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Use of patient acuity scale

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Abstract

An acuity system identifies the amount of nursing care needed for each patient on a unit, based on the level of intensity, nursing care and tasks needed for each patient. Acuity tool on the other hand promotes clinical expertise by enhancing nursing competence based on their medical complexity, ADL dependency, and behaviour challenges, determined by a formal assessment process.

Background: Less accuracy in predicting staffing needs as per patient's condition

Under-estimating patient acuity levels can result in

- insufficient staffing, leading to
- increased workload,
- decreased patient satisfaction
- potential adverse events

Nursing Shortage & High patient turn over

- Nurses are overburdened
- the care requirements for multiple patients which decrease the ability
- to recognize subtle changes or meet all the needs for care

A high Nurse-patient ratio leads to high adverse patient outcomes

Nursing sensitive indicators such as

- falls, pressure ulcers, nosocomial infections, medication errors, patient satisfaction, and pain management
- if proper allocation of patient not equally distributed

Methods*:* Descriptive qualitative study conducted in CCU among 20 nurses for three months.

Result*:* There was a reduction in dissatisfaction related to patient assigning from 84 to 10, Unable to complete the tasks involved from 70 to 10, nurses felt they needed help from 60 to 20, nurses felt they were incompetent from 42 to 0, Nurses felt they were unsupported from 90 to 0, Consultant complaints on inadequate staffing esp 1:1 in ICU from 4 to 1

Outcomes: Assigned nurses felt at ease taking care of patients based on their own level of competence. The training and OSCE stations greatly helped young nurses in performing critical procedures independently and competently. The handoff register between nurses allowed each to validate patient's current acuity and care needs.

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The tool allowed for competency based assignment versus the traditional experience – wise assignment.

Challenges: Although there was an initial resistance from consultants they soon realised that the tool was very useful inefficiently using nursing manpower.

Also Nurse Managers found it time consuming since they had to refer to the score sheet and match it with the nurses' competency at every shift.

Keywords: Chief nursing officer; Nurse Educator; Charge nurse; Staff nurses: In patients

Introduction

~ used to increase patient safety by safe & equitable nurse: patient assignment ~

Patient acuity means the measure of a patient's severity of illness or medical conditions including, but not limited to, the stability of physiological and psychological parameters and the dependency needs of the patient and the patient's family.

An acuity system identifies the amount of nursing care needed for each patient on a unit, based on the level of intensity, nursing care and tasks needed for each patient.

The system allocates resources based on patient needs, not according to raw patient numbers or nurses experience.

Acuity tool on the other hand promotes clinical expertise by enhancing nursing competence based on their medical complexity, ADL dependency, and behaviour challenges, determined by a formal assessment process.

1.1. Relevance

Patient assignments can lead to dissatisfaction among nursing staff, especially when they're not consistent, objective based, and quantifiable. It can lead to insufficient staffing, increased workload, decreased patient satisfaction, and potential adverse events.

Through regular interactions with consultants & nurses it was evident that many times the patient assignments weren't rational and possible

due to a number of factors –
attrition, availability of few competent & senior nurses, critical patients who needed more hours of nursing care, critical patients who are nursed out of ICUs etc.

We also noticed that patient care acuity was not assessed prior to assigning the nurses.

Some nurses were assigned merely to fulfil the norms.

1.2. Objectives

- To understand patient's clinical needs they were classified based on the illness score

1. Stable 2. Moderate-risk 3. Complex 4. High-risk patient based on their *initial assessment*, *respiratory & cardiac parameters, medications involved, drainage devices and need for pain management.*

- To analyse nurse's competencies the nurses were bucketed into

Skills/Knowledge assessment key – based on our competency assessment scale

- not confident and need re- training
- some experience & can perform under supervision (need additional training)
- can perform independently
- can perform well (proficient)
- can perform well and can teach others

- To produce staffing patterns based on patient's illness score:
- Patient with an illness score of 4 would require the most competent nurse [score 4 or 5].
- Likewise, a partially competent nurse [score 3 or 4] could take care of an illness score of 2 or 3.
- And a non-competent / nurse under supervision would be placed for patient with the illness score of 1 only.

