

INTRODUCTION

BACKGROUND

- Delirium is the most common clinical manifestation in the ICU (Ali & Cascella, 2020).
- Many nurses have difficulty recognizing signs and symptoms of delirium and applying the proper interventions (Herling et al., 2019).
- Studies show low efficacy of single interventions for reducing and treating delirium; furthermore, multiple coordinated interventions must be applied (Kotfis, Marra, & Ely, 2018).

PURPOSE STATEMENT AND PICOT

- The purpose of this project is to provide evidence-based education to nursing staff regarding delirium, administration of the CAM-ICU, and the application of interventions. The goal is to effectively screen for delirium using the CAM-ICU with proper documentation of the CAM-ICU and assure treatment interventions are implemented.
- PICOT: Among ICU nursing staff (P), how does education on the CAM-ICU and treatment interventions (I) compared to no staff educational intervention (C) affect delirium screening and treatment practices (O) over two months (T)?

OBJECTIVES

- There will be a 10% increase in the CAM-ICU documentation in the EMR following the educational intervention.
- There will be a 10% decrease in falls following education.
- There will be a 10% decrease in antipsychotic usage following the educational intervention.

CAM-ICU CONDUCTED ON G1 AND G2

		G1		G2		Total	
		N	Percent	N	Percent	N	Total
CAM-ICU Conducted on Patient	Yes	24	21.4%	49	50.5%	73	34.9%
	No	88	78.6%	48	49.5%	136	65.1%
Total		112	100%	97	100%	209	100%

ACKNOWLEDGEMENTS

Thank you to Dr. Nancy Birtley for her guidance & mentorship. Additional thanks and recognition to Dr. Bostick, Dr. Sherman, and Dr. Largent. Special thanks to Laurie Corey, Dr. Casey Burton, and Phelps Health.

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METHODS

DESIGN

- Conducted 6-month QI project at the Inpatient ICU unit, which measured implementation of the CAM-ICU screening and delirium treatment interventions.
- Provided a 30-minute online presentation on delirium identification, management, and CAM-ICU usage.
- The education included a 10-question post quiz administered directly after the education.

SETTING, PARTICIPANTS, AND SAMPLE

Setting: 12 bed ICU in a rural hospital in central Missouri.

Participants: 27 total nurses in the ICU for the months of June and July. 23/27 successfully completed the education and post-education quiz.

85% of RNs within the ICU successfully completed the training despite incentives.

Sample: Charts of patients 18 years or older, with the diagnoses of delirium, altered mental status, and encephalopathy.

112 patient charts for group 1 (G1) and 97 for group 2 (G2); recommended sample size was 100 charts based on Raosoft calculation (Raosoft, 2004). Due to low census in the ICU, a convenience sample was obtained over the course of 4 months before and after intervention.

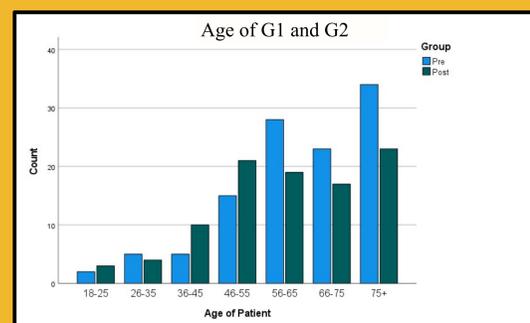
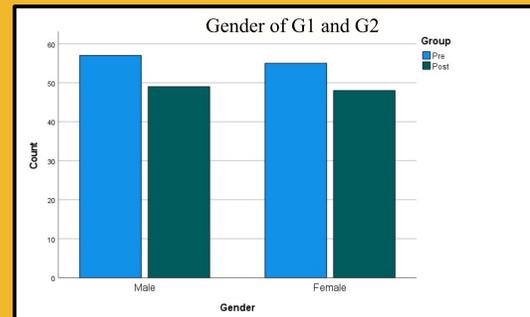
Data was collected in April and May 2021 pre-intervention and August and September post-intervention and analyzed with Chi-square.

RESULTS

- The predominant race was Caucasian (94.7%, $n = 198$) with others including: Black or African American (2.9%, $n = 6$); Asian (1%, $n = 2$); other (1.4%, $n = 3$).
- The predominant age for both groups were 75+ years G1 (16.3%, $n = 34$) and G2 (11%, $n = 23$).

