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Patient Safety: Nursing Education to Practice

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Introduction

Health care professionals do the best they can to provide the best and safest care possible to patients. However, Brennan (1991) reported that approximately 4% of all hospitalized patients experience an adverse event during hospitalization and nearly 30% of these errors are due to negligence. Moreover, nursing students can be involved in events that contribute to the harm of a patient. Adverse events involving medications and other errors are common during students' clinical learning experiences [1]. Improving patient safety requires collaborative efforts among health care professionals in addition to institutional support, in order to address quality challenges and make the transformation to safe, cost-effective, and value driven health care.

What is Patient Safety?

Health care has become more effective and more complex, with greater use of new technologies, medicines and treatments. The World Health Care Organization (WHO) defined patient safety as the prevention of errors and adverse effects to patients associated with health care [2]. Patient safety was also defined by the Institute of Medicine (2001), as "the prevention of harm to patients". Emphasis is placed on the system of care delivery that prevents and learns from the errors that do occur. It is built on a culture of safety that involves health care professionals, organizations and patients.

Nurses make up the largest proportion of health care (HC) professionals, providing over 80% of all care episodes worldwide [3]. Moreover, nurses can improve patient safety by engaging with patients and their families in a manner that shows respect, checking procedures, learning from errors, and communicating effectively with other members of the HC team [4]. Early in nursing history, Florence Nightingale (1946) advocated for safe care. She maintained that nurses through their practice had to put the patient in the best condition possible.

Why Patient Safety Education?

Maintained that all health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence- based practice, and quality improvement approaches [5].

Major competencies that nursing students should have for safe practice included:

- Basic principles of patient safety,
- Detection and reporting of errors,
- Behaviors leading to harm reduction and improved patient outcomes, and
- Team work.

Nursing educators in all programs should encourage students to develop the critical thinking skills essential in the nurse's ability to identify current or potential problems or risks that impact upon patient safety. They also should teach the theoretical basis for nursing actions and the professional behavior that provide students with a foundation for preventing health care errors. On the other hand, nursing students must learn to respect organizational policies and procedures, act responsibly, and become accountable for their actions.

Ethical practice guidelines limit the extent to which students can apply their skills in clinical settings especially for interventions that threaten patient safety. Adequate supervision should be available in the clinical setting to ensure gradual autonomy. Care should be exercised in order to find the appropriate balance between autonomy and supervision, and facilitate transition from trainee to professional without compromising patient safety.

System Approach

Building system's thinking and a culture of safety starts at the beginning of nurse training. At the end of their program, graduates should possess foundational competencies relevant to system's approach to patient safety. This is because patient care is delivered by a variety of health care professionals working collaboratively together, i.e., they depend on a system of care.

Health care Systems are divided into five main components:

- Health Care professionals
- Patients and their families
- Health care infrastructure
- Technology and therapeutic agents
- Monitoring and assessment methods

For systems to work effectively, the interrelationship among the different components and how these contribute to overall quality and safe patient care has to be clearly demonstrated and understood. Students as part of the health care team need to understand mechanisms that break the system leading to errors that compromise safety, proposed the Swiss Cheese Model (Figure 1) which explains that serious outcomes could take place due to faults in a number of layers in the system increasing accident opportunity [6]. Reason further described error as the failure of a planned action to achieve its intended outcome or the difference between what was actually done and what should have been done.

The Blame Culture

It is crucial that students begin their vocation understanding the difference between blame and systems approaches. To enable HC

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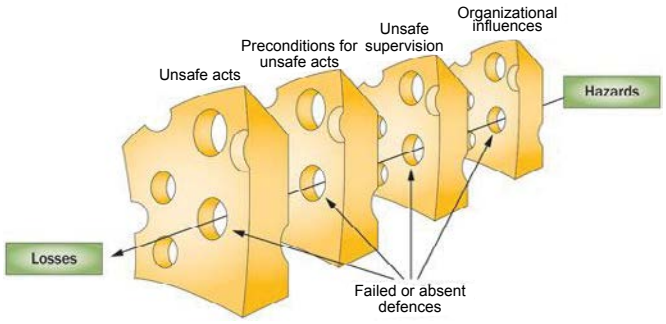

Adapted from Reason [6]

Figure 1: Swiss cheese model.

environments to become learning organizations, encouraging openness and transparency regarding adverse events, and shifting the culture of blame and shame to a supportive and learning paradigm should be undertaken. Health care institutions have a unique feature which is the culture of infallibility that denies the preponderance of error. Another feature of HC associated errors is that when failure occurs patients suffer and health professionals are blamed.

