

Enhancing simulation education: A quality improvement project to support professional development, growth, and education of nurses transitioning into the critical care setting

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Problem

- ICU nurses must have an extensive knowledge base that emphasizes the importance of structured training programs to facilitate a supportive educational environment before transitioning into the ICU

Purpose Statement

- The purpose of this project is to improve upon the current nurse transition education curriculum at Kaiser Permanente (KP), a large American Health Maintenance Organization (HMO) healthcare system and determine the value of alternative education modalities and whether standardization and replication of this educational offering is warranted for dissemination to other institutions

Aims

- Identify innovative, evidence-based adult learning modalities
- Update current ICU training program
- Evaluate the effectiveness of program via pre and post-test

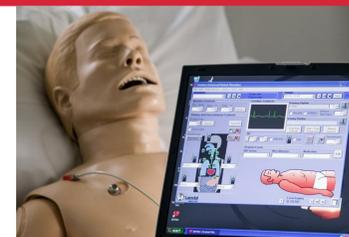
Theoretical Framework

The Iowa Model

- Ten-step methodology for transforming research into practice
- Applied to conduct a program evaluation for nurses transitioning into the ICU setting

Innovative Teaching Modalities

- Task-Training in a Flipped Classroom
- Role Playing: Use of Actors in Simulation
- Escape Room: Team-based Problem Solving in Simulation



Data Collection & Evaluation Plan

- 2 focus groups conducted
- Retroactive IRB approval submitted
- Sample: 8 ICU nurses
- Divided in groups of 4
- 30-minute activity
- Provided anonymous feedback for the survey questions to ensure face validity and accurate interpretation of the questionnaires

Post-Training Survey: Satisfaction

| Evaluation Statement | Strongly Disagree | Disagree | Neither Agree Nor Disagree | Agree | Strongly Agree |
|--|-------------------|----------|----------------------------|-------|----------------|
| 1. I found the content relevant to my ICU practice | 1 | 2 | 3 | 4 | 5 |
| 2. The instructors were qualified to teach the content | 1 | 2 | 3 | 4 | 5 |
| 3. I feel that effective methods were used for teaching content and skills application | 1 | 2 | 3 | 4 | 5 |
| 4. I had adequate opportunity for hands-on experience | 1 | 2 | 3 | 4 | 5 |
| 5. The program was well-organized | 1 | 2 | 3 | 4 | 5 |
| 7. The allotted simulation time was adequate for my learning. | 1 | 2 | 3 | 4 | 5 |
| 8. The learning environment fostered critical thinking | 1 | 2 | 3 | 4 | 5 |
| 9. What aspects of the program were most helpful to enhance your learning? | | | | | |
| 10. What recommendations do you have to improve the program? | | | | | |

Pre-Training Survey: Knowledge Perception: Respiratory

| Evaluation Statement | Strongly Disagree | Disagree | Neither Agree Nor Disagree | Agree | Strongly Agree |
|---|-------------------|----------|----------------------------|-------|----------------|
| 1. I feel confident in my ability to properly size an oropharyngeal airway. | 1 | 2 | 3 | 4 | 5 |
| 2. I feel confident in my ability to properly place an oropharyngeal airway. | 1 | 2 | 3 | 4 | 5 |
| 3. I feel confident in my ability to properly size a nasopharyngeal airway. | 1 | 2 | 3 | 4 | 5 |
| 4. I feel confident in my ability to properly place a nasopharyngeal airway. | 1 | 2 | 3 | 4 | 5 |
| 5. I feel confident interpreting arterial blood gas results. | 1 | 2 | 3 | 4 | 5 |
| 6. I feel confident identifying signs and symptoms of respiratory distress. | 1 | 2 | 3 | 4 | 5 |
| 7. I feel confident interpreting and troubleshooting a ventilator alarm. | 1 | 2 | 3 | 4 | 5 |
| 8. I feel confident in my ability to suction an intubated patient. | 1 | 2 | 3 | 4 | 5 |
| 9. I know the differences between various oxygen delivery devices (simple mask, nasal cannula, venturi mask, non-rebreather). | 1 | 2 | 3 | 4 | 5 |
| 10. I feel confident in managing patients on different ventilator modes (SIMV, VCV, PCV, pressure support) | 1 | 2 | 3 | 4 | 5 |



Limitations

- Timeframe allotted for this project
- Small sample size of the focus groups
- Extenuating circumstances involving a global pandemic

ICU Nursing Skills

Clinical Competence

- Advanced critical thinking skills are vital to providing high-quality patient care

Confidence

- Simulation exercises provide the opportunity to learn within a high-fidelity, controlled environment without the risk of harm

Discussion

- Many hospitals need to train experienced nurses emergently to meet the demand of the COVID-19 pandemic
- Frontline workers such as ICU nurses are in high demand caring for the sickest and most vulnerable patients
- The evidence-based, novel learning modalities reviewed in this project may further enhance a program's effectiveness and serve as a template for future simulations so that ICU nurses can depend on a strong knowledge base and technical skills

Conclusion

- Kaiser Permanente Regional Critical Care Course vital to provide education and support to transitioning nurses to ICU
- Future dissemination of learning modules critical in achieving program aims
- Quantitative and qualitative results reflecting the improvement in learning among nurse participants can be a deciding factor on program sustainability