

PURPOSE

CVCU's quality improvement project created a system for mixed acuity staffing, a professional Development Pathway for RNs, and an expert clinical resource RN on each shift.

In November 2009, the CVCU Specialty Practice Team was presented with this three tiered improvement project. The Team approved the project without modification.

BACKGROUND

- Cardiovascular Care Unit (CVCU) opened May 2009 with Universal Bed Model of Care ('Recover in Place Model')
- Acuity levels range from CVICU to CVCU/step down; CVICU patients require 1 RN to 1 to 2 patients
- 30 cardiovascular surgeries occurring in the first month
 - Increased need for CVICU RNs shortly after opening
- RNs with varying education and experience
 - Limited cross training of non CVICU staff to CVICU level prior to unit opening
 - Newly trained CVICU staff expressed discontent with length of orientation & lack of clinical resource support
 - Training was 6 weeks from orientation to ICU to caring for fresh post open heart patients
 - An average of 15% patients were CVICU level over 1st 6 months

At the start of this project:

- CVICU RNs with > 2 Years Experience**
- 14 permanent RNs out of 83 RNs (17%) and 2 travelers

Newly Trained CVICU RNs

- 6 RNs (2 who just completed orientation)
- Expressed concerns about the training program, specifically clinical expertise support after their training & appropriateness of their assignments based on current level of experience

New Graduate RNs

- CVCU hired 25 new graduate RNs or RNs new to step down (CVCU) level of care in July/August. These RNs were trained to the CVCU level of care
- In November 2009, 37% of total unit RNs were at the advanced beginner level on Benner's novice to expert continuum.

- CVCU utilized a computerized self-scheduling program
 - Program lacked ability to differentiate experience/ training levels of staff to match the patient acuity mix.

The mixture of patient acuity levels in the CVCU universal bed model, an inflexible staffing computer program, and a staffing mix weighted toward step down level of care created the potential for patient safety issues, with four major events occurring within the 1st 4 months of opening.

IMPLEMENTATION

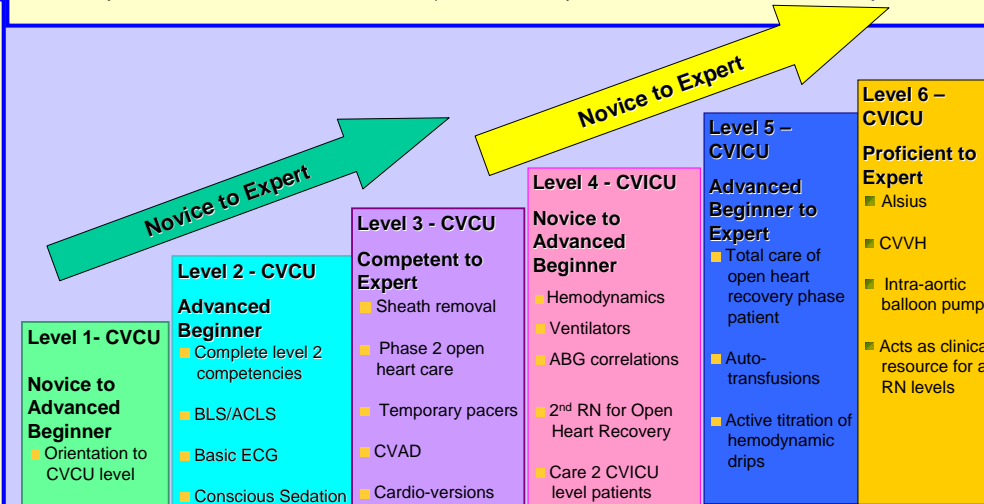
Staffing Grid:

- Acuity-based staffing grid was developed, with focus on the professional level of nursing care required to care for each patient

- Based on average patient mix being 15% CVICU / 85% CVCU with a maximum census of 30 patients:
 - 14 RNS a day were needed – 1 Charge RN, 1 Resource RN, 3 CVICU RNs & 8 CVCU RNs
 - Assistant Nurse Managers and Charge Nurses placed each nurse in one of the 6 levels and posted the list
 - Self-scheduling was then set up on paper to have the appropriate number of RNs each shift in each level

- Resource RN:** A Level 6 RN was assigned each shift as a clinical resource for the Level 4-6 RNs caring for CVICU patients & to provide support to the Level 2-3 RNs caring for the CVCU patients as able. Advanced beginner RNs at Levels 2, 4 & 5 embraced having this clinical expert resource available 24 hours a day to support them in their practice.

- Development Pathway:** A 6 tiered RN pathway was developed: Levels 1-3: RNs ranging from new grads to experienced step down level RNs. Levels 4-6: Novice CVICU RNs to experienced CVICU RNs. Only Levels 4-6 are utilized to staff the CVICU patients. Pathway was based on **Benner's Novice to Expert** shown below.



Benner's Novice to Expert Theory in a Box

Novice	Focuses on objective only Task oriented and list focused Explains correct technique
Advanced Beginner	Some experience Needs rules and guidelines Demonstrates correct techniques No prioritization Lacks discrimination for urgent events
Competent	Sees actions in terms of long term goals Copes and manages multiple patient needs Differentiates between normal and abnormal
Proficient	Perceives situations as a whole Knows what to expect Decision making is less labored Interprets findings and suggests interventions
Expert	No longer relies on analytic skills Extensive background and experience Intuitive grasp of whole situation Can predict events Anticipates complications and interventions

RESULTS

- No major patient safety events since implementation
- Staffing matched to the mixed acuity of CVCU population
 - CVCU is budgeted for 16.67 hours per patient day (hppd) (prior to implementation CVCU was running at 18-19 hppd)
 - During January – March 2010 hppd budget was met
 - Staff reported relief at knowing which RN level they were in
- Development Pathway used to cross-train nurses to Levels 4 & 5
 - 6 RNs began cross training to CVICU Level 4 in January 2010 & are now level 4 nurses
- Added benefits:**
 - Less staff being called off due to over staffing of Level 2 & 3 RNs
 - Staff report feeling well supported at the current experience level & as they progress to higher levels based on the Resource Nurse being present
 - Rarely are staff from ICU floated in to care for CVICU patients

NEXT STEPS

- Refine staffing mix as blend of CVICU/CVCU patients increases on CVICU side of the equation
- Cross train more staff to CVICU levels
- Develop ongoing professional development program to increase knowledge & competency for Level 2-6 RNs
- Continue to evaluate staffing grid and development pathway/ orientation program every 3-6 months as needed for whether or not it is meeting the needs of the unit

REFERENCES

- Benner, Pat. *From Novice to Expert: Excellence and Power in Clinical Nursing Practice*. Commemorative Ed. Upper Saddle River, NJ. Prentice Hall. 2008.
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- Altman CCU orientation program
 - North Memorial CVICU orientation program
- Articles:**
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