A supportive learning environment is the one where students feel comfortable asking questions, volunteer what they do not understand, and share their concerns in an honest and open way. When something does go wrong, the traditional approach is to blame the health care worker most directly involved in the provision of care for the patient at that time-often a student or other junior staff member. A systems approach enables us to move away from blaming toward executing processes that improve the transparency rather than focusing solely on acts of care. According to researchers, it has been easier to attribute legal responsibility for an accident to the mistakes or misconduct of those directly involved with the treatment than to those at the managerial level.

Observed that between 60-80% of system failures were attributed to "operator error" [7]. Underpinning this practice was the belief that, since individuals are trained to perform tasks, a failure of a task must relate to a failure of individual performance which results in punishment. Unless students are open about errors, there will be little opportunity to learn from them, maintained that if this culture of blame persists, HC organizations will have great difficulty in decreasing the chance of adverse incidents to occur in the future [8]. A systems approach enables us to examine organizational factors that sustain dysfunctional HC and accidents/errors rather than focus on the people who are associated with or blamed for these events. It facilitates the analysis of factors underpinning adverse events resulting in the establishment of strategies to decrease the likelihood of recurrence.

Status of Nursing Education Today

To keep pace with the rapidly changing HC environment, nurse educators must continuously evaluate and revise educational curricula. The nursing profession must integrate changes in the HC environment and ensure the continued delivery of high quality, safe and effective care.

Safety issues need to be addressed in nursing curricula in order to

- Develop and maintain a culture of patient safety which continues throughout professional life.
- Enable HC environments to become learning organizations encouraging openness and transparency around adverse events.

Competencies which are necessary for appropriate contributions towards safe HC include:

- Knowledge about core principles and key processes in patient safety.
- Skills required for identification/detection of adverse events.
- Behaviors leading to improved outcomes and prevention of harm.

Nursing education curriculum designers need to go beyond theoretical concepts of patient safety education and develop strategies to increase the application of safety knowledge and competencies in daily practice. Nursing Curricula must develop and promote a culture of "Patient Safety" which continues throughout professional life. Two types of curricula may be implemented:

- **Traditional curriculum** where "Patient Safety" is taught in later years when students have more knowledge and clinical exposure.
- **Integrated curriculum** where "Patient Safety" is introduced early and integrated successively throughout the entire program.

Supportive Learning Environments

These environments provide models for professional/ethical practice where students learn by observation and active clinical experience as members of the interdisciplinary HC team. Students are challenged to:

- Apply their scientific knowledge to specific patients and HC specialties.
- Identify the main contributing factors that lead to errors.
- Think about actions that will prevent errors.
- Exercise their critical thinking to become effective and safe practitioners.

Good instruction or supervision is essential for every student. The quality of instruction or supervision will determine how successfully students integrate and adjust to the hospital environment. Failure of HC professionals to provide adequate instruction or supervision to students makes them more vulnerable to making mistakes either by omission (failure to do something) or commission (doing the wrong thing [3]).

Honesty is very important; students should identify themselves to patients as "students". They should:

- Not perform any procedure/treatment for the first time without appropriate preparation/supervision.
- Be encouraged to ask questions, admit what they do not understand, and openly share their concerns.
- Maintain clear/respectful communication with the HC team.
- Encouraged by faculty/staff to report incidents and reinforce their effort.
- Clearly understand who they report to, and when and how that person can be contacted.

It is unrealistic to think that graduates of nursing education

programs have received all the training they need when they depart the doors of academia. Orientation programs for new graduates and continuing education for nurses are essential tools to help practitioners improve their knowledge, skills and expertise so that quality patient care is provided, outcomes are optimized, and errors are minimized. Ongoing evaluation of nursing competence is necessary to promote patient safety (Australian Council for Safety and Quality in Health Care, [9]).

Important Highlights

Clinical training requires a balance between autonomy and oversight. Better oversight is reflected in available/involved supervisors, and encouraging trainees to admit their limitations and call for help when needed. The use of simulation may help trainees to traverse their training curves with fewer risks to patients. Attention must be given to the "Hidden Curriculum" that trainees are exposed to during clinical rotations.

The major advantage of using patient simulation as an instructional strategy in nursing education is that it provides opportunity for interactive learning without risk to an actual patient. Learners can be permitted to make mistakes without fear of harming a live person. Responsibilities of preceptors during clinical training include:

- Sharing knowledge about patient care and act as role models.
- Identifying specific learning opportunities.
- Observing students practicing skills under the appropriate level of supervision.
- Providing time for reflection, monitoring and documenting students' progress.
- Assessing competence regarding patient safety and providing feedback.
- Ensuring that feedback is delivered during, or as soon as possible after an event.
- Providing constructive feedback [4].

