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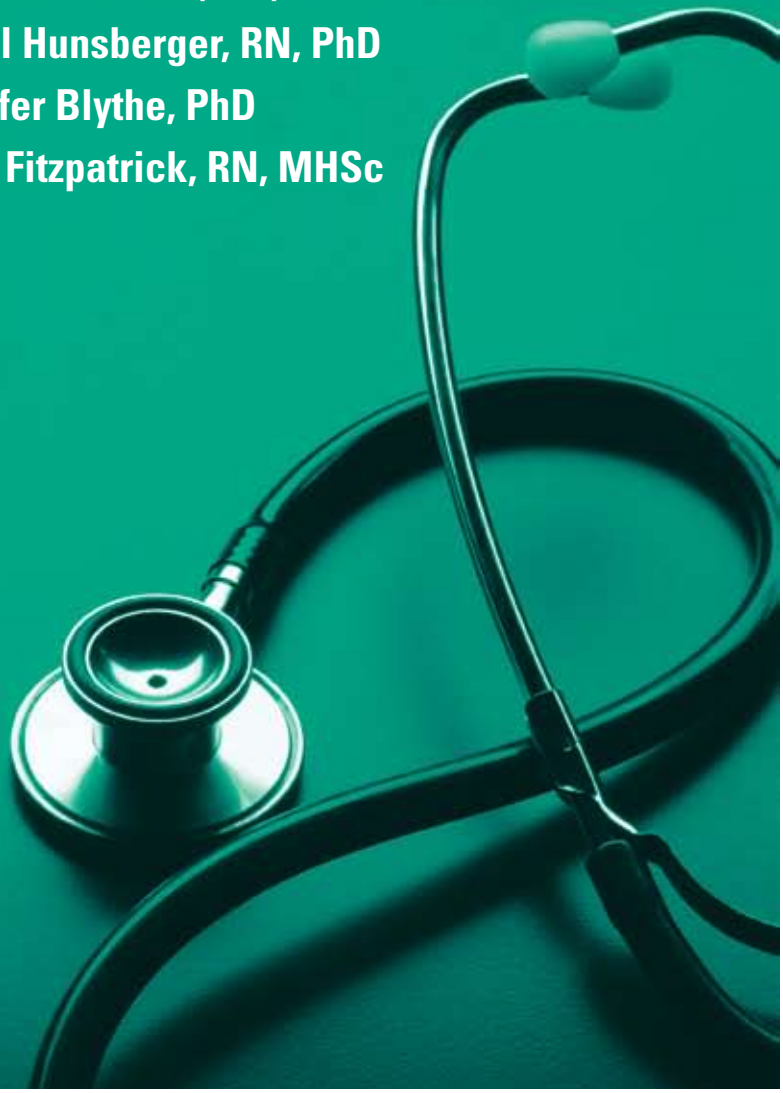

The Production of Critical Care Nurses:

A Collaborative Evaluation of Critical Care Nursing Education in Ontario

March 2008

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The research team wishes to acknowledge the valuable contributions of the expert review panel (Appendix C).

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Executive Summary

The Ministry of Health and Long-Term Care (MOHLTC), through the Critical Care and Nursing Secretariats, is committed to providing system supports to improve critical care education for nurses and assisting hospitals in meeting their human resource needs for safe and accessible care. Commissioning and supporting the development of new Critical Care Nursing Standards (CCNS) by the Nursing Subcommittee of the Critical Care Expert Panel was the first step in achieving this vision. In order to determine the extent to which these standards have been incorporated into college and hospital-based critical care nursing education programs in Ontario, the Nursing Health Services Research Unit at McMaster University was asked to conduct a collaborative evaluation of selected programs in the province.

The CCNS were positively received by critical care nurses in this study as a basis for improving basic critical care nursing education and specialty orientation in the province. Although there were some suggestions for minor changes, the standards were generally seen as "very thorough and well-framed with inherent specific outcomes." However, concerns were raised about the professional ownership of and ultimate accountability for consistent implementation across the province.

Collaborative evaluation of 24 critical care nursing education programs against the CCNS demonstrated great variation within and among college and hospital-based curricula in Ontario. Mean compliance with the standards varied from 25% to 75%. These outcomes underscored the need for a standardized core curriculum for beginning practitioners in the specialty. If basic preparation in the specialization is to be portable from one hospital to another, all beginning critical care nurses should receive the same educational preparation. Further to this, nurses have consistently identified the lack of formal recognition for the education required to begin work in their specialty area. If educational preparation for the beginning critical care nurse is based on a standardized core curriculum, there should be some consideration for formal credit, either towards a baccalaureate in nursing or a critical care nursing certificate. The standardized critical care nursing curriculum should be presented in partnership with educational institutions in the province. For this to be viable and have provincial impact, strong partnerships between the educational and hospital sector and structures such as the Local Health Integration Networks (LHINs) are required. Ongoing collaborative planning at the governmental, regional and local level will be essential in making this a reality.

Precedence has been set at both the undergraduate and postgraduate level with nursing specializations such as oncology, neonatology and primary health care. These programs provide a standard approach that can be adopted across educational institutions. It may be timely to consider such an approach with critical care nurse specialization.

Main Messages

All critical care stakeholders praised the new provincial standards for critical care nursing practice as comprehensive, applicable and necessary to improve the quality of critical care nursing education and practice in the province.

Focus group interviews resulted in some suggestions for more emphasis on current standards or inclusion of the new standards with regard to the following content areas:

- Patient safety in critical care areas
- Critical care nursing roles in disaster and pandemic planning and emergency preparedness
- Enhanced infection control measures in critical care areas
- Recognition of the critical care patient as an individual and a key member of a family unit
- Leadership function of critical care staff nurses, frontline and middle managers
- Research role for critical care nurses in both clinical and health services research

Compliance with the CCNS varied across and within organizations. College programs were strong on theoretical content, but questions were raised regarding the clinical component of these courses. Hospital programs provided strong clinical experience, but covered only the theoretical and clinical content pertinent to the types of patients they served. All participants in the collaborative evaluation expressed the need to combine human, technical and physical plant resources to efficiently and effectively launch comprehensive, standardized critical care nursing education in the province. There was willingness and enthusiasm for working together to achieve this, but the need for cooperation and support from the LHINs, the MOHLTC and the Ministry of Training, Colleges and Universities (MTCU) was emphasized.

After self-evaluation and expert panel evaluation, hospital and college-based critical care nursing curricula were scored based on mean percent compliance with the new standards at the overall level, by standard grouping and by item. The overall mean compliance rankings of the participating critical care education programs indicated that one college and one hospital program achieved acceptable compliance levels at 75-100% compliance with the standards. Thirteen programs, seven hospital-based and six college-based, were 50-75% compliant with the standards and the remaining nine programs were 25-50% compliant. This suggests ongoing work is necessary to bring many of these programs in line with the provincial standards and may require new and innovative ways of developing, offering and conducting standard-based programs through hospital/college partnerships.

A gap analysis revealed specific areas where additional work is needed. On average, mean compliance at the standard grouping levels across both types of programs indicated that more work is required in the following groupings, which fell below the 50% compliance level, to meet the new standards:

- Professional issues, particularly those involving privacy and confidentiality concerns
- Nursing competencies and nurse/hospital responsibilities for ensuring continuing clinical competence
- Critical care unit structure and processes including interdisciplinary roles and functions
- Ongoing evaluation of the critical care patient plan of care and patient and family relationships
- Drilling down to the item level revealed even more variation in compliance across and within organizations, and gap analysis identified many specific items which were either completely omitted from some programs or only partially covered

Key Recommendations

In making these recommendations the research team envisaged a cooperative endeavour in which governments, professional associations and councils, employers, educators and researchers support the ongoing development and promotion of an enduring, competent critical care nursing workforce in the province. Accordingly, the following recommendations should be considered.

Employers and Educators

- Create partnerships between educational institutions, hospitals and professional organizations to upgrade and standardize critical care nursing education in the province and include critical care nursing courses for credit.

- Build a critical care nursing career path that includes basic certification and undergraduate and graduate level advanced practice in the specialty.

- Ensure a match between the curriculum and the skills and competencies required in the workplace; teach leadership skills, healthcare policy and workplace health issues for nurses.

- Merge teaching strengths of both hospitals and educational institutions through affiliation agreements and cross-appointment of teaching staff.

- Optimize the existing physical space and technical infrastructure of both hospitals and educational institutions.

- Initiate ongoing continuing education for critical care nurses to maintain a competent critical care nursing workforce. Based on focus group feedback, the following suggestions are put forward for consideration:

  - Dedicate budget for continuing education and staffing flexibility for mid-career nurses to maintain competence and achieve certification in critical care nursing.
  - Create partnerships among hospitals to share educational opportunities and expertise.

Professional Organizations

- Consider the areas identified by the nursing stakeholder focus groups for future inclusion in the critical care nursing standards.

- Using the new Ontario standards as a basis, develop a standardized core curriculum for basic education of new critical care nurses.

- Work collaboratively through partnership with employers and educators to define a career path for the critical care nurse specialization in the province and nationally.

Government

- Form a high level multi-sectoral planning committee consisting of MOHLTC and MTCU representatives to strategize integration of a critical care nursing specialization program into existing educational structures in the province.

- Evaluate critical care nursing education capacity at the LHIN level and bring regional and local experts together to discuss strategies for improvement.

- Continue to fund critical care nurse training on an annual basis through the Critical Care Secretariat and make fund allocation contingent upon implementation of standardized critical care nursing education and hospital/college partnerships.

Researchers

- Develop databases and human resource forecasting tools to support the planning, production, utilization and management of a competent, reliable critical care nursing workforce.

- Design and conduct studies to evaluate the effectiveness of strategies employed by the Critical Care Secretariat to develop, maintain and continue to build a competent critical care nursing workforce.

- Conduct environmental scans and identify strategies to increase efficiency and improve the critical care work environment, workforce health and productivity.

Introduction

Hall's Model of Human Resource Development (Hall, 1993) has long been the basic framework that underscores much of the research activities undertaken by the Nursing Health Services Research Unit at both the McMaster University and University of Toronto sites. Although significant development of the model has taken place due to on ongoing research over the past 15 years, specifically as it applies to health and nursing, the three major elements outlined by Hall in 1993 continue to be at the core. These include human resource planning, production and management. Ideally, these components function as an ongoing cyclical process and are evaluated and updated regularly rather than merely in times of crisis.

Hall (1993) defines health human resource planning as the process of estimating the number of health personnel and the kind of knowledge, skills and attitudes they need to achieve predetermined health targets. Health human resource planning is concerned with having the right people in the right place, doing the right things and having the right expertise. Over the years, it has been broadened to include formulating health human resource policy. Health human resource production involves educational preparation of a workforce at both the basic and post-basic level. It focuses on activities such as assessment of the quality and quantity of existing and proposed training programs including curricula and programs, physical facilities, faculty, attitudes of students, applicant pool, type and number of graduates, enrolment and outcomes. Health human resource management takes into account the work environment. It covers all matters related to the employment, utilization, evaluation and motivation of all categories of healthcare workers within the workplace. The major focus of this project was to study the present production of critical care nurses in Ontario.

Health human resource planning is concerned with having the right people in the right place, doing the right things and having the right expertise.

Like many jurisdictions, Ontario is facing a significant demographic challenge with respect to the continued provision of critical care services. In addition to anticipated population growth, aging of the baby boomer generation is expected to exert increased pressure on these services over the next two decades. A study conducted for the Ministry of Health and Long-Term Care (MOHLTC) by the Institute for Clinical and Evaluative Sciences (Scales & Gomes, 2007) estimates that the number of critically ill, mechanically-ventilated patients will double by 2026. At present, Ontario has approximately 1,800 critical care beds spread across 90 hospitals and current capital expansion plans envision opening another 130 beds by 2015/16 (Ontario Critical Care Local Health Integration Network [LHIN] Leadership Table, 2007). A key vulnerability in these expansion plans is the availability of the corresponding critical care workforce. The nursing workforce requirement is particularly heavy in critical care units. The elevated nurse/patient ratios and the use of advanced technology require a high volume of nurses with specialized knowledge and skill.

Ontario is facing a significant demographic challenge with respect to the continued provision of critical care services.

While decision makers have increasingly good data on the nursing workforce, there is little or no statistical evidence with which to make projections about the critical care nursing workforce. Neither national nor regional databases provide sufficient detail. The College of Nurses (CNO) databases provide statistics on numbers of nurses in acute care, but do not record data on specialized nurses' production, utilization and/or management. In an effort to better understand and plan for sufficient competent critical care personnel to meet growing service demand, the Critical Care Secretariat of the MOHLTC has made health human resource planning a major priority. As a result, new provincial standards for the practice of critical care nursing have been developed.

There is little or no statistical evidence with which to make projections about the critical care nursing workforce.

This study focuses on the extent to which these new standards have been incorporated into selected hospital and college-based critical care nursing education programs in Ontario. Additional areas of

exploration include the quality of production of competent critical care nurses to meet the growing service demands and development of an improved understanding of how these nurses are utilized and managed in the system. This study provides a springboard for further research that will support overall nursing and health human resource planning in the future.

Background to the Study

In 2004/2005, the MOHLTC launched the Critical Care Transformation Strategy to improve quality of care and system performance in adult critical care services. Strong emphasis was placed on investments to improve access, quality and system level resource management. One of the main recommendations from the Final Report of the Ontario Critical Care Steering Committee (2005, March) was that "professional staff working in critical care should be required to meet provincially recognized standards and core competencies." The Committee also identified the need for consistency of nurse training in critical care to support the recruitment and retention of critical care nurses. Since training programs vary across the province, all staff who complete training may not have the same competencies. The Nursing Secretariat and Critical Care Secretariat of the MOHLTC have formed a partnership to address issues pertaining to critical care nursing in a manner consistent with the Nursing Secretariat's overall leadership for nursing in Ontario. Through this partnership, the MOHLTC will implement key recommendations of the Ontario Critical Care Steering Committee.