CAM-ICU

ITEMS	GRADING	SCORE
1. Acute onset or a fluctuation of mental status: <ul style="list-style-type: none"> Is there an acute change for mental status baseline? Or Has the patient's mental status fluctuated during the past 24 hours? 	0 – Absent 1 – Present	
2. Inattention: <ul style="list-style-type: none"> "Squeeze my hand when I say the letter 'A'." Read the following sequence of letters: S A V E H A A R T 	0 – Absent (4 correct) 1 – Inattention (1-2 correct) 2 – Severe inattention (<2 correct)	
3. Altered level of consciousness <ul style="list-style-type: none"> RASS score 	0 – Absent (RASS 0) 1 – Inattention (RASS 1, -1) 2 – Severe altered level (>1, <-1)	
4. Disorganized thinking <ul style="list-style-type: none"> Yes/No questions Will a stone float on water? Are there fish in the sea? Does one pound weigh more than two pounds? Can you use a hammer to pound a nail? 	0 – Absent (>4 correct) 1 – Disorganized thinking (2-3 correct) 2 – Severe disorganized thinking (0-1 correct)	
Total Score		



RESULTS

- The primary objective of a 10% increase in CAM-ICU documentation was **MET** with an increase in 10.4%.
 - CAM-ICU documentation between G1 (21.4%, $n = 24$) and G2 (50.5%, $n = 49$), $\chi^2 = 19.35$, $df = 1$, $p = .3$. G2 was almost two times as likely to have a CAM-ICU completed, $OR = 1.9$, 95% CI [1.4, 2.5].
 - G1 (17.9%, $n = 20$) compared to G2 (45.4%, $n = 44$), a patient was two times as likely to be intubated in G2 than G1, $OR = 1.9$, 95% CI [1.43, 2.5].
 - Of note, there was a large statistically significant increase in COVID-19 cases in G2 (47.4%, $n = 46$), then G1 (5.4%, $n = 6$), $\chi^2 = 49.2$, $df = 1$, $p = 0.5$. Patients in G2 were almost three times more likely to have a COVID-19 diagnosis in their ICU stay $OR = 2.7$, 95% CI [2.13, 3.5].
 - Although, out of all patients with a diagnosis of COVID-19 ($n = 106$), there was a very large statistically significant increase in intubated patients with the diagnosis G1 (10%, $n = 2$) and G2 (70.5%, $n = 31$), $p = .06$. Patients in G2 were twice as likely to be intubated if they have a COVID-19 diagnosis, $OR = 2.2$, 95% CI [1.5, 3.4].
- The secondary objective of a 10% decrease in falls was **MET**. There were no documented falls within the analyzed months.
- The third objective of a 10% decrease in antipsychotic medications was not **MET** but administration did decrease by 1%.
 - No significant difference between administration between G1 (13.4%, $n = 15$) and G2 (14.4%, $n = 14$), $p = .83$.
 - However, benzodiazepine usage had a moderate statistically significant difference between G1 (16.1%, $n = 18$), and G2 (29.9%, $n = 29$), $\chi^2 = 5.7$, $df = 1$, $p = .2$. Patients in G2 were one and a half times more likely to have been given a benzodiazepine than G1, $OR = 1.5$, 95% CI [1.1, 2].

DISCUSSION

- During the months of August and September there was a COVID-19 surge in the area, which affected the G2 group results. Additional research will need to be conducted to fully understand how COVID-19 affects delirium in the ICU and ventilated patients.
- Another effect of the COVID-19 surge result is the increase of benzodiazepine use to sedate patients, especially during intubation, and prone techniques for COVID patients.
- Even with the COVID-19 surge and staff strain during this time, antipsychotic use remained the same.

CONCLUSIONS

- Objective one was met, objective two did not apply and objective three was marginally met during the QI project.
- There was a moderate statistically significant increase in CAM-ICU documentation which led to a 10.4% increase.
- Nurses need continued education on delirium especially for patients with COVID-19.
- Limitations of the study include a mainly Caucasian population of central Missouri.
- Implement CAM-ICU as policy within the ICU setting.

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