By providing students with exposure to a variety of clinical situations through clinical practicum experiences and patient simulations, they can be better equipped to provide safe, effective care and work collaboratively with members of the HC team.

Challenged by patient's right, medico-legal issues and ethical practice, two fundamental questions are proposed regarding nurse training:

- What is the appropriate balance between autonomy and supervision?
- Are there ways for trainees to traverse their training curves more quickly without necessarily learning from their "mistakes"?

High turnover rates among new nurses underscore the importance of transition-to-practice

residency programs, which help manage the transition from nursing school to practice and help new graduates further develop the skills needed to deliver safe, quality care. The patient safety curriculum requires that all stakeholders work collaboratively across the organization to:

- Reduce the theory/practice gap.
- Embrace the requisite knowledge, skills and behaviors for patient safety.
- Appropriately recognize the theoretical and practical learning that emerges from the experience.
- Take learners preferences into account.
- Deliver content in various formats.
- Provide appropriate level of support for transfer of learning to work place.
- Integrate students effectively into clinical teams [4].

Essential Components of Patient Safety Education

Students who feel safe and supported tend to be more open to learning, enjoy being challenged, and are more prepared to actively participate in learning activities [10]. As students progress in the clinical and work environment, the challenge is to apply their general scientific knowledge to specific patients. The reporting and analysis of error can help identify the main contributing factors that lead to errors and the action strategies that will prevent them.

Effective teaching involves engaging students in learning activities which requires them to exercise their brain, and use all their senses to prevent adverse events, explained that the training of health professionals as teams is effective for enhancing patient safety and reducing medical errors [11]. Faculty should ensure that students are included in teams and assigned roles, so that they can observe these processes from the inside. Students, on the other hand, can start practicing good team work at the very beginning of their training. Clear and respectful communication is the basis for good team work.

It is important that students do not perform a procedure on a patient or administer a treatment for the very first time without appropriate preparation. Students should become accustomed to asking questions whenever they do not know something relevant and important to their patients. If students report an incident to their instructor or another health professional that dismisses their effort, then they will less likely make additional reports in the future. Even when this happens, students should be encouraged by faculty/staff to continue to report incidents.

A number of established guidelines that underpin learning and support patient safety were suggested by the European Union Network for Patient Safety [12]. These are:

- Nursing curricula should be patient centered.
- Patient safety should be applicable in all HC settings.
- Patient safety is everybody's business.
- Students' competencies should be multidimensional including: behaviors, knowledge and skills.
- Learning interventions should be context specific.
- Patient safety is a continuous professional activity, demonstrated by continuous learning and appropriate practice.

Students learn better in a safe supportive learning environment, one which is challenging but not intimidating and where experiential learning is facilitated. European Union Network for Patient Safety [12]. When leaders of nursing schools and HC institutions work together to redesign curricula, improve preparation of new graduates for complex HC environments, and enhance the quality of inter-professional learning and team work; the gap between education and what is required for safe

practice will close. Neither practice nor academia can accomplish the transition alone, but together they can improve the quality and safety of patient care. **"Safety Culture"** within nursing curricula aims to teach future nurses that safety is everyone's responsibility, within all practice levels, and that humans are prone to commit errors.

Academic/Practice Partnerships

Partnerships are gaining momentum in nursing education as a vehicle for bridging educational preparation and professional practice, and ensuring safe/seamless transfer of learning to the work place. Partnerships address complex HC issues by building on the values and assets brought by partners and the efforts made towards mutually beneficial goals and shared accountability.

What can educators do? They should encourage:

- Active autonomy of the learner rather than reactivity to what is being taught.
- Students to learn through their own actions, and through shared experiences with colleagues.
- Continuous professional development for maintenance/ improvement of skills. Ingredients of successful partnerships include.
- Clear communication channels for better coordination/ collaboration.
- Shared vision of the benefits of cooperation.
- Continuous flow of information between partners.
- Shared resources, combined strengths, opportunities and chances for growth.
- Integrated practice/education competency model.
- Mutual trust and team behavior.
- "Acting as One" regardless of governance structure [13].

Innovative academic-practice partnerships have the potential to improve outcomes and quality competencies for both settings. Faculty may contribute expertise in evidence based practice and, at the same time, gain knowledge of quality improvement terminology such as variance reports, report cards, benchmarks, etc…Formal learning enables the development of a wide range of work enhancing competencies. Informal learning, on the other hand, enhances self-reliance, personal reflection and critical analysis (Hidden Curriculum). College of Nursing and Health Sciences-Makassed General Hospital Partnership Model Practice-Education partnerships are a valuable resource for designing a model for work and collaboration. Faculty members need exposure to high functioning inter-professional teams so they can know how to help students develop their competencies regardless of setting. Practice setting leaders and faculty could, together, enhance students' exposure to inter-professional teams, such as setting up joint learning sessions for nursing, medical and other HC professional students to demonstrate comprehensive HC delivery models. Developing and maintaining a culture of safety begins with initial professional training and continues throughout professional life (Life-long Learning). An integrated practice/education competency model will positively impact patient safety and improve patient care (Figure 2).

