Improving Clinical Competency using a Cross-Training Bootcamp: A Pilot Project
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Background

- The Cardiovascular Intensive Care Unit (CVICU) is a 24-bed adult ICU that provides care to patients with complex medical conditions including open heart surgery that require very specialized training.
- Currently, about 90% of the nurses hired are new graduates with limited experience.
- Prior to this project, no didactic or simulation training was offered as part of the orientation process for recovering open-heart surgery patients.
- The purpose of this CNL capstone project was to create an evidence-based practice (EBP) training bootcamp for Cardiovascular Intensive Care Unit (CVICU) nurses being cross trained to recover open heart surgery patients.
- The Iowa Model for EBP was used to design and implement the training program.

Synthesis of Evidence

- Orientation and validating competency help to define the knowledge and skills that are deemed essential and help to form the foundation for clinical practice.
- Validating clinical competency should occur through clinical observation and by creating opportunities to practice decision-making and critical thinking in high-risk scenarios without the risk of harm.
- Simulation is a proven effective method for helping to apply concepts learned from didactic experiences while anticipating and managing the unpredictable.
- When evaluating the transition from novice to competent, developing evidence-based education was reported to enhance clinical knowledge, skills, and confidence and was a key component to increasing competency.
- The overall competency of adult ICU nurses specifically new graduates improve by gaining experience through learning opportunities that allowed them to build their confidence and to improve their intuition.
- Clinical competency is directly linked to the quality of care provided and can impact mortality and a patient’s prognosis.

Theme and Aims

- To determine if CVICU nurses have increased clinical competency to recover open heart surgery patients during the immediate post-operative phase after attending a specialized training bootcamp in addition to the bedside orientation when compared to those nurses who only completed the three bedside orientation shifts. Project aims included:
  - Increase clinical knowledge related to caring for open-heart surgery patients during the initial post-operative phase by after attending a special training bootcamp plus bedside orientation when compared to those nurses who only completed the three bedside orientation shifts.
  - Increase self-confidence in caring for open-heart surgery patients during the initial post-operative phase by assessing each nurse’s perceived self-confidence level with recovery skills and situations through the completion of a confidence self-evaluation assessment before and after the surgical cross-training program.
  - Create a process to validate competency through return demonstration utilizing a standardized hands-on orientation checklist and through the completion of a competency validation exam in which the nurse must achieve an 80% or higher.

Implementation Plan

- This project was deemed not human subject research.

Implementation Strategies

- **Create Awareness & Interest**
  - Highlight advantages
  - Interdisciplinary team meeting
  - Discussions with key stakeholders

- **Build Knowledge & Commitment**
  - Identify change agents
  - Gap assessment
  - Clinician input
  - Educate staff to new process

- **Promote Action & Adoption**
  - Skill competence through simulation and hands-on training
  - Evidence change
  - Multidisciplinary discussion and knowledge
  - Link to organizational priorities

- **Pursue Integration & Sustained Use**
  - Review educational plan
  - Celebrate unit learning
  - Share feedback with staff

Flowchart

- Illustration of the new process for a staff nurse in the CVICU to complete his or her surgical cross-training.

**Plan:**

- Staff nurse is scheduled for the Surgical Cross-Training Bootcamp.
- Staff nurse attends the Surgical Cross-Training Bootcamp completing the didactic and simulation training.
- Staff nurse completes a surgical cross-training orientation shift.
- Staff nurse receives the open-heart surgery patient directly from the OR with a preceptor for at least the first 4 hours of recovery.

**Do:**

- Staff nurse schedules time to complete the competency validation exam.
- Final cross-trained experience +
- Score 80% or higher on competency exam?
- Yes
  - The preceptor completes the form of the surgical cross-training checklist applicable to the orientation experience.
- No
  - Staff nurse has completed Surgical Cross-Training

**Study:**

- Perceptions current program versus pilot program
  - Participants rated the content for every topic covered including the simulations as very helpful (average 4.82)
  - "Did not realize how much I did not know prior to attending bootcamp." - participant
  - "Despite a small number of participants, the impact of adding bootcamp to the cross-training process has already been significant." – CVICU Nurse Manager

- Limitations: 3 participants terminated their nursing position prior to completing the full cross-training process; the number of participants were limited due to COVID-19 social distancing requirements

Results

| Outcome #1: Participant knowledge assessment scores increased from 57% prior to attending the bootcamp to 92% after attending bootcamp (N=12) |
| Outcome #2: Self-reported confidence level scores increased on average by 1.05 points and increased for every participant (N=12) in all 5 categories |
| Outcome #3: Average score on the competency evaluation exam was 83.4% (N=3/N=9 pending) |

Lessons Learned

- **Bootcamp allowed for the application of learning versus trying to learn and apply the knowledge simultaneously.**
- **Consistent method to communicate the nursing expectations related to quality metrics for open-heart surgery patients that are routinely tracked and reported to the Society of Thoracic Surgery.**
- **Focus of hands-orientation transitioned to reinforcing key concepts and further developing critical thinking skills.**
- **CNL competencies utilized: team manager, educator, and clinician**

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References