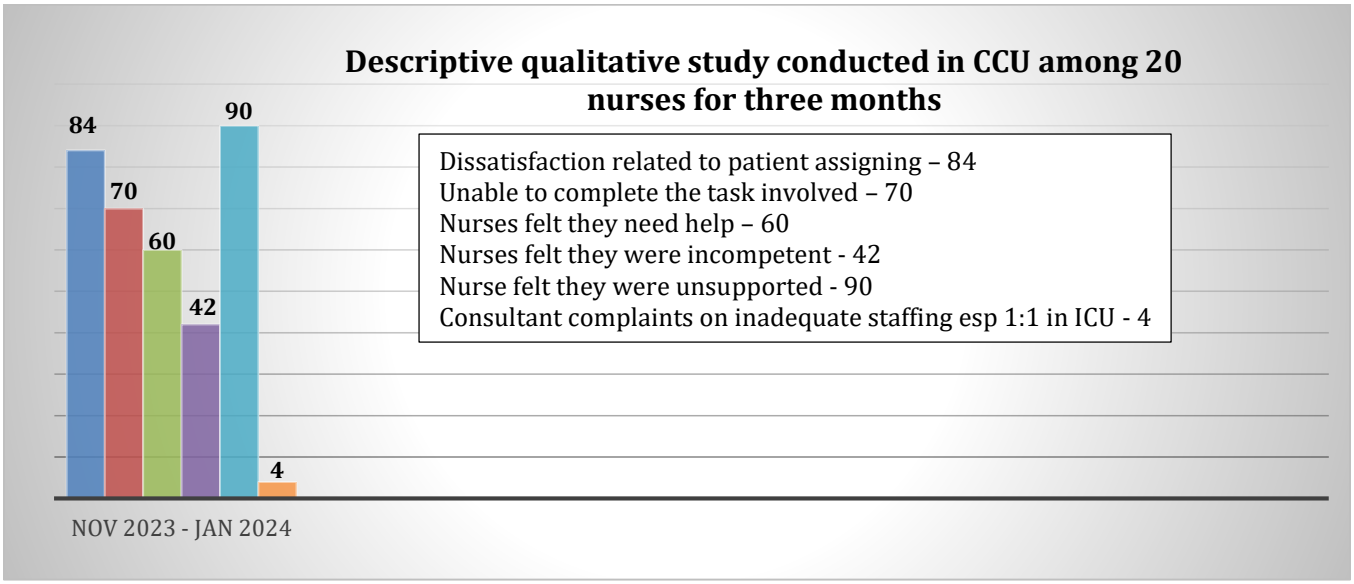

Figure 1 Descriptive qualitative study conducted in CCU

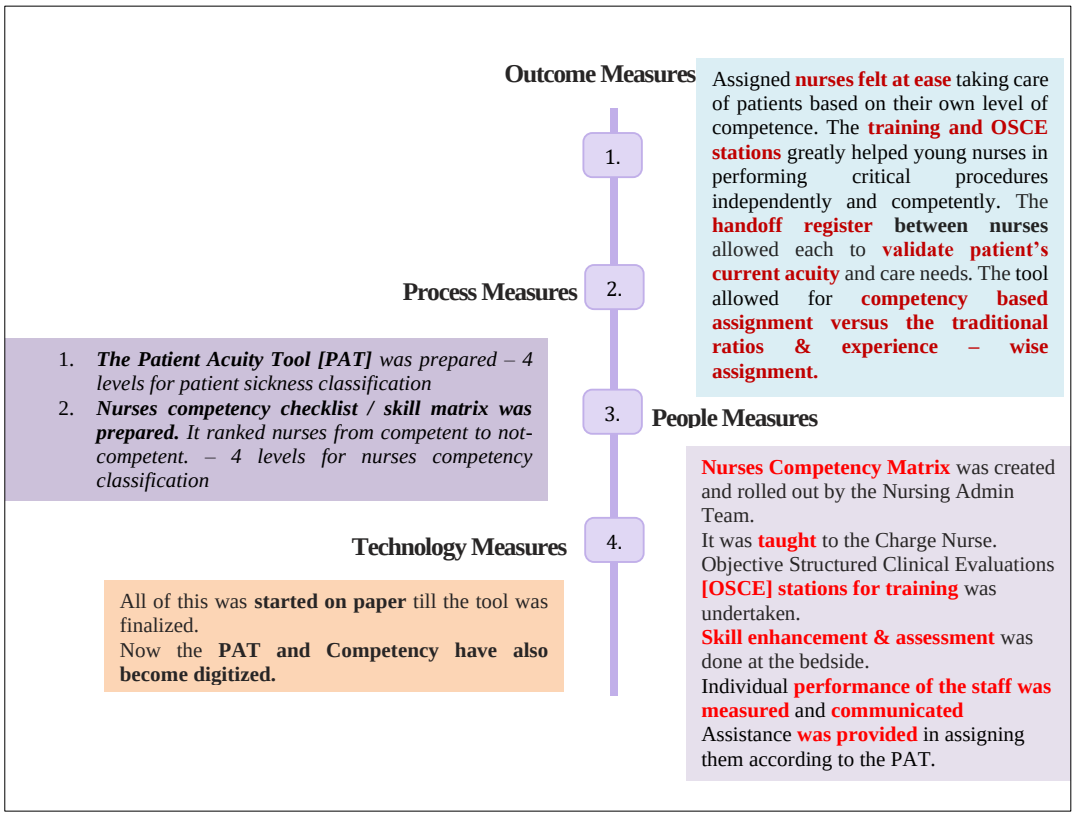

Figure 2 Intervention Strategy

CNO & Nursing administration team

[NE & CI]

↓

Senior & junior registered nurses

↓

3 months descriptive qualitative

↓

Brainstorming phase: a core team was developed to understand how we could manage crises situations, shortage of manpower & dissatisfaction of nurses resulting from patient assignments at work place. We studied the patterns of complaints from nurses as a descriptive qualitative study for three months Nov, Dec 2023 and Jan 2024.
Results: out of 20 nurses in CCU for 3 months
Dissatisfaction related to patient assigning 84
