit. Therefore, activity approval and oversight by an IRB is not required. *Any changes to the activity may affect the study status and must be reviewed by the WPMC IRB.*

3. This determination does not grant permission to conduct the project; this authority lies with 88th Medical Group leadership.

4. If you have any questions regarding this determination please call me at (937) 257-4242, or e-mail frederick.h.funke.civ@mail.mil.

FREDERICK H. FUNKE, Civ, DAF, CIP
WPMC IRB Administrator

Appendix G: Daniel K. Inouye Graduate School of Nursing
DNP Project Completion Verification Form

DOCTOR OF NURSING PRACTICE PROJECT
Completion Verification Form

The DNP Project titled:

Postoperative Nausea and Vomiting Risk Stratification with a Decision Support Tool to Standardize Antiemetic Administration

was completed at: Wright-Patterson AFB

by the following student(s):

(type student name)	(signature)	(date)
Joseph Acquafredda		02/22/2021
Jason Melvin		02/22/2021
Robert Stanley		02/22/2021

The DNP Practice Project Team verifies that the following components of the DNP project, accomplished by the above students, is of sufficient rigor and demonstrates doctoral level scholarship to meet the requirements for USUHS GSN graduation:

- Presentation of DNP project to the leadership/stakeholders at the Phase II Site,
- Abstract/Impact Statement (*Appendix F*), and
- DNP Project written report.

Verified by:

	(type name)	(signature)	(date)
Senior Mentor:	Lt Col Anna M. Vance		25 Feb 21
Team Mentor:	Lt Col Ronald K. Hodgen		04 Mar 21
Team Mentor:			
Phase II Site Director:	Lt Col Ronald K. Hodgen		04 Mar 21

For RNA Students only - *add the following additional signature for final verification of project completion:*

CDR Ken Radford   9 Mar 2021
RNA Project Director *(type name)*   *(Signature)*   *(Date)*

Form Version: 26 Aug 2017/30 Mar 2020