The Critical Care Steering Committee formed the Ontario Critical Care Expert Panel to address specific concerns related to the delivery of critical care.

In early 2005, the Critical Care Steering Committee formed the Ontario Critical Care Expert Panel to address specific concerns related to the delivery of critical care. Recognizing that successful recruitment and retention of critical care nurses is essential for improving access and quality, the Expert Panel established the Critical Care Nurse Training Standards Task Group in October 2005 to more closely assess critical care nursing education needs in the province. The Task Group brought together critical care nurse leaders from across the province. The chief mandate was to identify and articulate adult critical care core competencies and training standards for Ontario. The group conducted an initial survey of all critical care units in the province and visited selected sites to determine what nursing standards, if any, were being used. Considerable variation was identified in the duration of didactic and clinical training in both college and hospital-based critical care nurse education programs. Hospital-based programs averaged three weeks training in the surveyed critical care units across the province. In most cases, training was not portable from one hospital to another, and critical care nurses were required to repeat training programs when they moved to another hospital. The availability of college-based programs varied by region and the majority were located in Southern Ontario. College-based programs also differed in duration, content and teaching methods (Critical Care Secretariat, 2006a). Clearly, there was a need for standardization of critical care nursing education programs.

The Task Group developed a set of Critical Care Nursing Standards (CCNS) (Critical Care Secretariat, 2006b) based on the practice standards of the Canadian Association of Critical Care Nurses (CACCN) (2004) and the CNO (2005). The Task Group recommended that selected critical care nursing education programs in the province be evaluated against these new standards. It proposed that the evaluation should determine the extent that the new standards had been incorporated into the theoretical and clinical components of selected

hospital and college programs. Further, the Task Group suggested that the MOHLTC should provide support for nurses and hospitals to meet the core competencies identified in the standards. It was thought that a made-in-Ontario solution should include a strong, flexible, college-based critical care training program in consultation, coordination and/or partnership with local hospitals to determine the design, content and timing of critical care courses (Critical Care Secretariat, 2006b). It was hoped that this approach would reduce the practice-theory gap, decrease duplication of costs and support development and production of a competent, critical care nursing workforce. In August 2006, the Minister of Health accepted the Task Group's recommendations. The Nursing and Critical Care Secretariats are working in partnership to implement initiatives based on the Task Group recommendations. The government is committed to providing system supports to improve critical care education for nurses and assist hospitals in meeting their human resource needs for safe and accessible care.

The Task Group suggested that the MOHLTC should provide support for nurses and hospitals to meet the core competencies identified in the standards.

In March 2007, the Nursing and Critical Care Secretariats commissioned researchers at the Nursing and Health Services Research Unit (NHSRU), McMaster University site, to conduct a collaborative evaluation of selected hospital and college-based critical care nursing education programs in the province against the newly formulated CCNS.

Purpose of the Study

The purpose of the study was to determine the extent to which the newly created critical care nursing standards were incorporated into selected hospital and college-based critical care nursing education programs across the province.

The objectives of the study were as follows:

- To gain stakeholder input into the new standards including their relevance to practice and education, the enablers and challenges to implementing them and how to evaluate the programs to determine the extent to which the standards exist in current programs.
- Develop a survey instrument based on input from the focus groups and the new standards to evaluate all current college-based and selected hospital-based critical care nursing education programs.
- Conduct a survey of all of the identified programs using the new instrument to obtain a self-evaluation of their own individual curriculum against the new standards.
- Conduct expert panel evaluations of each curriculum, using the same survey instrument.
- Identify areas of strength and gaps in coverage of the new provincial critical care nursing standards.
- Prepare and submit a policy report based on the study to the MOHLTC Critical Care and Nursing Secretariats, to assist in policy decisions about critical care nursing education in the province.

Methodology

Study Design

A mixed methods design, including qualitative and quantitative techniques, was developed for the collaborative evaluation of selected critical care curricula in specific provincial hospitals and colleges. Qualitative techniques included focus groups. The purpose of these focus groups was to gain stakeholder input into and feedback on the newly developed standards and the development of a survey for evaluation of individual curricula against these standards. Quantitative techniques involved a comprehensive evaluation of the curricula of participating organizations to determine the extent to which the new critical care nursing standards were incorporated into each curriculum. To obtain an evaluation of their own curriculum, the participating organizations were surveyed using an instrument developed by the researchers and based on the new standards. Kopcha and Sullivan (2006) have demonstrated the presence of self-evaluation bias, also known as self-presentation bias or social desirability bias, in surveys of curriculum evaluation. They suggest that survey respondents tend to evaluate their own curriculum more positively than that of others. To balance this self-presentation bias, an expert panel of critical care educators and practitioners used the same instrument to conduct other evaluations of these same curricula. Both the self-assessment and the expert panel evaluation were utilized by the researchers in their overall assessment of critical care education programs. The use of quantitative and qualitative techniques and the collection of a wide range of complimentary and confirmatory data facilitated triangulation (Tashakkori & Teddle, 1998). If evidence converges (agrees), one can be reasonably confident that they are capturing a true picture of the phenomena being studied (Gillham, 2000).

The participating organizations were surveyed using an instrument developed by the researchers and based on the new standards.

Sample

Based on input from the Critical Care Nursing Standards Task Group, the Critical Care Secretariat recommended 27 organizations offering/conducting basic critical care nursing education programs in Ontario as study participants. Fifteen organizations were community colleges and the remaining 12 were acute care hospitals, including academic health science centres and community hospitals.

Phase 1: Focus Groups

The purpose of the focus groups was to gain stakeholder input and feedback on the new standards of critical care nursing practice including

- Their relevance and applicability to practice
- Their strengths
- Issues/concerns
- Areas requiring improvement
- Challenges and enablers to implementation
- Feedback on survey development and conduction plans for the next phase of the study

The 27 organizations selected were stratified according to LHIN and type of organization (i.e., hospitals and colleges). One organization was randomly selected from each of 13 LHINs. One focus group teleconference was conducted in each of the 13 selected organizations. Participating organizations included eight hospitals and five colleges. Researchers from the NHSRU at McMaster University initiated the conference calls and led the focus groups.

Phase 2: Curriculum Evaluation

Survey Development

The survey was based on the new CCNS and on input from a series of focus group discussions. The purpose was to measure how well the standards were incorporated in the selected curricula. Following the recommendation of the focus groups, the standards were renumbered and reorganized into five categories to improve logical flow. To facilitate survey development and analysis, the five categories were organized into 11 groupings. A total of 114 items were distributed to their appropriate groupings. Table 1 outlines how the categories were broken down into groupings and the number of items assigned to each category. This structure formed the basis for survey development. A copy of the survey can be found in Appendix A.

The standards were renumbered and reorganized into five categories to improve logical flow.

Table 1: Survey Structure

Categories	Groupings	Items
Category 1: Professional Behaviour and Ethics	1. Professional Issues	11
Category 2: Nursing Competence in Critical Care	2. Legal and Ethical Issues	3
Category 3: Critical Care Unit Structure and Interdisciplinary Teamwork in Risk Management	3. Nursing Competence in the Critical Care Unit	10
Category 4: Caring Communication in Therapeutic and Professional Relationships	4. Critical Care Unit Structure and Interdisciplinary Team Function	5
Category 5: Knowledge, Clinical Skills, Integration and Critical Thinking	5. Professional Relationships and Interprofessional Communication	3
	6. Data Collection and Documentation	9
	7. Data Analysis and Formulation of Nursing Diagnosis	30
	8. Planning Interventions and Formulating a Plan of Care	10
	9. Implementation of a Plan of Care	12
	10. Evaluation of a Plan of Care	8
	11. Developing Therapeutic Relationships with Patients and Families	13

Self-Evaluation of the Curricula

Key critical care nurse educators affiliated with each of the programs participating in the collaborative evaluation were asked to complete a self-evaluation of their critical care nursing curriculum. Survey participants were asked to identify what percentage (0-100%) of each item they thought was covered in their curriculum and whether the item was covered in the theoretical component and/or the clinical component of the course.

Expert Panel Review of Curricula

Five of the experts on the panel were experienced critical care practitioners and educators working in the field.

Using the same survey instrument, a panel of eight experts conducted blind evaluations of the submitted curricula to identify the extent to which the new standards were incorporated. Three experts were NHSRU researchers with critical care and curriculum development experience. Five of the experts on the panel were experienced critical care practitioners and educators working in the field. Each individual curriculum was independently evaluated by two separate expert reviewers who had no previous experience with the curricula they were evaluating. Intra-class coefficients (Norman & Streiner, 2003; Spence-Laschinger, 1992) were calculated to ensure inter-rater reliability

Results

Focus Group Data Collection and Qualitative Analysis

The 13 focus group teleconferences were taped and transcribed. These transcriptions were entered into NVivo 1.3 and thematic analysis was conducted. The results of the thematic analysis are outlined below.

Qualitative Analysis

Participants believed that the standards were comprehensive and well framed. They liked the detail and appreciated their close alignment with the national standards from CACCN and CNO. Many participants recognized the diligence that went into the development of the new standards and had confidence in their effectiveness as a tool to ensure baseline competencies for critical care nurses in Ontario.

A particular strength was the inclusion of competencies such as professional behaviour/ ethics, continuing competence and research.

Strengths

In general, participants liked the comprehensiveness of the standards and described them as "all-encompassing." A particular strength was the inclusion of competencies such as professional behaviour/ethics, continuing competence and research, which emphasized the importance of developing and maintaining skills outside the clinical base. They noted that emphasizing the importance of these skills in critical care nursing practice, would challenge nurses to think outside the realm of their hands-on clinical practice.

Many participants talked about using the standards as a reference guide in the development and assessment of their curriculum, while others described the advantage of using them as a reflective tool to evaluate their current program and improve the quality and relevance of its content.

Credentialing portability was a significant theme that emerged from the interviews. Many participants believed the standards could be used as a catalyst for standardizing critical care curricula across Ontario and increasing nurse movement across organizations.

On a micro level, the standards were seen as a way to normalize expectations within a hospital setting. Participants described the benefit of having a document that identified expectations for the nurse, members of the health care team and the health care setting. Participants appreciated the inclusion of an evaluation component in the standards and believed they laid the groundwork for performance reviews. They also suggested that provincial standards would facilitate a better performance review that could follow the nurse as she moved across organizations in the province.

Participants described the benefit of having a document that identified expectations for the nurse, members of the health care team and the health care setting.

The standards were considered of great value to hospitals and colleges. Participants believed that the standards allowed them the flexibility to develop a critical care program specific to their organization and provide the structure to ensure content consistency across the province.

Issues/Concerns Emanating from the Review of the New Standards

Issues raised by participants regarding the new standards of practice included:

- The flow and organization of the standards document.
- The relevance of some of the categories and their applicability to all organizations.
- The ambiguity surrounding employer/college responsibility for teaching certain standards.

Participants were pleased with the detail and depth of the standards.

Participants were pleased with the detail and depth of the standards, although they believed they could be better organized to enhance the flow and readability of the document. However, this was considered a minor issue rather than a significant weakness.

Many organizations believed that some criteria listed in the standard categories were not applicable to their organization. For example, colleges identified outcome standards 2, 3 and 5 (Structure of the Critical Care Unit) as competencies that would be included in a hospital orientation program but not relevant to college programs. They questioned their role in teaching this competency in their educational programs.

Hospitals believed that some of the skills identified (e.g., intra-aortic balloon pumping) were not practiced in all critical care units. Therefore, nurses working in those hospitals would not be able to acquire or maintain competency in those skills.

Responsibility/accountability for teaching theoretical versus clinical parts of the curriculum was discussed. Concern was expressed over how accountability would be assigned.

Participants identified gaps in criteria and provided feedback on how to improve these areas. An overview of suggested gaps in the standards is outlined below:

- Patient safety should be more clearly identified (outcome standard 4).
- More emphasis should be placed on the role of the critical care nurse in disaster and pandemic planning and emergency preparedness.
- More emphasis needs to be placed on infection control in critical care.
- An ongoing performance appraisal system based on the standards needs to be created to ensure that competencies are maintained (outcome standard 5.4).
- Enhancing criteria to emphasize both the patient and the patient's family as the client (outcome standard 8).
- A statement that 'the nurse recognizes the patient as a unique individual' needs to be added to Outcome standard 7.1.
- More attention needs to be given to leadership as a role for the critical care staff nurse.
- More attention needs to be given to the role of the critical care nurse in research.

Enablers to Implementation of the New Standards

Participants identified several key factors that would aid in the implementation of the standards across all organizations:

- Participants believed that because the standards are aligned with the CACCN standards, implementation of the new provincial standards should be easy for most organizations.
- Forming equitable partnerships between hospitals and colleges was identified as necessary to enable successful implementation of the new standards of practice. If colleges were flexible in scheduling courses and hospitals ensured that new hires were required to obtain certification within a set time, they could deliver programs that would satisfy the needs of each organization.
- Hiring instructors who are active in clinical practice was seen as a factor in ensuring the standards would be used to develop consistent and effective curricula across the province. By maintaining currency in the clinical setting, instructors would be better equipped to teach the standards and ensure competencies were maintained in both hospital and educational environments.
- Participants were pleased to have a document that clearly defined what is needed to move forward in critical care education; however, a number of challenges must be addressed.

Challenges to Implementation

Resources (both human and fiscal) were identified as a major challenge in implementing the new standards:

- Many nurses cannot take time off work to for continuing education unless financial support is available. Scheduling flexibility and funding is required to enable nurses to take the courses.
- Computer/online educational systems are required for nurses to take online courses.
- Supplementary nursing staff is needed to cover shifts for nurses taking courses.
- The time required to address all the standards was seen as a challenge for many organizations, especially hospitals.
- Older nurses refusing to upgrade to meet the new standards of practice.
- New graduates lacking the experience needed to work in critical care units.
- The need to upgrade mentors/preceptors (additional education and training) to bridge the gap between theory and practice in the clinical teaching environment.
- The need for workforce planning to successfully implement the new standards of practice.