Unable to complete the tasks involved 70
Nurses felt they needed help 60
Nurses felt they were incompetent 42
Nurses felt they were unsupported 90
Consultant complaints on inadequate staffing esp 1:1 in ICU 04

Figure 3 Implementation phase

1.3. Responsible Parties

Charge nurses Skip level

Location: CCU
Responsible persons: Nurse Educators to assess their competency, teach and train.
Charge Nurse and Skip level to chart their competency level and communicate it to them.
CNO to teach the Charge Nurse & skip level to use the Patient Acuity Tool.

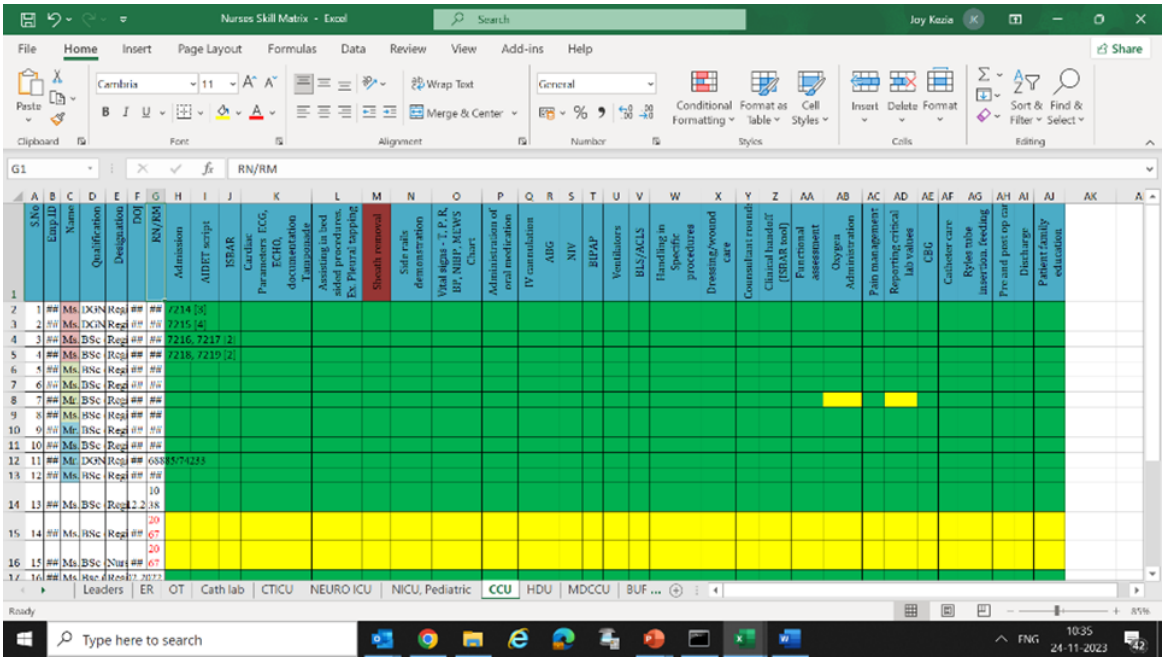

Figure 4 Preparation of the competency sheet for CCU nurses

competent [C], partially competent [PC] or under supervision & not competent [NC].

