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Reduction in Post Operative Nausea & Vomiting

Avera St. Anthony's Hospital
O'Neill, NE

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Identification of Need

- Lack of uniform evidence based procedures in Critical Access Hospitals.
- Absence of any post operative nausea and vomiting risk assessment.
- Observed that some patients that may have benefitted from pre-operative prophylaxis did not receive any treatment.

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Process Methods

- Tool presented and discussed with the surgical multidisciplinary team prior to implementation.
- Tool utilized by surgical nurses, CRNA, and surgeons
- Organizing framework The Deming Model.¹⁹
- Plan-Do-Check Act (PDCA)19
- Descriptive exploratory pre-post study with two groups (Retrospective & Prospective)

Avera #	In	tervent	ion t	cools			
MULTIDISCIPLINARY TEAM ALGO	RITHM FOR PONV PROPHYLAXIS						
		RISK ASSESSI	MENT INFORMATIO	N FOR PONV			
Risk factors		RISK FACTOR	YES NO	O POINTS			
Patient factors	Number of risk Risk of PONV	Female gender			4		
Female gender	factors (Risk score)	Non-smoker status					
Nonsmoking status History of PONV and/or motion sickness	0 (low risk) 10%	History of PONV and/or motion					
Anesthesia factors	1 (low risk) 20%	sickness					
Use of opioids	2 (moderate risk) 40%	Use of opioids					
Duration of anesthesia (> 60 minutes) Surgery factors	3 (severe risk) 60%	Duration of surgery (anesthesia)					
Type of surgery (laparoscopic, laparotomy,	greater than 60 minutes *(One point (1) for each risk factor present)						
Intra-abdominal surgeries, breast)	severe risk)	TOTAL RISK SCORE:		,			
		TOTAL RISK SCORE.					
Low risk	Moderate to very						
(0 or 1 risk factor)	severe risk	RISK LEVEL ASSESSED: 0-1	LOW RISK				
No prophylaxis	(2 or more risk factors)	2	MODERATE RI	ISK			
	Reduce baseline risk			3 SEVERE RISK			
	≥4	VERY SEVERE	RISK				
	RISK COMMUNICATED TO ANESTHESIA/SURGERY TEAM: YES/NO						
	And hadden from the	INTERVEN	TIONS BASED ON RE	SK SCORE			
1							
Moderate risk Severe r	isk Very severe risk		NO PROPHYLACTIC I	INTERVENTION			
(2 risk factors) (3 risk fact	tors) (4 or more risk factors)	MODERATE (2)	1 INTERVENTION				
One intervention Two interve	entions Three or more interventions	SEVERE RISK (3)	2 INTERVENTIONS				
		VERY SEVERE RISK (≥ 4)	3 OR MORE INTERVE	NTIONS	- /		

Avera 🐰 Intervention Tools cont. NAUSEA AND VOMITING SCALE (NVS) **Prophylactic Interventions** SEVERITY OF PONV IF PRESENT (Using nausea and vomiting scale -NVS) Pharmacologic interventions NVS Ondansetron (Zofran) Severity Dexamethasone Metoclopramide (Reglan) No complaint of nausea Aprepitant (Emend) Scopolamine patch Mild nausea Moderate nausea **Complementary Measures** Acustimulation (Anti-nausea wrist band) Frequent vomiting (up to 4 times) Aromatherapy (Quease Ease) **Anesthetic Interventions** Severe vomiting (continuous) Total intravenous anesthesia (Propofol)

Avera # **Results Occurrence of PONV** 42 general surgical patients between September 1, 2014 and November Occurrence of PONV in 30, 2014, out of which 30 charts were randomly selected for analysis. 30 42 general surgical patients between September 1, 2016 and November 30, 2016 for which the Retrospective 20 10 multidisciplinary intervention was utilized. 30 charts were randomly Prospective selected for analysis. Time Period Occurrence of PONV in 2014 (pretest) was 26.7% (8 out of 30 charts). Occurrence of PONV in 2016 (post-test) was 10% (3 out of 30 charts). **HealthStream Patient Satisfaction Survey Results 4th Quarter** 62.5% reduction in the occurrence of PONV (p< 0.001). 100 **Top Box Percent** 80 ■ Time Spent Waiting Improvement in HealthStream patient satisfaction scores from 2014-Overall Facility Rating 40 2016. Liklihood of 2016

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Retrospective group comparison of patients with and without PONV

PACU stay (min)	Yes No	8 22	177.3 89.68	94.006 38.258	33.236 8.157	0.034

Prospective group comparison of patients with and without PONV

		N	Mean		Standard Error of Mean	P- value
PACU stay (min)	Yes No	3 27	108.33 94.30	83.716 36.851	48.333 7.092	0.587

Results Cont.

- Retrospective group noted to have statistically significant difference in the duration of time in the PACU in patients with and without PONV.
- Prospective group is noted to have NO statistically significant difference in PACU length of stay in patient with and without PONV.
- Conclusion: PONV is unable to be eliminated. When the intervention tool is implemented, a decrease in PACU times, and a decrease in severity of PONV is noted in the prospective group.

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Conclusion

What Was Learned

- Systematic approach has proven to decrease rate of PONV in adult, general surgical patients
- Decreased time spent in the PACU with systematic approach
- Improvement in three areas of patient satisfaction scores

What Comes Next

- Present day use of the PONV Risk Assessment tool with interventions
- (Draft)Policy to maintain use of intervention tools for surgical patients
- Submitting data to Avera Health Standards committee in hopes to develop a tool in Meditech EMR system for electronic documentation use
- Vision of Avera adopting protocol system wide