The Need for Partnerships Between Colleges and Hospitals

Four key issues were identified:

1. Size of Student Population: Colleges described the low numbers of students as a challenge in maintaining funding for their programs. They argued that many nurses are trained on-site in hospitals and some do not feel compelled to participate in certification programs beyond their hospital orientation.

College based participants believed hospital training was a costly endeavour that should be taken over by educational institutions. Hospital participants argued that the timing of college programs was problematic. Hospitals were forced to provide in-house training because the employment needs of hospitals did not coincide with the academic year.

Many nurses are trained on-site in hospitals and some do not feel compelled to participate in certification programs beyond their hospital orientation.

2. Curriculum: The curriculum was a contentious issue between colleges and hospitals. Colleges believed that the hospitals do not have as high curriculum development standards as college-based programs. Conversely, hospitals believed that college programs are too broad based and do not provide nurses with the clinical skills needed to practice in a critical care environment.

3. Funding Timelines: Limits placed on funding by the MOHLTC are a barrier to both the partnering of hospitals and colleges and the implementation of the new standards in general. For example, if funding is provided in March and hospitals are required to spend it by June, college-based programs which run September to May are not a viable option for nurses.

4. Technology: A number of colleges around the province are equipped with simulation (SIM) labs that are used for teaching clinical skills outside the hospital setting; however, hospitals have difficulty obtaining access to these labs. Due to lack of available space and the costs involved, hospital organizations were interested in using the SIM labs rather than purchasing their own. Hospital participants asked that they be given priority to use the SIM labs as needed and on an equal time basis (i.e., Monday-Friday day time hours).

Collaborative Evaluation of Curricula

Twenty-four of the initial 27 organizations responded to the self-evaluation survey and submitted their curricula for expert panel review. Self-evaluation scores were averaged with the scores of the two expert reviewers in order to obtain a balanced scoring of each individual item and overall mean compliance by grouping and by item.

Hospital and College Rankings of Overall Mean Compliance with Critical Care Nursing Standards

Self-evaluation respondents and panel experts were asked to evaluate the curricula by assessing each individual item in the survey for its level of compliance on a scale from 0% (noncompliant), 25%, 50%, 75% and 100% (fully compliant). In addition, they were asked to identify if a particular item was covered in theory, clinical or in both. In order to rank organizations according to percent compliance with the CCNS, the percentage points were converted to a five-point Likert scale where 1 equalled noncompliance and 5 was full compliance. Figure 1 shows the mean compliance ranking of hospitals as evaluated by self, expert reviewers 1 and 2 and then an overall mean compliance ranking of all three evaluations.

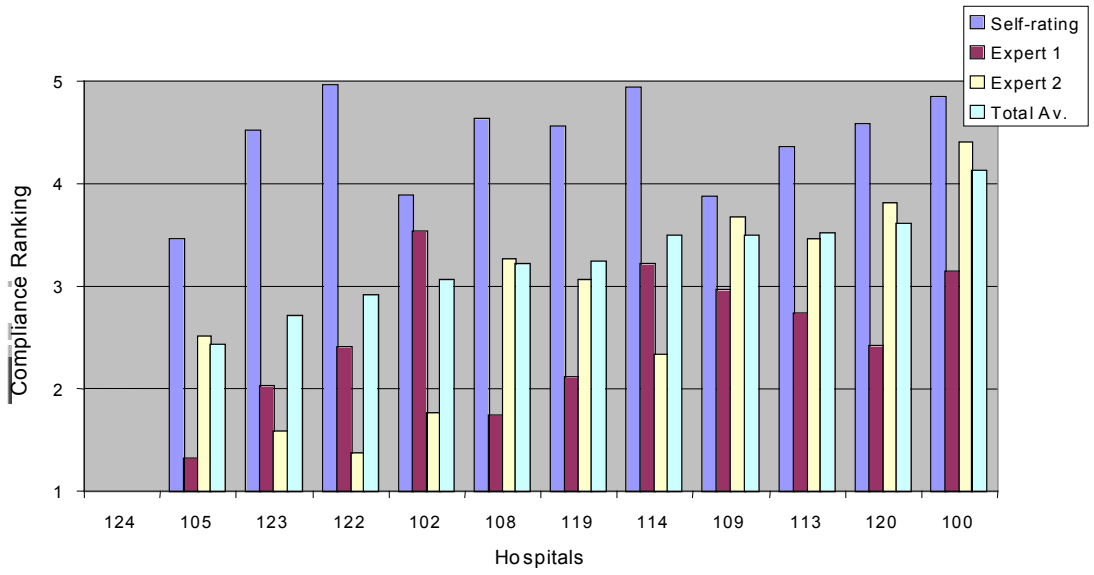

Figure 1. Ranking of Evaluations of Hospital Compliance with Standards

Self-ratings in all instances are higher than the experts. This is expected given that individuals know their own programs better than others and self-evaluate with this knowledge. This may also be attributable to some self-evaluation or self-presentation bias. The experts could only evaluate curricula/programs on the information provided in the curricula submissions. For these reasons it was necessary to average the self-ratings with the expert reviewer ratings. Figure 2 below is extracted from Figure 1 and outlines the ranking of overall mean compliance with the standards by hospital.

The experts could only evaluate curricula/programs on the information provided in the curricula submissions.

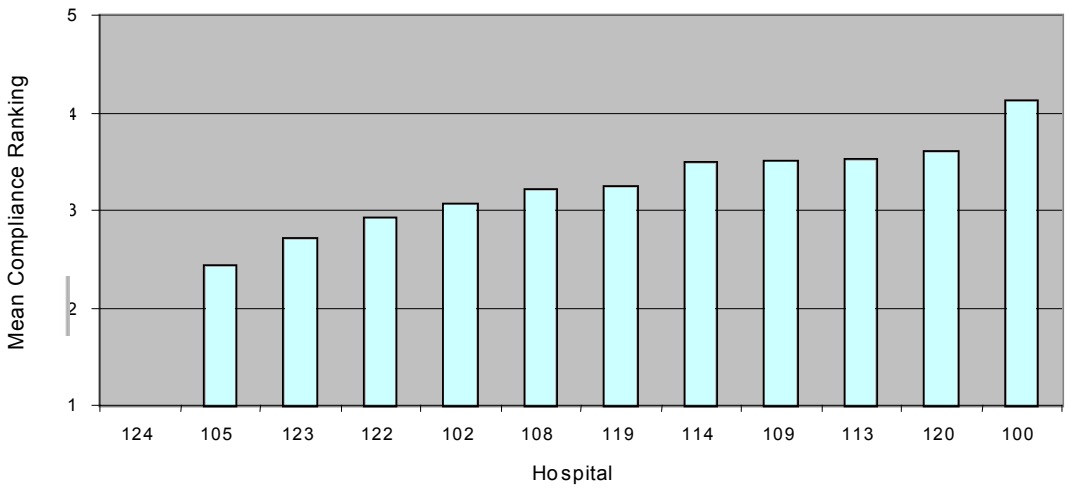

Figure 2. Ranking of Overall Mean Compliance with Standards by Hospital

Few of the hospital programs are in full compliance with the standards. This may reflect that the new standards have only recently become part of the public domain and will require more time for integration into programs. Hospital 124 is an outlier because it is a small community hospital that contracts critical care education to a large teaching centre in the region. It does not have a curriculum of its own but wished to be part of the study.

Figure 3 demonstrates the mean compliance ranking of colleges as evaluated by self, expert reviewers 1 and 2 and then an overall mean compliance ranking of all three evaluations.

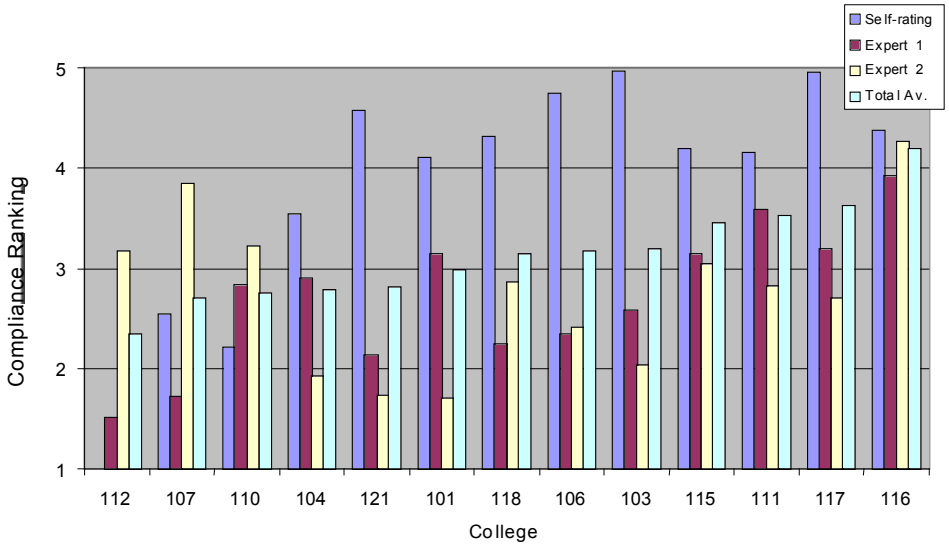

Figure 3. Ranking of Evaluations of College Compliance with Standards

Again, self-ratings in most instances are higher than the expert evaluations, most likely for the same reasons outlined for the hospital participants. The expert reviewers could only evaluate curricula/programs on the information provided in the curricula submissions and did not have the same level of familiarity with the curricula as the self-evaluators. It should be noted that College 112 was unable to complete a self-evaluation for reasons cited earlier in the report. Therefore, overall mean ranking was calculated using expert panel reviews only. Consequently, their ranking could not be considered a fair or accurate comparison to other colleges. Figure 4 is extracted from Figure 3 and outlines the ranking of overall mean compliance by college. Similar to the hospital programs, few of the college programs are in full compliance with the new standards.

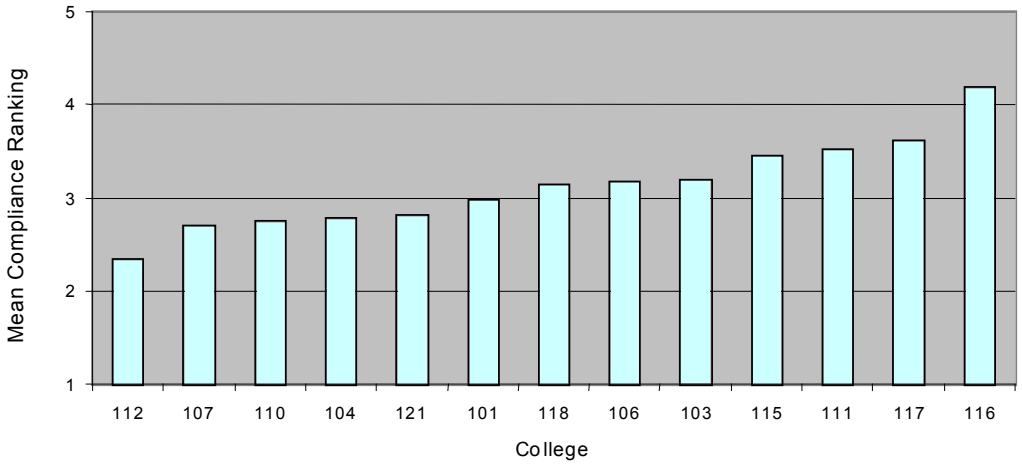

Figure 4. Ranking of Overall Mean Compliance with Standards by College

College and Hospital Mean Compliance by Groupings

Data at the grouping and item levels were analyzed by calculating mean percent compliance. Overall means of the three evaluations were calculated at the grouping and individual item level. Figure 5 shows the groupings that have scored below the 50% range in both the colleges and hospitals. The following groupings were identified as gaps in compliance that require revision in most curricula in order to meet standards:

- Professional Issues
- Maintenance of Nursing Competence in Critical Care
- Critical Care Unit Structure
- Evaluation of a Plan of Care
- Development of Therapeutic Relationships with Patients and Families

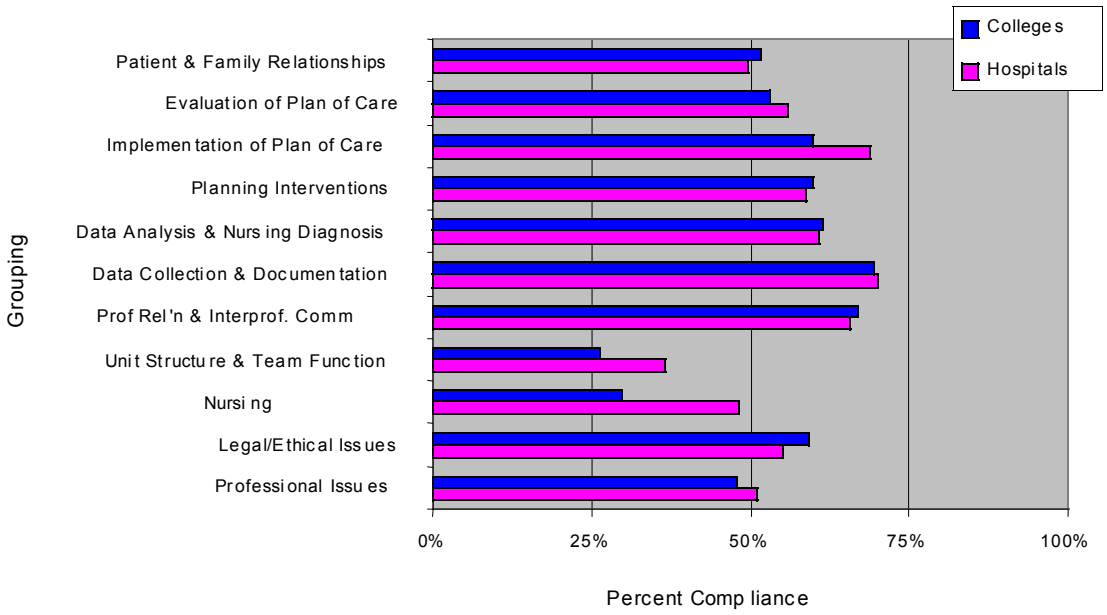

Figure 5. Mean Compliance with Standards by Grouping: Hospitals vs. Colleges.