1.4. PAT and Competency Scoring using the Skill Matrix

Table 1 PAT and Competency Scoring using the Skill Matrix

	1: Stable patient	**2: Moderate - risk patient**	**3: Complex patient**	**4: High risk patient**
Clinical patient characteristics				
Assessment	Q8h VS Alert and oriented x4	Q4th VS CIWA – Ar </- 8 (Clinical institute withdrawal assessment of alcohol scale	Q2h VS Delirium / altered mental status CIWA – Ar </- 8	Unstable VS (determined by orders parameters)
Respiratory	Stable on room air	Oxygen </- lit via NC	Oxygen >/- lit via NC Tracheostomy	Oxygen via mask Can't maintain secretions independently
Cardiac	VS (determined by orders parameters)	Low – grade temp: 98.7 F – 100.3 F Pacemaker/ AICD HR >/- 130	Change in BP Temp > 100.3 F	Unstable rhythm Atrial fibrillator or PE
Medications	PO / IVPB Blood glucose normal	TPN/ heparin infusion Blood glucose Requiring notifying provider Blood draws from PICC Dialysis	CBI 1unit blood transfusion Fluid bolus for BP	Drain measured q1h Chest tube output >/- 100ml/2h
Drainage devices	</- drains (Jackson – pratt, hemavac, percutaneous nephrostomy, etc)	Chest tube to water seal Nasogastric / nasoduodenal tube Continuous tube feeding	Chest tube to Suction Drain measured q2h Bolus tube feeding	Darin measured q1h Chest tube output >/- 100ml/2h
Pain management	Pain well managed with PO or IV meds every 4 hours	Patient – controlled analgesia / nerve block Nausea / vomiting	Q2h pain management	Uncontrolled pain with multiple pain devices (IV, IM, PO, etc)

Table 2 PAT and Competency Scoring using the Skill Matrix

	1: Stable patient	**2: Moderate - risk patient**	**3: Complex patient**	**4: High risk p patient**
Nurse workload indicators				
Admit / discharge / transfer	Stable transfer Routine Discharge	Discharge to outside facility	New admission Complex discharge Discharge to hospice	Complicated postop Transfer to higher level care

Education and / or psychosocial	Calm, Cooperative	Anxious / slightly agitated Education needed	New trach / Amputee Translator Needed Requires consistent assistance (>q1h)	End of life Care
Wound, Ostomy, continence	QD / BID dressingWound vac One person assist to bathroom / bedpan	Ostomy / rectal tube Enema Bowel prep Incontinent bowel	TID / complex dressing by RN High output Ostomy Multiple wound vacs	Active drainage, change >/-30 min or >/-TID
ADLs & isolation	Independent in ADLS Standard Precautions	Assist with ADLs Two person assist for out of bed Isolation (contact, enteric)	Turns q2h Bedrest Respiratory isolation	Paraplegic or quadriplegic Total care (lifts)
Safety	Falls risk	Sitter 1:1	Bed alarm without sitter Sensory deficits (Blind, deaf, etc)	Highly agitated 1:1 Restraints
Patient score:	Most = 1	Two or more =2	Any = 3	Any = 4

1.4.1. Steps involved

Figure 5 Bedside competency assessment of skills

Implementation process contd….

