Feasibility of Simulation in Orientation - *A Pilot Study*

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Background:

Military nurses transfer to new facilities and complete orientation every three or four years.
Clinical skill proficiency is validated by direct observation during orientation.
Performance in simulated patient scenarios could decrease orientation time.
The purpose of this study was to determine the feasibility of high-fidelity simulation use in critical care unit orientation of newly assigned nursing personnel.

Methods:

A descriptive pilot study was conducted with registered nurses recruited from a military treatment facility (n = 7). Three critical care nurses and the PI created three scenarios and evaluation tools for use in the study.

Results:

Inter-rater reliability for the evaluation tool was excellent (Cronbach's alpha = 0.95).
A split in the overall mean scores was identified between participants with and without critical care experience.

Conclusion:

Simulation scenarios to evaluate new nurses are feasible in the military treatment facility; however, preparation and evaluation of the scenarios is personnel- and time-intensive.
Although not statistically significant, the split in overall mean scores may indicate a method to determine proficiency in critical care nursing.

Implications:

Replication of this study with a larger, more diverse sample is recommended to further validate the evaluation tool and these findings. Successful results can be transferred to other depart-ments within the medical center and to performance validation prior to deployment.

Table 1. Total Scores

	Total Scenario Score	Total Scenario Time (Minutes)
Possible	11.00-55.00	Estimated ⩽ 90 minutes
Critical Care Experience (n = 3)	34.00 – 49.00	32 - 59
No Critical Care Experience	32.67 – 54.67	51 - 82

Table 2. Results of Scenario Evaluation

	Mean Score (SD)	Mean Total Time (Minutes)
Critical Care Experience (n = 3)	43.78 (8.76)	46.67 (10.97)
No Critical Care Experience (n=4)	40.08 (9.89)	61.75 (13.82)

Table 3. t-tests

Overall Mean Score			
	Mean Score (SD)	t(5)	Sig. (2-tailed)
Critical Care Experience (n = 3)	43.78 (8.76)	0.51	p=0.63
No Critical Care Experience (n=4)	40.08 (9.89)		

Total Time (Minutes)			
	Mean Score (SD)	t(5)	Sig. (2-tailed)
Critical Care Experience (n = 3)	46.67 (10.97)	1.55	p=0.18
No Critical Care Experience (n=4)	61.75 (13.82)		

Critical Care Experience	Total Mean Score
Y	49
Y	48.67
Y	34
N	32.67
N	36.33
N	36.67
N	54.67

OBJECTIVE SCENARIO 1	I	II	III	IV	V
Perform a patient assessment with a focus on respiratory status.	Performs assessment with ≥ 3 prompts	Recognizes abnormal findings and asks for clarification	Pinpoints abnormal findings in regard to the patient's disease process; Reviews/follows physician orders or calls physician without prompting	Abnormal findings are related to disease process; Initiates orders; Anticipates further orders/actions (gathers equipment in anticipation)	Connects all assessment findings with pathophysiology to see full picture; Anticipates course of treatment looking for objective measures to confirm findings
Recognize the signs and symptoms of deteriorating respiratory status.	Performs assessment with ≥ 3 prompts	Identifies obvious abnormal findings without prompts; Identifies the subtle signs with prompts; Seek clarification of abnormal findings	Identifies obvious and subtle signs, intervenes without prompts	Identifies obvious and subtle abnormal findings; Initiates/anticipates future orders, suggests interventions to physician	Identifies obvious and subtle abnormal findings, initiates treatment protocol within scope of practice, connects findings to whole; initiates systemic review, intervention, collaborates with physician
Correctly administers nebulized bronchodilator	Administers nebulizer with < 3 prompts	Administers nebulizer with < 3 prompts	Administers nebulizer independently	Administers nebulizer independently; Anticipates the effect of treatment; performs an appropriate post-treatment assessment	Connects intervention with disease process; Anticipates the next steps based on the patient's response to treatment (effectiveness of treatment)
Completes patient report to ICU nurse	Gives report to accepting nurse with ≥ 3 prompts.	Gives technical report to accepting nurse; just repeats assessment findings/treatments completed	Gives report to accepting nurse; report reflects beginning understanding of the whole picture	Re-assesses patient before report; Gives report to accepting nurse; Anticipates information required by accepting nurse	Re-assesses patient before report; Give report to accepting nurse incorporating the whole patient in the report (physical, psychological/emotional assessment/needs)

Scenario 1:

William Jones is a 66-yo male being admitted for COPD exacerbation. He has a 3-day history of fever, progressive cough, and SOB. He becomes increasingly SOB during assessment. Participant should recognize respiratory distress, administer nebulized bronchodilator and reassess patient.

Scenario 2:

Mr. Smith is a direct admission from the medicine clinic. He was extremely SOB with a productive cough. He complains of chest pain and SOB. Participant should recognize hemodynamic changes of heart failure, assist with endotracheal intubation, and recognize a right mainstem bronchial intubation.

Scenario 3:

Mrs. S. Wilson, a 59 year-old female, is being admitted for 24 hours observations and hemodynamic monitoring postoperatively following a laparoscopic right partial nephrectomy for an angiomyolipoma (benign renal cell tumor). Her BP drops to 80/53. Participant should recognize signs of an occult hemorrhage, notify the physician, implement MD orders, and transfer patient back to the OR.

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Sim center photo coming