Some curricula were systems and skills-based and did not reflect the format and content of the new standards. None of the 11 groupings reached a 75% mean compliance level in either the hospital or college programs. Some individual programs have achieved higher levels of compliance in all or some of the groupings, but many have not. Again, this may reflect an evaluation process based on the new standards which, to date, are not yet fully integrated into the public domain. To provide the detail necessary for improvement, all groupings that scored below or close to the 50% range have been identified. The following section outlines mean compliance in each grouping broken down by item.

Hospital and College Mean Compliance by Item

To gain a more in depth understanding of which items in each grouping were of specific concern, the researchers examined every item. The overall mean compliance was calculated on each item to discover where gaps in each curriculum existed. Understanding the gaps in compliance at both the grouping and item level demonstrates exactly where the curricula need to be revised and/or improved. The report summarizes the gaps identified. However, each organization will receive a complete report of the findings on their own curriculum that will provide the opportunity to compare themselves against system means. Because all organizations agreed to share their individual reports with the Critical Care Secretariat, all individual reports will be combined in a confidential addendum to be submitted directly to the Critical Care Secretariat along with this report. Each of the 11 groupings is discussed in detail below and gaps in compliance are identified.

Understanding the gaps in compliance at both the grouping and item level demonstrates exactly where the curricula need to be revised and/or improved.

Category 1 - Grouping 1: Professional Issues

This grouping deals with professional issues specific to the practice of critical care nursing. Eight of the 11 items in this grouping fell below 50% compliance with the CCNS. Figure 6 depicts the mean compliance by item for both hospitals and colleges. Items 1.4, 1.5 and 1.6 address confidentiality, privacy and reporting of any infractions. There was little variation between hospital and college mean compliance on these items. Items 1.7 and 1.8 concern notification of reportable incidents both internally and externally. Hospital compliance was

There was little variation between hospital and college mean compliance on these items.

somewhat higher than college compliance but still below the 50% compliance level. Items 1.9, 1.10, 1.11 deal with responding to environmental, physical and psychosocial stress factors and contributing positively to the image of critical care nursing and the critical care unit. College compliance was higher in all these items and was slightly above the 50% compliance level.

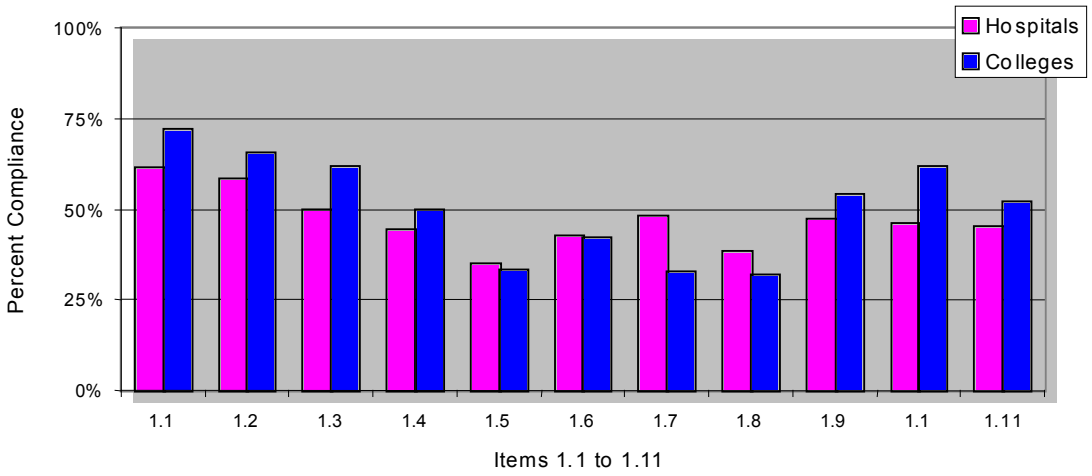

Figure 6. Mean Compliance by Item in Professional Issues Grouping: Hospitals vs. Colleges

Category 1 - Grouping 2: Legal/Ethical Issues

This grouping contains only three items. Figure 7 shows that all were above the 50% compliance level. Although this area may require attention in future curriculum revision, it does not represent a major gap in the curricula in this aggregate analysis.

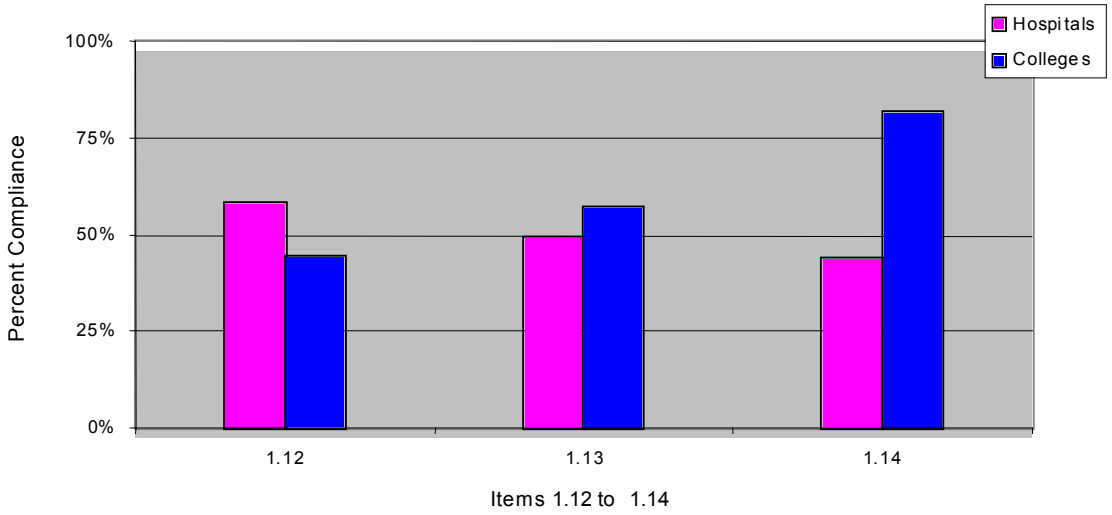

Figure 7. Mean Compliance by Item in Legal/Ethical Issues Grouping: Hospitals vs. Colleges

Individual organizations may fall below the 50% compliance level and may need to address this to achieve better compliance with the standards.

Category 2 - Grouping 3: Nursing Competence in Critical Care

This grouping of 10 items addresses hospital responsibilities in recruiting, hiring and retaining qualified personnel, as well as the responsibility of nurses and hospitals to maintain nursing knowledge and skill and provision of orientation, continuing education and regular performance appraisals in critical care areas. As shown in Figure 8, hospitals scored higher than colleges on all of these items, particularly in 2.5 (providing orientation for new critical care nurses where they are supernumerary) and 2.6 (providing a standards-based orientation for new critical care nurses). The overall average for both colleges and hospitals was below 50%. This represents a gap in compliance and needs to be enhanced in future curriculum revision.

The overall average for both colleges and hospitals was below 50%.

Category 3 - Grouping 4: Critical Care Unit Structure and Interdisciplinary Team Function

The items in this section had the lowest overall scores. Figure 9 demonstrates very low compliance levels on almost every item in the grouping. Only item 3.5 (consulting with other members of the health care team regarding safety measures for the patient, family, and members of the health care team when developing, implementing and evaluating the plan of care) scored 50% and showed college and hospital levels of compliance as exactly the same. The other four items dealt with the Critical Care Committee and its role and functions in overall management and operations of the critical care unit. Hospitals scored somewhat higher than colleges at 25% mean compliance. This grouping and its individual items indicate a major gap in critical care curricula that will require attention in future revision.

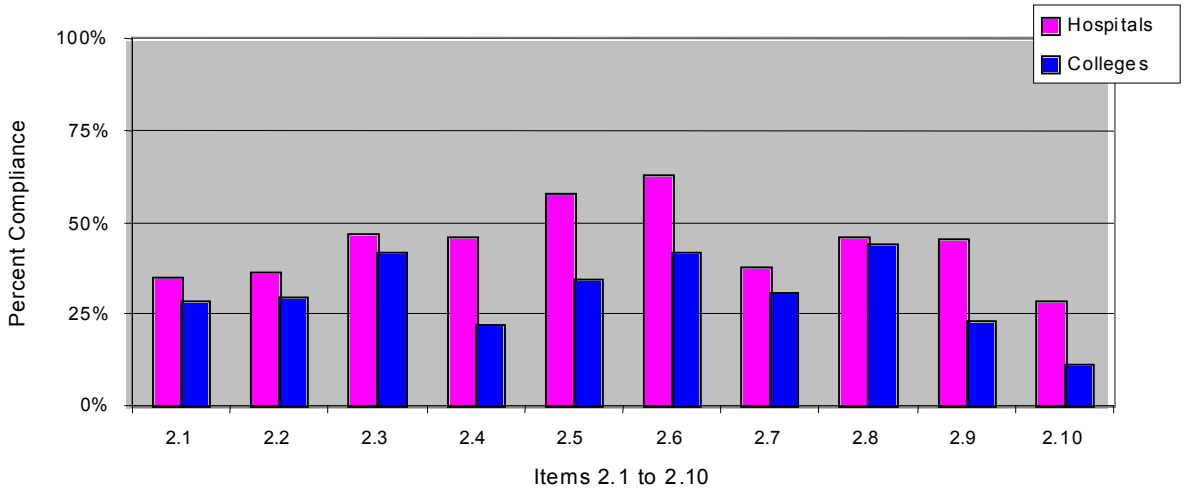

Figure 8. Mean Compliance by Item in Nursing Competence in Critical Care Grouping: Hospitals vs. Colleges

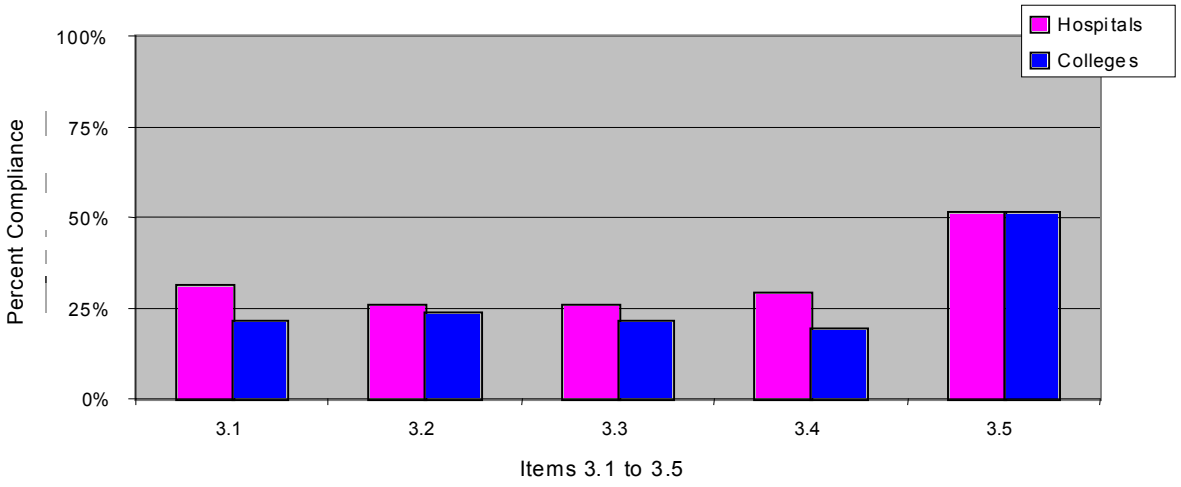

Figure 9. Mean Compliance by Item in Critical Care Unit Structure and Interdisciplinary Team Function Grouping: Hospitals vs. Colleges

Category 4 - Grouping 5: Professional Relationships and Interprofessional Communication

Hospitals and colleges both scored above 50% on all three but never above 75%.

This grouping dealt with curriculum content related to interdisciplinary team communication within the clinical setting and the extent to which professional roles in the planning and provision of safe patient care were complementary. Figure 10 demonstrates a level of compliance by item. There were only three items in this grouping. Hospitals and colleges both scored above 50% on all three but never above 75%. Colleges scored higher in all instances with 75% compliance on item 4.2, which involved collaborating with patient, family and other health professionals to establish an individualized, holistic plan of care.