The College of Nursing and Health Sciences-Makassed University of Beirut and its sister institution Makassed General Hospital (MGH) have set up a partnership program for training of nursing students. Both parties have decided to advance this partnership to a higher level by launching a Service Excellence Task Force (TF) involving hospital administrative, medical and nursing staff and college faculty. The Task Force Mission was to create a Service Excellence Culture that promotes:

- A Positive Image of both institutions within the community;
- Help MGH to provide Optimum Health Care in a safe, professional and compassionate environment;
- Promote Quality Services across all hospital departments, supported by core values of Collaboration, Openness, Respect and Empowerment.

Its Main Goal was to create a positive care environment that provides quality health care services to patients while disseminating a sense of respect and inclusiveness for all staff members (Figure 3).

Task Force Objectives were to promote:

- Positive Professional Image
- Patient Satisfaction
- Employee Satisfaction
- Service Excellence Infrastructure
- Excellence in Standards of Care

Multidisciplinary teams were set up to address different issues related to patient care services and promote a positive image about MGH within its community. Each team included:

- A team leader
- Two team members selected by the leader from hospital staff

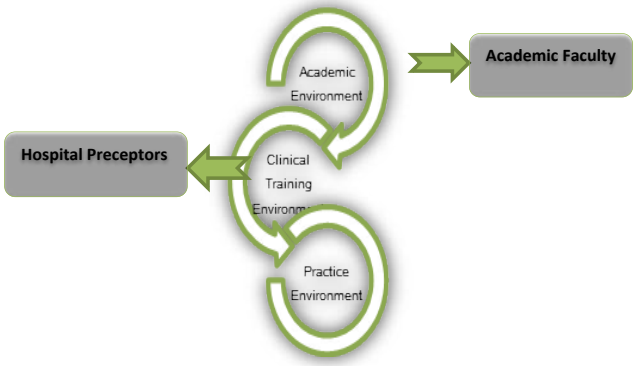

Figure 2: Clinical training partnership model.

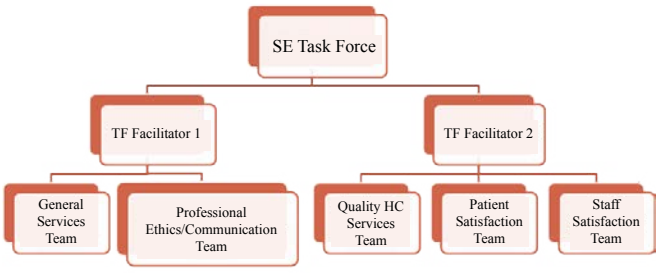

Figure3: College-hospital partnership model.

- One facilitator from taskforce
- Two advisors
- 1 Physician
- 1 Faculty member (Nursing College)

Teams' Functions were developed to:

- Foster a standardized, systematic, and multidisciplinary team approach
- Identify and study a problem area,
- Conduct root cause analysis,
- Develop action plans, and implement them, and
- Evaluate outcomes, under the guidance of FACILITATOR and ADVISORS.

The Service Excellence Initiative represents a partnership model that enhances cooperation and collaboration between academic and HC institutions. Ultimately, the aim was to "Spread the Service Excellence Culture" to all parts of the institution and reinforce the maintenance of a "High level of Performance for Quality and Safety" The Service Excellence initiative aims at operating more effectively and efficiently, through better staff engagement, which will improve general operational performance, leading to improved customer satisfaction, and building trust in the Hospital. Change of Culture is a long journey requiring commitment and perseverance. The challenge remains to be the ability to maintain momentum and ensure continuous implementation of all actions, and the progress to a higher level of performance at all levels, leading to a sustained culture of patient safety.

Conclusion

The Quality and Safety Education for Nurses initiative indicated that the current challenge is for nurses to move beyond the application of quality and safety competencies to patients and families and incorporate systems thinking in quality and safety education and healthcare delivery [14-18]. They further maintained that a safe and high quality system of care requires that all healthcare professionals take responsibility to learn and apply skills associated with improving the wider system of care. Nursing education can act as a driving force by providing leadership to improve health care systems and patient safety. Graduates who have the foundational competencies relevant to the systems approach to patient safety will be able to make a difference in the quality of patient care.

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