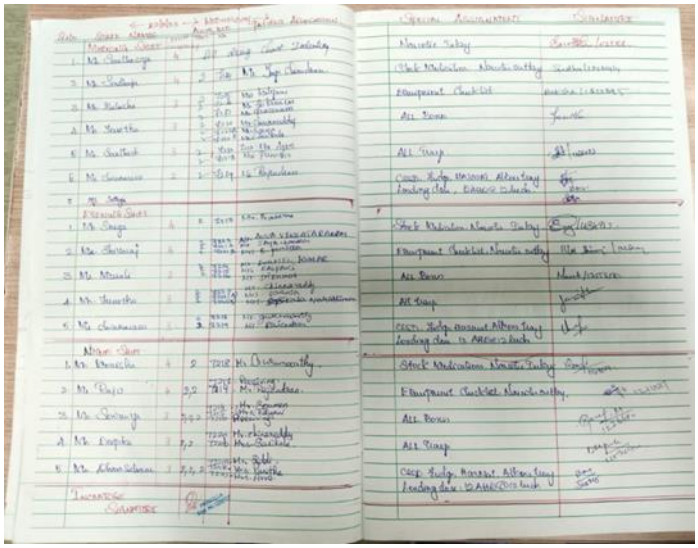

Figure 6 Implementation process

1.5. Competency ranking

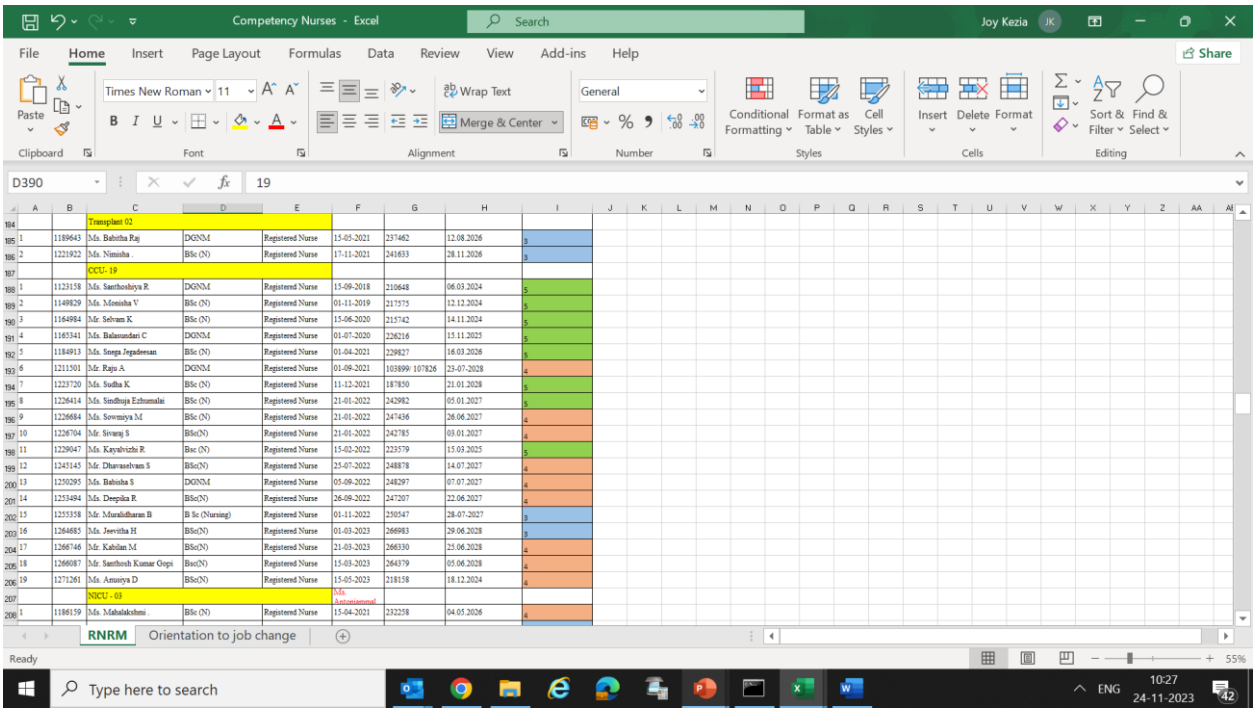

Figure 7 Competency ranking

2. Presentation of Results

The Charge Nurse & the Skip level nurses were able to efficiently use the PAT and map their own staff with competency ranking. They were able to regularly follow staff scoring against patient scoring. They were able to understand how the assignments were given and also allowed them enough rationale to care for their patient based on the criticality of their patient.