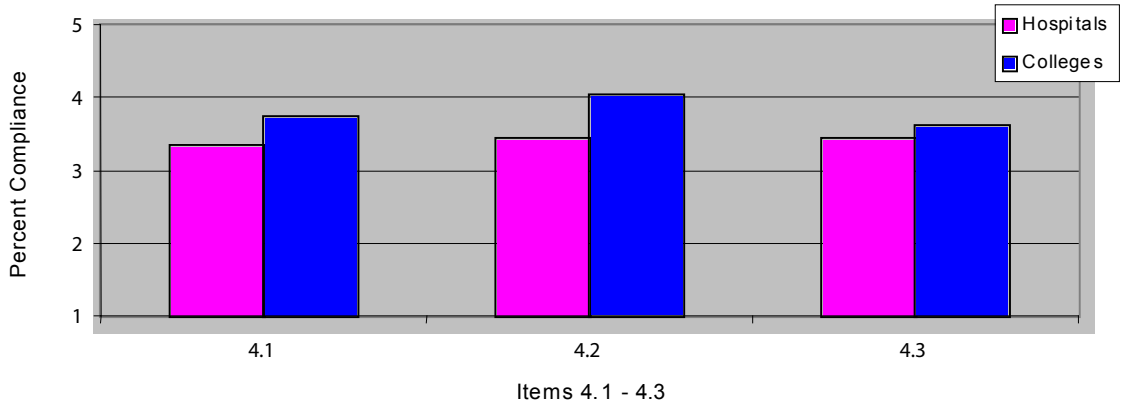

Figure 10. Mean Compliance by Item in Interprofessional Relations & Communication Grouping: Hospitals vs. Colleges

Category 5 - Grouping 6: Data Collection and Documentation

This grouping addresses the first step of the assessment process and involves the skills and techniques of patient data collection and documentation in critical care. Figure 11 demonstrates compliance levels with the items in this grouping. There was greater compliance with the standards in this grouping. All items scored at 50% or above for both hospitals and college programs, indicating relatively good compliance. The score was 75% or above on items 5.1, 5.2, 5.5, 5.6 and 5.7. Items 5.4, 5.8 and 5.9 scored lower on compliance than all other items. Although they are at 50% compliance, they may need to be addressed in future curriculum revision. This includes recognizing when to increase comprehensive data collection and gathering data regarding infection control risks.

All items scored at 50% or above for both hospitals and college programs, indicating relatively good compliance.

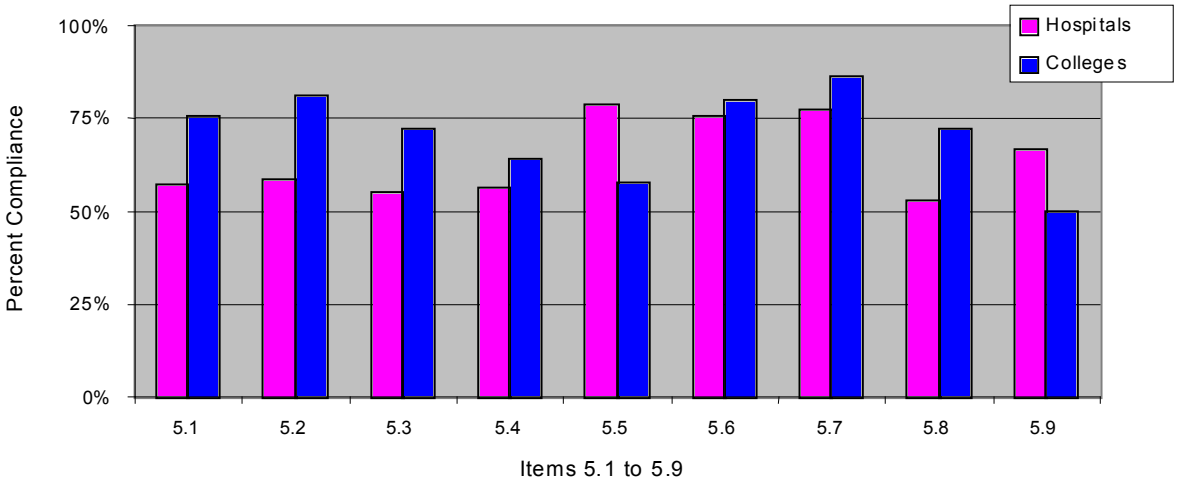

Figure 11. Mean Compliance by Item in Data Collection and Documentation Grouping: Hospitals vs. Colleges

Category 5 - Grouping 7: Data Analysis and Formulation of Nursing Diagnosis

This particular grouping involves the second step of nursing assessment of critically ill patients. It entails learning of the assessment, documentation and interpretation of all data collected and the analysis of unexpected findings. Based on this analysis, the critical care nurse learns to set priorities for care. This is the largest grouping and contains 30 items. Figures 12 and 13 depict the average level of compliance by item. The overall average for the grouping was above 50%. However, in 10 items in the grouping, either the colleges and/or the hospitals were below the 50% compliance level. Figure 12 shows mean compliance levels for the first 15 items (5.10 to 5.24). Those that fall below the 50% mean compliance level are listed below.

The overall average for the grouping was above 50%.

Item 5.18 - Alterations in Integumentary Tissue Perfusion: Hospitals were above 50% compliance, colleges were not.

Item 5.21 - Ineffective Thermoregulation: Hospitals were 50% compliant, colleges were not.

Item 5.24 - Alteration in Immunologic Function: Both hospitals and colleges were below the 50% compliance level.

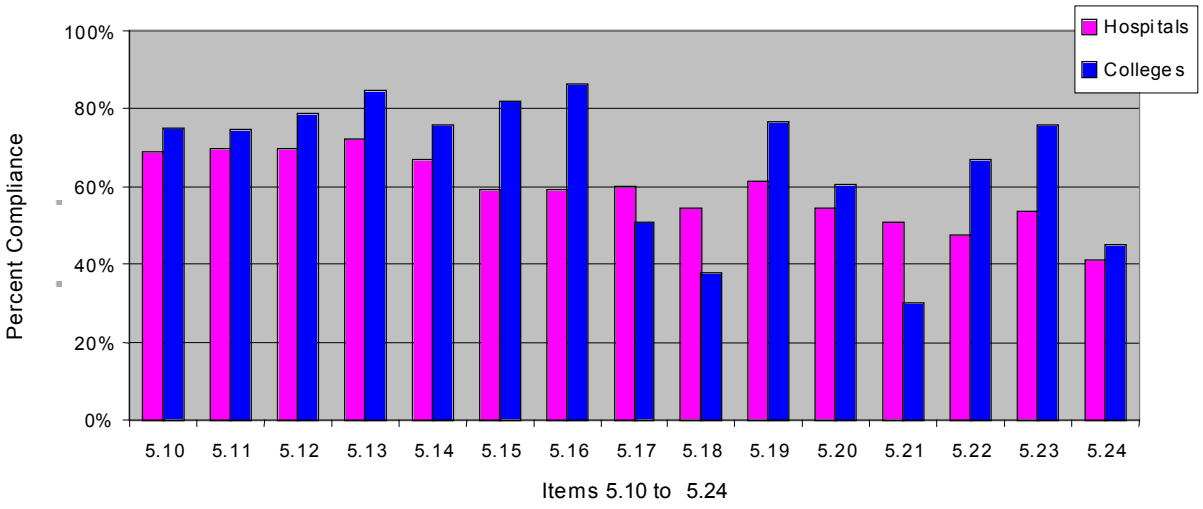

Figure 12. Mean Compliance by Item in Data Analysis and Formulation of Nursing Diagnosis Grouping: Hospitals vs. Colleges

Item 5.25 - Alteration in Hematological Function: Colleges were above the 50%, compliance level, but hospitals were not. Figure 13 outlines the average compliance of items 5.25 to 5.39. All items that are less than 50% compliance are listed below.

Item 5.28 - Altered Family Process: Both hospitals and colleges were below the 50% compliance.

Item 5.30 - Manifestations of Abuse: Both hospitals and colleges were only in the 25% range of compliance.

Item 5.32 - End of Life Withdrawal of Treatment and/or the Execution of Advanced Directives: Colleges were above 50% compliance, but hospitals were not.

Item 5.33 - Organ Donation and Transplantation: Hospitals scored above 50%, colleges did not.

Item 5.39 - Integrate All Findings From the Assessment to Identify Collaborative and/or Independent Nursing Diagnoses: Colleges were above 50% compliance, hospitals were not.

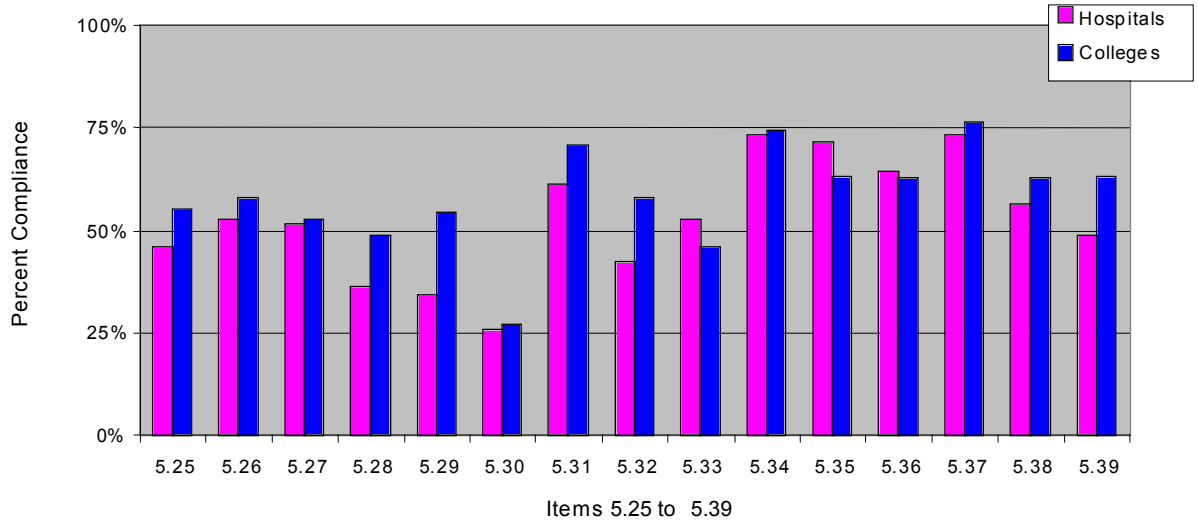

Figure 13. Mean Compliance by Item in Data Analysis and Formulation of Nursing Diagnosis Grouping: Hospitals vs. Colleges

Category 5 - Grouping 8: Planning Interventions and Formulating a Plan of Care

This grouping involves planning interventions for critical care patients based on actual and potential nursing diagnoses and formulating a plan of care in collaboration with other members of the health care team, the patient and the family. The overall average was above 50% compliance for the grouping, but individual items fell slightly below this level. As can be seen in Figure 14, the items of concern include 5.43, 5.46, 5.47 and 5.48. These items are outlined below and will require attention in any upcoming curriculum revision.

The overall average was above 50% compliance for the grouping, but individual items fell slightly below this level.

Item 5.43 - Balancing the Science of Curing with the Act of Caring: Hospitals were below the 50% compliance level and colleges were slightly above.

Item 5.46 - Identifying Realistic and Measurable Expected Patient Outcomes: Hospitals were below the 50% compliance level and colleges were slightly above.

Item 5.47 - Validating the Plan of Care with Patient, Family and Other Members of the Health Care Team: Hospitals were below the 50% compliance level and colleges were slightly above.

Item 5.48 - Identifying Required Resources to Accomplish the Plan of Care: Colleges were below the 50% compliance level and hospitals were not.

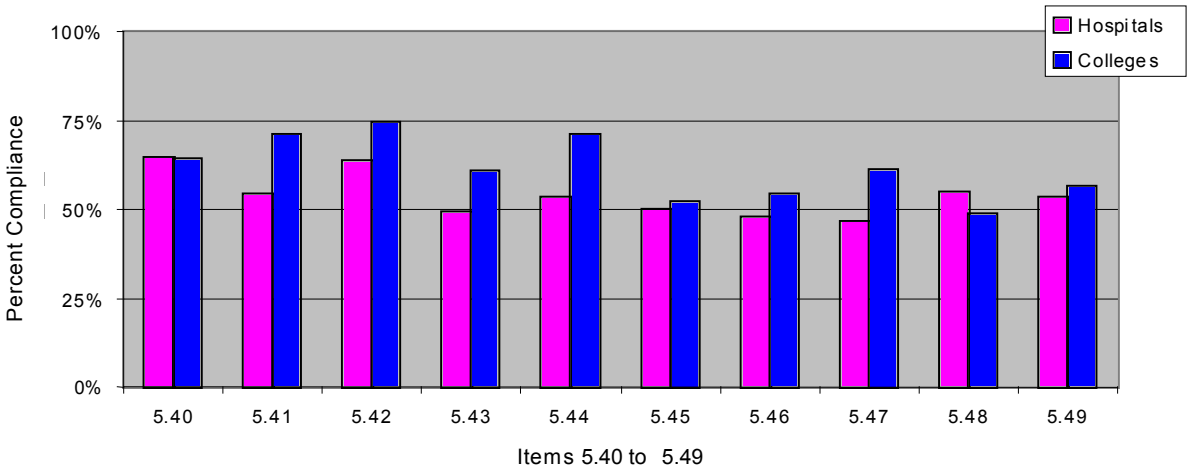

Figure 14. Mean Compliance by Item in Planning Interventions and Formulating a Plan of Care Grouping: Hospitals vs. Colleges

Category 5 - Grouping 9: Implementation of the Plan of Care

This grouping involves knowledge of coordination, implementation and documentation of the plan of care, while reflecting on established priorities and collaborating with patient, family and other members of the health care team. There are 12 items in this grouping and only twice did the score drop below the 50% compliance level. Figure 15 shows the percent compliance by item. All items below a mean compliance of 50% have been listed separately.

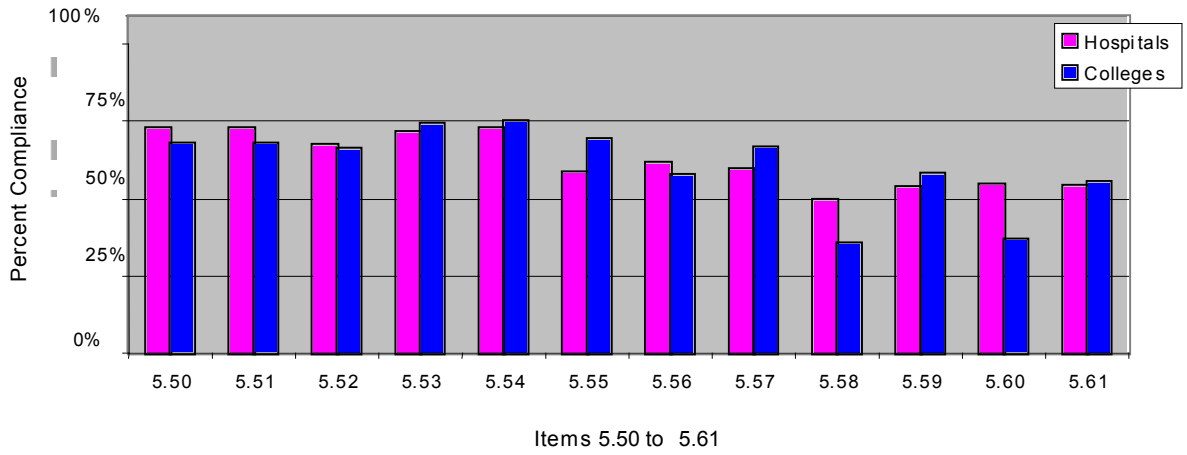

Figure 15. Mean Compliance by Item in Implementation of Care Grouping: Hospitals vs. Colleges

Item 5.58 - Intervening in Ineffective Thermoregulation by Promoting Normothermia: Hospitals reached the 50% compliance level, while colleges were closer to 25% compliance.

Item 5.60 - Intervening to Prevent Complications of Immobility: Colleges fell well below the 50% compliance level, while hospitals were slightly above it.

Category 5 - Grouping 10: Evaluation of a Plan of Care

The importance of the evaluation process cannot be underestimated.

This grouping addresses education around the evaluation and modification of an overall plan of care in conjunction with patient, family and other health team members. There are eight items in this group and the overall score is just above 50%. However, the importance of the evaluation process cannot be underestimated. For this reason, the items that scored below 50% or just achieved 50% compliance in either the college or hospital programs have been extracted from Figure 16 and are listed separately.

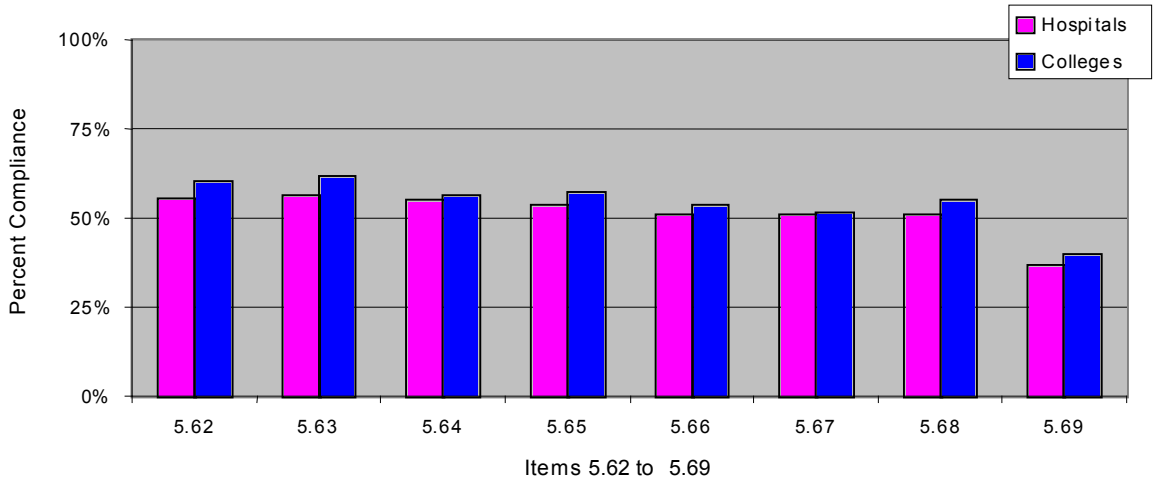

Figure 16. Mean Compliance by Item in Evaluation of the Plan of Care Grouping: Hospitals vs. Colleges

Item 5.66 - Analyzing Gaps Between Actual and Expected Outcomes: Hospitals were only at the 50% compliance level, while colleges were just above it.

Item 5.67 - Rapidly Revising the Plan of Care with the Patient, Family and/or Health Care Team Members and Implementing the Alternatives: Both colleges and hospitals fell below the 50% compliance level.

Item 5.68 - Continually Evaluating the Revised Plan of Care: Colleges scored above the 50% compliance level and hospitals scored right at the 50% level.

Item 5.69 - Participating in Quality Improvements Activities; Both the colleges and hospitals scored below the 50% compliance level and were closer to the 25% level.

Aspects of evaluation were present in other groupings and consistently these areas were either below the 50% compliance level or just above. This area requires more attention in any future curriculum revisions.

Grouping 12 - Developing Therapeutic Relationships with Patients and Families

There are 13 items in this grouping and the overall score is right at the 50% compliance level. However, the importance of the family needs to be addressed and requires greater emphasis in most curricula. This was voiced repeatedly in the focus groups. Figure 17 demonstrates mean compliance by item for this grouping, and the areas below 50% mean compliance are listed. This grouping will require improvement in future curriculum planning.

The importance of the family needs to be addressed and requires greater emphasis in most curricula.

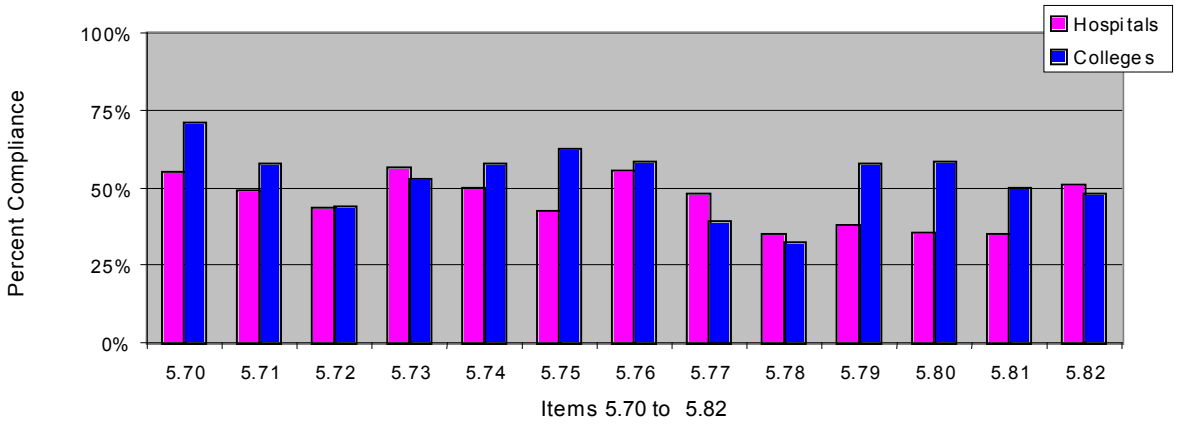

Figure 17. Mean Compliance by Item in the Developing Therapeutic Relationships with Patients and Family Grouping: Hospitals vs. Colleges

Item 5.71 - Facilitating Optimal Family Processes: Hospitals were below 50% compliance.

Item 5.72 - Promoting Realistic Hope for the Patient and the Family: Both colleges and hospitals fell below the 50% compliance level.

Item 5.75 - Facilitating Patient and Family Adaptive Coping with Stressors Related to the Illness and the Environment: Hospitals did not reach the 50% compliance level.

Item 5.77 - Facilitating Patient and Family Access to Resources Internally: Both colleges and hospitals were below 50% compliance.

Item 5.78 - Facilitating Patient and Family Access to Resources Externally: Both colleges and hospitals were below 50% compliance level.

Item 5.79 - Selecting Teaching Strategies Appropriate to the Time Available: Hospitals fell below 50% compliance.

Item 5.80 - Applying Teaching Methods Appropriate to the Patients' and Families' Readiness to Learn and Stage of Growth and Development: Hospitals scored below 50% compliance.

Item 5.81 - Evaluating Learning Outcomes and revising Teaching Methods and/or the Learning Plans as Required: Hospitals were below 50% compliance.

Item 5.82 - Maximizing Patient and Family Participation and Autonomy in Decision Making: Colleges were below 50% compliance.

Theoretical/Clinical Content in Critical Care Nursing Curricula

The content in hospital programs appears to be mostly clinical, while the content in college programs appears to be largely theoretical

In the self-evaluation survey, respondents were asked to identify whether each item in the survey was covered in the theory or clinical component of the course or both. However, due to lack of intimate experience with the curricula, the expert reviewers were not expected to respond to this part of the survey. There was a poor response rate from the self-evaluators with about 30% non respondents. Based on analysis of the available responses, the content in hospital programs appears to be mostly clinical, while the content in college programs appears to be largely theoretical. This is consistent with the focus group discussions.

Conclusions

The CCNS were well received by both colleges and hospitals. All participating organizations agreed they were relevant and a useful tool for developing and maintaining a competent critical care nursing workforce in Ontario. There were suggestions for inclusion of specific items in a future revision:

- Patient safety content
- The role of the critical care nurse in disaster and pandemic planning and emergency preparedness
- Enhancement of criteria to emphasize both the patient and the patient's family as the client
- The clinical leadership role of the critical care staff nurse
- The role of the critical care nurse in clinical and health services research

Questions were raised regarding the feasibility of implementation without added support from the MOHLTC. The issue of accountability was of particular interest as ownership and maintenance of the standards seem unclear at this point.

Accountability is a complex issue in a single system environment. The involvement of two different Ministries (i.e., the MTCU and the MOHLTC) in this process makes it even more difficult to manage. Accountability includes willingness to accept responsibility for one's actions and to justify them to others (British Columbia Teachers' Federation, 2006). This suggests that accountability is something that is internal and is related to a nurse's responsibility to adhere to standards and follow evidence-based, best practice guidelines. However, this may not be sufficient to ensure the delivery of quality service. External accountability mechanisms must also be in place to support operationalization of these standards. External mechanisms (i.e., government, MOHLTC and LHIN initiatives) are instrumental to support this initiative. Internal and external mechanisms will need to be examined together because health and education are part of the provincial legislation and funding allotments.

Although hospitals and colleges have respect for the role each plays in the education of critical care nurses in the province, obstacles impede collaboration between them. Because each is accountable to a different Ministry, they vary in meeting program requirements. They often work independently and sometimes duplicate each another's efforts. Concerns were raised by each organization about their roles and responsibilities in providing an educational program that meets the new standards of practice. In the focus groups, both hospitals and colleges addressed discrepancies in theoretical and clinical content. Hospitals voiced concern about reductions in clinical hours in college-based programs, while colleges expressed concern about a perceived lack of rigor in curriculum planning and insufficient attention to theoretical content in hospital-based programs.

College curricula are reviewed and audited by the MTCU, and program survival is based on a successful review. Colleges were concerned about the quality of hospital programs because they are not subjected to the same rigorous review process that their programs undergo. Conversely, hospitals were concerned about their legal responsibility in hiring competent nurses when the MOHLTC does not ensure that standards are being met within college-based programs. Without clear ownership and the creation of an accountability framework to ensure that standards are being met, hospitals feared that colleges would continue to fall short in the education of a clinically-competent critical care nursing workforce. As a result, they must bear the burden of educating nurses to a level that meets the standards and needs of their own organization. The resulting duplication of programs is neither efficient nor cost effective. Despite these concerns, however, most focus groups agreed that there were strengths in both programs, and any collaboration that brings these strengths together could

only benefit critical care nursing and the delivery of quality critical care services in the province. The hospitals and colleges expressed a willingness to work together in partnership with a view to negotiating a collaborative program acceptable by all. Partnerships between the colleges and hospitals will be required to successfully implement the new standards of practice. Hospitals would welcome a partnership with the colleges that involves the use of college space and technology in an equitable manner. Colleges demonstrated an interest in creating partnerships with hospitals that involves the continued support of nurses to enrol and participate in continuing education programs offered by colleges. Both parties agreed that a partnership would enhance the level of education and training provided to critical care nurses and decrease the duplication of costs across the system.

Based on the demographic analysis of the college and hospital programs in this study, there is great variation in the content, timing, duration, depth and breadth of critical care curricula in the province. It is evident from the findings that many of the programs are not in full compliance with the CCNS. Mean compliance with the standards, at the grouping level, across all organizations remains at the 75% compliance or below. This is not necessarily the case at the item level. At the organizational level, there is significant variation in compliance within and among groupings. A gap analysis based on mean compliance levels was conducted to determine, on average, where curricula are not in compliance with the new standards. Based on the findings of this study, the researchers generated a gap analysis summary that provides a generic picture of the gaps in critical care nursing education in Ontario (see Appendix B). Where groupings and items achieved 50% mean compliance or less, this was considered a gap in compliance with the standards. Because individual organizations will receive reports on their curricula and the Critical Care Secretariat will also receive these reports, all will have the facility to look at organizational compliance against the mean compliance results in this generic report. Consequently, they will be able to analyze the gaps at the organizational level and understand where each needs to upgrade their curriculum to comply with the standards.

In conclusion, the new standards form the template for critical care education in the province. However, curricula in many organizations are not in compliance and there is variability within and among organizations. It is, therefore, not surprising that the credentials are not portable from one organization to another. It may be necessary to take standardization to a higher level. The variation in curricula and low mean compliance with the CCNS highlight the need for some kind of standardized curriculum for beginning practitioners in the specialty. If basic preparation in the specialization is to be portable, all critical care nurses must receive the same educational preparation. Nurses have consistently identified the lack of formal recognition for the education required to begin work in their specialty areas. If educational preparation for the beginning critical care nurse is based on a standardized curriculum, there should be some consideration for formal educational credit, either towards a baccalaureate in nursing or a critical care nursing certificate. Furthermore, the critical care nursing specialization needs to be more clearly defined and a succinct career path for the specialty should be identified and developed.