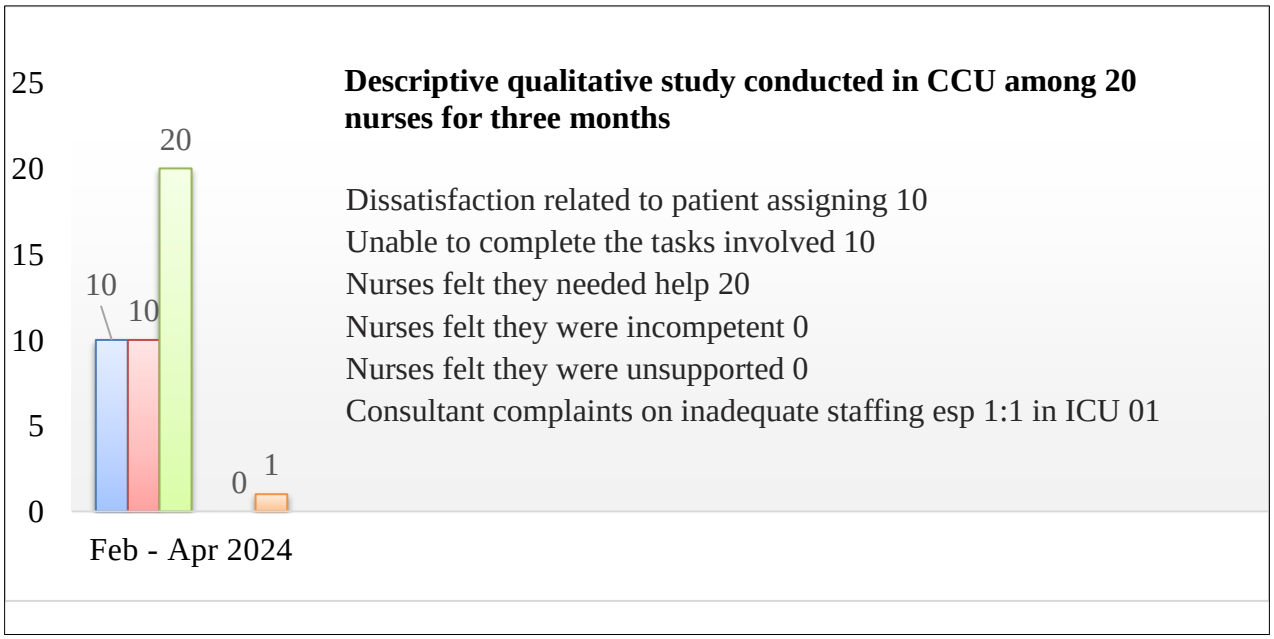

Figure 8 Presentation of results

3. Conclusion

In conclusion, the Quality Improvement Project Evaluation Criteria provide a comprehensive framework for assessing the effectiveness of improvement in patient to nurse ratios by the effective use of the Patient Acuity Tool. By following these guidelines, we have been able to replicate in all other units.

3.1. Continuous Evaluation

- Continuously evaluate the performance of the implemented interventions to ensure sustained improvement.
- Sharing Best Practices
- Share the results and learnings from the project with other teams or departments to foster a culture of continuous improvement.
- Iterative Process
- We are also looking at a complete digital patient assignment process.
- Competency assessment & skill matrix have already been made digital.
- Impact on Outcome, People, or Process

Assigned nurses felt at ease taking care of patients based on their own level of competence. The training and OSCE stations greatly helped young nurses in performing critical procedures independently and competently. The handoff register between nurses allowed each to validate patient's current acuity and care needs.

The tool allowed for competency based assignment versus the traditional experience – wise assignment.

Challenges

- Although there was an initial resistance from consultants they soon realised that the tool was very useful in efficiently using nursing manpower.
- Also Nurse Managers found it time consuming since they had to refer to the score sheet and match it with the nurses' competency at every shift.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Reference

[1] Choi J, Choi JE, Fucile JM. Power up your staffing model with patient acuity. *Nurs Manage*. 2011;42(9):40-3.

[2] Duffield C, Diers D, O'Brien-Pallas L, et al. Nursing staffing, nursing workload, the work environment and patient outcomes. *Appl Nurs Res*. 2011;24(4):244-55.

[3] Fram N, Morgan B. Ontario: linking nursing outcomes, workload and staffing decisions in the workplace: the Dashboard Project. Nurs Leadersh (Tor Ont). 2012;25(Spec No 2012): 114-25.

[4] Hardin SR, Kaplow R, eds. *Synergy for Clinical Excellence: The AACN Synergy Model for Patient Care*. Sudbury, MA: Jones and Bartlett; 2005.

[5] Harper K, McCully C. Acuity systems dialogue and patient classification system essentials. *Nurs Adm Q*. 2007;31(4):284-99.

[6] Titler MG, Kleiber C, Steelman VJ, et al. The IOWA model of evidence-based practice to promote quality care. *Crit Care Nurs Clin* North Am. 2001;13(4):497-509.