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Appendix A. Survey Instrument: Critical Care Collaborative Evaluation

Critical Care Standard Survey: College Version A

The Critical Care Standards Questionnaire© (CCSQ) was designed to determine your impression of the extent to which your basic critical care nursing education curriculum incorporates the Standards for Critical Care Nursing in Ontario (2006). By completing this questionnaire you will conduct a self-evaluation of the extent to which your current critical care nursing education program incorporates the newly developed standards of practice. After completing this questionnaire, you have been asked to submit a copy of your curriculum to the NHSRU where it will undergo a blind review by an expert panel of reviewers using the exact same instrument being used here for your self-evaluation. Both the self-evaluation and the expert panel evaluation will be analyzed to determine gaps in meeting the new standards. Data from this questionnaire will contribute to the ongoing development of a standardized critical care nurse education and training program and, ultimately, to portable critical care nursing credentials provincially.

Completion and submission of the questionnaire and voluntary submission of the curriculum documents will constitute implied consent for both the survey and the expert panel review of your curriculum. You have the right to refuse to participate, refuse to answer any questions or withdraw from the study at any time with no effect to you. Data will be securely stored either in locked cabinets or in password protected computer files.

A generic, aggregate report will be prepared and submitted to the Critical Care Secretariat at the Ontario Ministry of Health and Long-Term Care by October, 2007. Each participating institution will receive a copy of the final report which is submitted to the Critical Care Secretariat. You will also receive a report from the research team regarding your individual self-evaluation and expert panel review results. If you are willing to share your individual results of your self-evaluation and your expert panel review with the Nursing Sub Committee (Chairperson: Ms. Jocelyn Bennett) of the Critical Care Secretariat, please indicate below. Please note that this is voluntary; however, agreeing to share results provides a baseline for further Ministry decision making on ongoing allocation of resources for critical care nursing education in the province.

Self-Evaluation Results: ☐ Yes ☐ No

Expert Panel Review Results ☐ Yes ☐ No

Name of Institution: _____ Date_____

STUDY CONTACT INFORMATION:

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Section A: Standards Evaluation (Category 1-5): For each criterion listed below please indicate to what extent each criterion is incorporated in your curriculum by selecting the appropriate percentage level and whether it is covered as theory, or clinical content or both.

CATEGORY 1: PROFESSIONAL BEHAVIOURS AND ETHICS

Outcome Standard 1: The critical care nurse practices within the scope of professional, legal and ethical standards.

Grouping 1: Professional Issues: Critical care nurses are reminded of their professional responsibility for:

	0%	25%	50%	75%	100%	Theory	Clinical
1.1: Maintenance of professional competence through education							
1.2: Involvement in and use of evidence-based research in clinical practice							
1.3: Confidentiality of patient information							
1.4: Confidentiality of family information							
1.5: Reporting of confidentiality infractions							
1.6: Maintaining patient and family privacy							
1.7: Following guidelines for notification of reportable incidents internally							
1.8: Following guidelines for notification of reportable incidents externally							
1.9: Responding to environmental, physical, and psychosocial stress factors which impact interdisciplinary team members in the critical care setting							
1.10: Contributing positively to the image of critical care nursing							
1.11: Contributing positively to the image of the critical care unit							

Grouping 2: Legal and Ethical Issues: Critical care nurses are made aware of their legal and ethical responsibilities in critical care including:

	0%	25%	50%	75%	100%	Theory	Clinical
1.12: Identifying potential candidates for tissue and organ procurement							

1.13: Recognizing the delineation between the practice of critical care nursing and the practice of critical care medicine							
1.14: Recognizing and responding to real and potential legal and ethical issues							

CATEGORY 2: NURSING COMPETENCE IN CRITICAL CARE

Outcome Standard 2: Qualified personnel are provided by the health care facility.

Outcome Standard 5: Opportunities for critical care nurse to maintain the knowledge and skill necessary to deliver safe and knowledgeable nursing care, within the chosen conceptual model of nursing practice, are provided by the health care facility.

To what extent is each criterion incorporated in your curriculum; in theory, in clinical, or both:

Grouping 3: Nursing Competence in the Critical Care Unit: Critical care nurses are made aware of the responsibilities of the health facility in:

	0%	25%	50%	75%	100%	Theory	Clinical
2.1: Identifying criteria for hiring nurses based on the knowledge requirements of the job							
2.2: Identifying criteria for hiring nurses based on the skill requirements of the job							
2.3: Ensuring that staff nurses responsible for direct patient and family care have post-basic preparation and/or experience in critical care nursing							
2.4: Developing in collaboration with the critical care nursing staff written guidelines of the skills required to differentiate novice from expert critical care nurses							
2.5: Providing orientation for new critical care nurses where the orientee is supernumerary							
2.6: Providing orientation for new critical care nurses where the orientation meets critical care nursing standards							
2.7: Establishing/maintaining a current and accessible library of reference materials relevant to the patient population							

2.8: Providing continuing education programs as outlined in the critical care nursing standards							
2.9: Evaluating knowledge and competencies of all critical care nurses in the facility on an ongoing basis							
2.10: Providing regular performance appraisals directly to each staff member according to policy and based on a written job description, resulting in a mutually agreed-upon set of performance goals and objectives for the upcoming year							

CATEGORY 3: CRITICAL CARE UNIT STRUCTURE AND INTERDISCIPLINARY TEAMWORK IN RISK MANAGEMENT

Outcome Standard 3: A Critical Care Committee (CCC) is established by the health care facility.

Outcome Standard 4: Interventions based on actual or potential nursing diagnosis are planned by the critical care nurse in collaboration with other members of the health care team to formulate the overall plan of care.

To what extent is each criterion incorporated in your curriculum; in theory, in clinical, or both:

Grouping 4: Critical Care Unit Structure and Interdisciplinary Team Function in Risk Management: Critical care nurses will learn and understand the importance of the critical care unit structure/function, and interdisciplinary teamwork in risk management including:

	0%	25%	50%	75%	100%	Theory	Clinical
3.1: The structure of the CCC, which includes medical, nursing and allied health representation and a consumer representative, if possible							
3.2: The functions of the CCC							
3.3: The role of the CCC in approving written information regarding the critical care unit including, but not limited to unit philosophy, goals and objectives; organization chart; dependent nursing responsibilities; medical responsibilities; roles and responsibilities of other health professionals in the unit							

3.4: The role of the CCC in approving written policies and procedures specific to the critical care unit including, but not limited to admission, transfer and discharge criteria; fire, disaster and evacuation plans; medication administration; transfer of medical function(s) and shared competencies; protocols for management of specific patient populations							
3.5: Consulting with other members of the health care teams regarding safety measurements for the patient, family and members of the health care team when developing, implementing and evaluating the plan of care							

CATEGORY 4: CARING/COMMUNICATION IN THERAPEUTIC AND PROFESSIONAL RELATIONSHIPS

Outcome Standard 6(12): Based upon knowledge of biological, physical, and behavioural sciences, data are analyzed by the critical care nurse to formulate nursing diagnoses.

Outcome Standard 7(13): Interventions based upon the actual and potential nursing diagnoses are planned by the critical care nurse in collaboration with other members of the interdisciplinary health care team to formulate the overall plan of care.

Outcome Standard 8(14): The critical care nurse implements the plan of care including independent and interdependent nursing functions.
Outcome Standard 9(15): The critical care nurse evaluates patient outcomes in accordance with a conceptual model for critical care nursing and consistent with independent nursing functions.

To what extent is each criterion incorporated in your curriculum; in theory, in clinical or both:

Grouping 5: Professional Relationships and Interprofessional Communication: Critical care nurses are educated on the importance of collaborative interprofessional practice and open, co-operative and clear communication across disciplines including:

	0%	25%	50%	75%	100%	Theory	Clinical
4.1: Reporting and discussing significant findings with other members of the health care team							
4.2: Collaborating with patient, family, and other health care team members to establish an individualized, holistic plan of care							

4.3: Reporting and discussing significant differences between actual and expected outcomes with the appropriate interdisciplinary team members							

CATEGORY 5: KNOWLEDGE, CLINICAL SKILLS, INTEGRATION AND CRITICAL THINKING

Outcome Standard 6(12): Based upon knowledge of biological, physical and behavioural sciences, data are analyzed by the critical care nurse to formulate nursing diagnoses.

Outcome Standard 7(13): Interventions based upon the actual and potential nursing diagnoses are planned by the critical care nurse in collaboration with other members of the interdisciplinary health care team to formulate the overall plan of care.

Outcome Standard 8(14): The critical care nurse implements the plan of care including independent and interdependent nursing functions.

Outcome Standard 9(15): The critical care nurse evaluates patient outcomes in accordance with a conceptual model for critical care nursing and consistent with independent nursing functions.

Outcome Standard 10: Therapeutic relationships with patients and families are developed and maintained by the critical care nurse.

Outcome Standard 11: The critical care nurse collects and documents data regarding the patient's physical, emotional and psychosocial status including any advanced directives at the time of admission to the critical care unit and during the patient's stay.

To what extent is each criterion incorporated in your curriculum; in theory, in clinical, or both:

Grouping 6: Data Collection and Documentation: Critical care nurses will learn the skills and techniques of data collection and documentation in critical care including:

	0%	25%	50%	75%	100%	Theory	Clinical
5.1: Obtaining and documenting a comprehensive health history using all available and appropriate sources in the absence of a patient's ability to communicate							
5.2: Gathering pathophysiological, psychosocial, cultural, developmental and spiritual data bases on the patient's condition							
5.3: Documenting pathophysiological, psychosocial, cultural, developmental and spiritual data bases on the patient's condition							

5.4: Collecting data on a continuous basis, but recognizing selected times when comprehensive/holistic data collection is necessary							
5.5: Collecting laboratory specimens							
5.6: Collecting data using invasive techniques							
5.7: Collecting data using non-invasive techniques							
5.8: Gathering data concerning the family's needs and responses to the health crisis							
5.9: Gathering data regarding infection control risks to patients and staff and takes all the necessary preventative measures to protect against exposure							

Outcome Standard 6(12): Based upon knowledge of biological, physical, and behavioural sciences, data are analyzed by the critical care nurse to formulate nursing diagnoses.

To what extent is each criterion incorporated in your curriculum; in theory, in clinical, or both:

Grouping 7: Data Analysis and Formulation of Nursing Diagnosis: Critical care nurses will learn to assess, document and interpret all data collected, analyze unexpected findings and set priorities for care including but not limited to:

	0%	25%	50%	75%	100%	Theory	Clinical
5.10: Ineffective airway clearance • Epiglotitis • Mucous plug							
5.11: Ineffective breathing pattern • Tension pneumothorax • Flail chest							

5.12: Impaired gas exchange including Upper airway disease • foreign body • croup • epiglottis • postextubation stridor • laryngospasm Lower airway disease • respiratory distress syndrome • acute respiratory distress syndrome • pulmonary edema • bronchiolitis • status asthmaticus • mixed obstruction and restrictive disease • inhalation injuries Ineffective gas exchange • pleural effusion							
5.13: Alteration in cardiac output • Congentital heart defects • Cardiac myopathy • Myocardial infarction • Cardiac tamponade • Congestive failure • Cardiac dysrhythmias							
5.14: Alteration in cerebral tissue perfusion • Head trauma • Cerebral aneurysm • Seizures • Meningitis • Shock • Cerebral vascular accident • Ateriovenous malformation • Cerebral Vasospasm							
5.15: Alteration in gastrointestinal tissue perfusion • Pancreatitis							
5.16: Alteration renal tissue perfusion • Acute renal failure • Congenital							
5.17: Alteration in vascular tissue perfusion • Compartment syndrome • Abdominal aortic aneurysm • Thrombosis							
5.18: Alteration in integumentary tissue perfusion • Burns • Decubitus ulcer							

5.19: Alteration in fluid balance • Sepsis • Ascites • SIADH (Syndrome of Inappropriate Antidiuretic Hormone Secretion) • DI (Diabetes Insipidus) • Hemolytic uremia							
5.20: Alteration in motor and sensory function • Myelomeningocele • Guillain-Barre • Spinal cord injury • Neurogenic shock							
5.21: Ineffective thermoregulation • Malignant hyperthermia • Hypothermia							
5.22: Alteration in liver function • Hepatitis • Biliary atresia • Poisonings							
5.23: Alterations in endocrine function • Diabetic ketoacidosis							
5.24: Alterations in immunologic function • Graft versus host disease • Transplant • Systemic inflammatory response syndrome							
5.25: Alterations in hematologic function • Leukemia • Disseminated intravascular coagulopathy • Heparin-induced thrombocytopenia • Deep vein thrombosis							
26: Altered comfort • Pain • Anxiety • Sleep deprivation • Delirium							
5.27: Impaired communication • Intubated • Neurological deficits • Developmental delay • Sedation							
5.28: Altered family processes • Grief/loss • Guilt • Sudden infant death syndrome							

5.29: Altered family/patient coping • Helplessness • Powerlessness							
5.30: Manifestations of abuse (child, spouse, elder)							
5.31: Altered nutritional requirements							
5.32: End-of-life withdrawal of treatment and/or the execution of advanced directives							
5.33: Organ donation and transplantation							
5.34: The critical care nurse interprets pertinent diagnostic data including • Arterial and venous blood gas • Intracardiac pressures and waveforms (e.g., pulmonary artery, right atrial, left atrial) • Central venous pressures and waveforms • Arterial pressures and waveforms Intra-aortic balloon pressures/waveforms • Homodynamic calculated parameters (e.g., cardiac index, systemic vascular resistance index, pulmonary vascular resistance index) • Cardiac rhythm interpretation (e.g., rate, rhythm, ST elevation, T wave configuration) • Twelve and 15 electrocardiogram changes consistent with myocardial injury, ischemia, or infarction • Pacemaker functions(e.g., sensing and capturing) • Intracranial pressures and waveforms • Cerebral perfusion pressure • Pulse oximetry • End Tidal carbon dioxide • Ventilation information (e.g., tidal volume, minute volume, oxygenation rate, airway pressures, end-tidal CO2) • Ventilation support – bipap – assist control, synchronized intermittent mandatory ventilation, – positive and expiratory pressure, pressure support ventilation,							

– pressure control ventilation, volume control ventilation – high frequency jet ventilation, high frequency oscillation							
5.35: Weaning parameters (e.g., tidal volume, respiratory rate, minute ventilation, vital capacity, work of breathing, anxiety)							
5.36: Oxygen delivery, extraction, consumption							
5.37: Laboratory results: • Arterial blood gas • Complete blood count • Platelets • Coagulation profiles • Serum and urine electrolytes and osmolality • Lactate • Creatinine • BUN • CK-MB • Cerebral spinal fluid • Glucose • Drug levels • Liver enzymes							
5.38: Compare collected data with expected patient responses and validate unexpected findings							
5.39: Integrate all findings from the assessment to identify collaborative and/or independent nursing diagnoses							

Outcome Standard 7(13): Interventional based upon the actual and potential nursing diagnoses are planned by the critical care nurse in collaboration with other members of the interdisciplinary health care team to formulate the overall plan of care.
To what extent is each criterion incorporated in your curriculum; in theory, in clinical, or both:

Grouping 8: Planning Interventions and Formulating a Plan of Care: Critical care nurses will learn to plan interventions based upon the actual and potential nursing diagnoses and collaborate with other health team members, the patient and family to formulate a place of care by:

	0%	25%	50%	75%	100%	Theory	Clinical
5.40: Anticipating and preparing for life-threatening situations							

5.41: Establishing priorities for care with the patient/family							
5.42: Selecting specific nursing interventions designed to achieve expected patient outcomes							
5.43: Balancing the science of curing with the art of caring							
5.44: Incorporating the patient's pathophysiological, psychosocial, cultural, spiritual and developmental needs into the plan of care							
5.45: Formulating measurable immediate and longer-term patient-oriented goals with the patient and/or family and health care team							
5.46: Identifying realistic and measurable expected patient outcomes to be used in the evaluation of formulated goals							
5.47: Validating the plan of care with the patient, family and other members							
5.48: Identifying required resources to accomplish the plan of care							
5.49: Documenting and revising the plan of care as necessary							

Outcome Standard 8(14): The critical care nurse implements the plan of care including independent and interdependent nursing functions.

To what extent is each criterion incorporated in your curriculum; in theory, in clinical, or both:

Grouping 9:Implementation of the Plan of Care: Critical care nurses will earn to coordinate, implement and document the plan of care reflecting established priorities while collaborating with patient, family and other members of the health care team including:

	0%	25%	50%	75%	100%	Theory	Clinical
5.50: Intervening to provide effective airway clearance by • Positioning • Managing Airway • Managing the endotracheal tube/ LMA • Administering pharmacologic agents • Managing Secretions							

5.51: Intervening to correct and ineffective breathing pattern by • Administering pharmacologic agents as ordered • Troubleshooting inadequate mechanical support • Manually ventilating as needed • Assisting with interventions							
5.52: Intervening to correct impaired gas exchange by • Managing changes in oxygenation • Managing changes to manipulate minute ventilation • Managing changes to adjust pressure support ventilation • Managing changes to manipulate different types of ventilation							
5.53: Intervening to correct alterations in cardiac output: • Manipulating preload/afterload • Manipulating Contractility • Manipulating heart rate or rhythm • Troubleshooting invasive hemodynamic monitoring catheters • Initiating and managing fluid therapy							
5.54: Intervening to correct alterations in cardiopulmonary tissue perfusion by administration selected pharmacologic agents							
5.55: Intervening to correct alterations in renal perfusion by: • Administering and managing fluids by calculating total fluid intake/outtake • Administering pharmacologic agents • Maintaining invasive interventions • Recognizing and minimizing the side effects of nephrotoxic pharmacologic agents 5.56: Intervening to correct alterations in cerebral perfusion by: • Using techniques to prevent obstruction and promote venous and cerebral spinal fluid drainage • Manipulating PaCO2 • Minimizing stimulation • Administering pharmacologic agents							

• Manipulating cerebral perfusion pressures • Managing seizure activity • Assisting with insertion/maintenance of intracranial pressure monitoring or ventricular drainage devices • Assisting with insertion of cerebral oxygenation monitoring devices • Troubleshooting invasive intracranial parameters/waveforms • Using techniques that minimize elevations in intrathoracic pressures • Administering appropriate fluid therapy to control intracranial hypertension • Controlling metabolic rate • Preventing secondary injury							
5.57: Intervening to correct alterations in gastrointestinal perfusion and gastrointestinal functions by: • Managing gastric bleeding • Managing overdose of pharmacologic agents, gastric lavage, fluid administration • Maintaining gastric drainage • Promoting early and safe enteral feeding • Promoting early and safe parenteral nutrition if enteral feeding cannot be initiated							
5.58: Intervening in ineffective thermoregulation by promoting normothermia							
5.59: Promoting optimal comfort by: • Organizing care to optimize comfort taking into consideration timing, grouping and sequencing of activities • Selecting, organizing, and administering pharmacologic agents • Implementing and evaluating individualized pain management regimen							
5.60: Intervening to prevent complications of immobility							
5.61: Minimizing/preventing motor and /or sensory deficits by: • Maintaining spinal cord integrity • Intervening for spinal cord crisis							

Outcome Standard 9(15): The critical care nurse evaluates patient outcomes in accordance with a conceptual model for critical care nursing and consistent with independent nursing functions.

To what extent is each criterion incorporated in your curriculum; in theory, in clinical, or both:

Grouping 10: Evaluation of the Plan of Care: Critical care nurses will learn to evaluate the overall plan of care in conjunction with patient, family and other health team members and to alter as necessary including:

	0%	25%	50%	75%	100%	Theory	Clinical
5.62: Evaluating and documenting the patient's/family's response to interventions							
5.63: Evaluating patient responses to all medications and treatments administered, recognizing the importance of timely entries							
5.64: Documenting patient responses to all medications and treatments administered, recognizing the importance of timely entries							
5.65: Comparing collected data with expected outcomes							
5.66: Analyzing gaps between actual and expected outcomes							
5.67: Rapidly revising the plan of care with the patient/family and/or health care team members and implementing alternatives							
5.68: Continuously evaluating the revised plan of care							
5.69: Participating in quality improvements activities (e.g., system effectiveness, patient/family outcomes)							

Outcome Standard 10: Therapeutic relationships with patients and families are developed and maintained by the critical care nurse.

To what extent is each criterion incorporated in your curriculum; in theory, in clinical, or both:

Grouping 11: Developing Therapeutic Relationships with Patients and Family: Critical care nurses will enhance their knowledge and skills of developing caring, therapeutic relationships with patients and families including:

	0%	25%	50%	75%	100%	Theory	Clinical
5.70: Optimizing communication with the patient and family							
5.71: Facilitating optimal family processes							
5.72: Promoting realistic hope for the patient and family							
5.73: Acting in the capacity of patient and family advocate							
5.74: Developing a therapeutic relationship with patients and families often within a limited time frame							
5.75: Facilitating patient and family adaptive coping with stressors related to the illness and the environment							
5.76: Communicating relevant data and the plan of care to the patient and family							
5.77: Facilitating patient and family access to resources internally							
5.78: Facilitating patient and family access to resources externally							
5.79: Selecting teaching strategies appropriate to the time available							
5.80: Applying teaching methods appropriate to the patient's and family's readiness to learn and stage of growth and development							
5.81: Evaluating learning outcomes and revising teaching methods and/or the learning plan as required							
5.82: Maximizing patient and family participation and autonomy in decision making							

Appendix B. Summary of Gap Analysis Based on Mean Compliance Levels

Groupings Gaps		Item Gaps	
Professional Issues (48% compliance)	**H**	1.3 Confidentiality of patient information	**H**
		1.4 Confidentiality of family information	**B**
		1.5 Reporting of confidentiality infractions	**B**
		1.6 Maintaining patient and family privacy	**B**
		1.7 & 1.8 Following guidelines for notification of reportable incidents internally and externally	**B**
		1.9 Responding to environmental, physical and psychosocial stress factors	**H**
		1.10 Contributing positively to the image of critical care nursing which impact interdisciplinary team members in the critical care unit	**H**
		1.11 Contributing positively to the image of the critical care unit	**H**
Legal/Ethical Issues		1.12 Identifying potential candidates for tissue and organ procurement	**C**
		1.13 Recognizing the delineation between the practice of critical care nursing and the practice of critical care medicine	**H**
		1.14 Recognizing and responding to real and potential legal and ethical issues	**H**
Nursing Competence in Critical Care (38% compliance)	**B**	2.1 Identifying criteria for hiring nurses based on the knowledge requirements of the job	**B**
		2.2 Identifying criteria for hiring nurses based on the skill requirements of the job	**B**
		2.3 Ensuring staff nurses responsible for direct patient/family care, have post-basic prep and/or experience in critical care	**B**
		2.4 Developing in collaboration with the critical care nursing staff written guidelines to differentiate novice from expert	**B**
		2.5 Providing orientation for new critical care nurses where the orientee is supernumerary	**C**
		2.6 Providing orientation for new critical care nurses where the orientation meets critical care nursing standards	**C**
		2.7 Establishing/maintaining a current and accessible library of reference materials relevant to the patient population	**B**

		2.8 Providing continuing education programs as outlined in the critical care nursing standards	**B**
		2.9 Evaluating knowledge and competencies of all critical care nurses in the facility on an ongoing basis	**B**
		2.10 Providing regular performance appraisals according to policy and mutually agreed-upon performance goals	**B**
CC Unit Structure and Interdisciplinary Team Function (30% compliance)	**B**	3.1. The structure of the Critical Care Committee (CCC) including medical, nursing and allied health representation	**B**
		3.2 The functions of the CCC	**B**
		3.3 The role of the CCC in approving written information regarding the critical care unit planning and organization	**B**
		3.4 The role of the CCC in approving written policies and procedures specific to the critical care unit	**B**
		3.5 Consulting with other members of the health care teams regarding safety measurements for the patient, family and team	**B**
Professional Relations and ID Communication		No item gaps in this grouping. All were above 50% mean compliance	
Data Collection and Documentation		No item gaps in this grouping. All were above 50% mean compliance	
Data Analysis and Formulation of Nursing Dx		5.18 Alterations in integumentary tissue perfusion	**C**
		5.21 Ineffective thermoregulation	**C**
		5.24 Alteration in immunologic function	**B**
		5.25 Alteration in hematological function	**C**
		5.28 Altered family process	**B**
		5.30 Manifestations of abuse	**B**
		5.32 End of life withdrawal of treatment and/or the execution of advanced directives	**H**
		5.33 Organ donation and transplantation	**C**
		5.39 Integrate all findings from the assessment to identify collaborative and/or independent nursing diagnoses	**H**
Planning Interventions and Formulating a Plan of Care		5.43 Balancing the science of curing with the act of caring	**H**
		5.46 Identifying realistic and measurable expected patient outcomes to be used in the evaluation of formulated goals	**H**
		5.47 Validating the plan of care with patient, family and other members of the health care team	**H**

		5.48 Identifying required resources to accomplish the plan of care	**C**
Implementing a Nursing Plan of Care		5.58 Intervening in ineffective thermoregulation by promoting normothermia	**C**
		5.60 Intervening to prevent complications of immobility	**C**
Evaluating a Nursing Plan of care (just above 50% mean compliance)	**B**	5.67 Rapidly revising plan of care with the patient/family and/or ID team members and implementing alternatives	**B**
		5.68 Continually evaluating the revised plan of care	**H**
		5.69 Participating in quality improvements activities	**B**
Developing Therapeutic Relationships with Patients and Families (50% compliance)	**B**	5.72 Promoting realistic hope for the patient and the family	**B**
		5.75 Facilitating patient and family adaptive coping with stressors related to the illness and the environment	**H**
Developing Therapeutic Relationships with Patients and Families (50% compliance)		5.77 Facilitating patient and family access to resources internally	**B**
		5.78 Facilitating patient and family access to resources externally	**B**
		5.79 Selecting teaching strategies appropriate to the time available	**H**
		5.80 Applying teaching methods appropriate to the patients'/families' readiness to learn and stage of growth and development	**H**
		5.81 Evaluating learning outcomes and revising teaching methods and/or the learning plans as required	**B**
		5.82 Maximizing patient and family participation and autonomy in decision making	**B**

Note: Groupings which have a mean compliance level of 50% or less are in red font.

All items listed as gaps have achieved a 50% mean compliance or less by a hospital, a college or both.

In columns 2 and 4, H=Hospitals, C=Colleges and B= Both. This indicates who achieved a 50% compliance level or below.

Appendix C: Expert Panel Reviewers

1.	**Mary Runde**	Critical Care Educator, Sault Area Hospitals, Sault Saint Marie, ON.
2.	**Glenda Hicks**	Critical Care Educator, Sudbury Regional Hospital, Sudbury, ON.
3.	**Karen Lodato**	Education and Development Clinician, Critical Care, Hamilton Health Sciences, Hamilton, ON.
4.	**Liz Gordon**	Critical Care Educator, Medical ICU, University Health Network, Toronto, ON.
5.	**Nazlin Allidina**	Coordinator, Critical Care Educator Program, George Brown College, Toronto, ON.
6.	**Linda Fitzpatrick**	Research Assistant, Critical Care Collaborative Project, NHSRU, Hamilton, ON.
7.	**Dr. Mabel Hunsberger**	Associate Professor, School of Nursing & Research Associate, NHSRU, McMaster University, Hamilton, ON.
8.	**Dr. Anita Fisher**	Associate Professor, School of Nursing & Research Associate, NHSRU, McMaster University, Hamilton, ON

The research team would like to acknowledge the invaluable role that these experts in the field played in the collaborative evaluation. Their expertise in the field and willingness to work long hours was greatly appreciated.