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A New Curriculum Model for Initial RN Licensure Programs

October 2008

Texas Higher Education Coordinating Board



Texas Higher Education Coordinating Board

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Executive Summary

Senate Bill 139, 80th Texas Legislature, directed the Texas Higher Education Coordinating Board (THECB) in consultation with the Texas Board of Nursing to conduct a study on improving the curricula of professional nursing programs (initial licensure programs). The legislation required the study to focus on methods to improve instruction for providing safe and high quality nursing care to patients.

Patient care and safety have been and continue to be an integral part of nursing education. However, factors other than the way in which nurses are prepared have tremendous effects on the role of nursing in patient safety. Chief among these is the shortage of nurses in health care facilities. Recognizing these other nursing-related factors that affect patient care and safety, the THECB interpreted the directive broadly. As a result, this study considers factors in the curricula that affect both the quality and quantity of nurses produced.

This report summarizes THECB's effort to design a "curriculum framework" as Phase 1 in a proposed plan to develop one or more common curriculum models (hereafter referred to as "model") for the state's nursing programs. The curriculum framework identifies the broad conceptual components of nursing education which focus on safety and high quality nursing care. It also incorporates other methods and strategies to support these components and to maximize the potential for enrollment capacity and student success. In this effort to construct the framework, THECB and an external consultant scanned current challenges in Texas, nursing education innovations in Texas, national research contributing to curriculum reform, and other states' efforts to develop new curriculum models.

Finally, THECB proposes a plan to further develop the framework into a common curriculum model that, with possible regional modifications, could be implemented at the state's 94 initial licensure programs.

Key Findings

- The five core competencies described in the Institute of Medicine's (IOM) Quality Chasm Series have been almost universally accepted as the broad framework for future health education and for ensuring patient safety in practice settings.
- Several states are using the IOM competencies as the framework for designing new curriculum models for initial licensure programs. These state models also are attempting to respond to challenges that are common to nursing education in Texas, including seeking to provide seamless transfer between levels of education and among nursing programs, leveraging limited resources in partnerships among nursing programs and between nursing programs and health care facilities, increasing the use of instructional technology in these programs to maximize the use of classroom and clinical instruction, and increasing enrollment capacity in individual programs.

- Texas can use the IOM competencies, the common structural themes currently being tested in other states, and other best practices of the state's nursing programs to develop a new curriculum model that could respond to these challenges. However, because of the sheer size of the state and the unique characteristics and resources of nursing programs in specific areas of the state, Texas should establish any new curriculum model on a regional basis. A regional approach would better capitalize on existing partnerships and shared resources, expedite implementation, and coordinate evaluation.
- If the Texas Legislature chooses to pursue a new curriculum model for initial RN licensure programs, THECB proposes dividing the process of curriculum development and implementation into three additional phases. Phase 2 (lasting approximately 12 months) would expand the framework into a new curriculum model or models with standard pre-requisites, individual course descriptions, a recommended sequence of courses, and recommended methodologies. It also would require an inventory and assessment of instructional "best practices" of shared faculty and technological resources among nursing programs in the state's 10 educational regions. Phase 3 (approximately two to four months) would be the preparation of a final report on the common curriculum model with an implementation plan from each region. Phase 4 would pilot the new curriculum model at nursing programs in at least six of those 10 regions.
- Nursing curriculum redesign will require a significant commitment of time and money to achieve any appreciable results. The State of Oregon appears to lead the nation in developing a statewide curriculum, and its work has inspired similar curricular reform efforts in other states. It implemented a model for 13 initial licensure programs at a cost of \$10 million. Most of those costs were associated with developing the curriculum model, redesigning clinical instruction pedagogies, and retraining nursing faculty to the new curriculum. As a result of these curricula innovations and the establishment of two new nursing programs in the state, Oregon has shown an 80 percent increase in nursing enrollments since 2001. Texas enrollments have increased approximately 47 percent for the same period.
- State and institutional leaders should anticipate increased programmatic costs during a major transitional period of this kind, particularly in areas associated with faculty development and instructional technology. Health care facilities also should anticipate greater responsibility in nursing education and in transitioning the new graduate to practice.

Recommendations

As a result of this initial study, THECB recommends the following four actions or strategies:

ACTIONS/STRATEGIES	ACTION TO BE TAKEN BY...			
	Legislature	THECB	Educational Institutions	TBON
1. Direct THECB to develop the proposed framework into a new curriculum model for initial licensure programs as outlined in proposed Phases 2 through 4 and provide funding to support the costs of consultant services and Phase 4 (THECB estimates that with in-kind support from institutions and external support from for-profit and nonprofit stakeholders, consultant services and six pilots involving 48 schools, will cost approximately \$15 million.)	X			
2. Beginning in September 2009, inventory and assess local "best practices," current and future partnerships, and the potential for sharing faculty and instructional technology as part of the process for developing regional pilot proposals in Phase 4.	X	X	X	X
3. Support existing and new partnerships between nursing programs and health care facilities through state and local initiatives.	X			
4. Provide other funding for faculty development and equipment to support new instructional methodologies as part of the transition to the new curriculum model.			X	

Key:

THECB – Texas Higher Education Coordinating Board

TBON - Texas Board of Nursing

Acknowledgments

THECB gratefully acknowledges the contributions of the staffs of the Texas Board of Nursing and Texas Center for Nursing Workforce Studies, and members of the Advisory Committee on RN Nursing Education (ACORN) in the development of this report. We would particularly like to thank LeAnn Wagner RN, MSN, Chair of ACORN and chair of the Allied Health and Public Service Division of Victoria College; Ana Mejia-Dietche, JD, Director of the Health Industry Committee of

Central Texas; Beth Mancini, RN, Ph.D, CNA, FAAN, Professor and Associate Dean of The University of Texas at Arlington School of Nursing; Debora Simmons, RN, MSN, CCRN, CCNS, Associate Director of the Institute for Healthcare Excellence at The University of Texas M.D. Anderson Cancer Center; and Robbin Wilson, RN, MSN, nursing consultant at the Texas Board of Nursing. Finally, we would like to express our thanks to three external consultants: Brenda Cleary, PhD, RN, FAAN, Director of the Center to Champion Nursing in America at the American Association of Retired Persons (AARP); Carole Kenner, DNS, RNC, FAAN, Dean of the University of Oklahoma College of Nursing; and Ruth Eckenstein, Program Specialist, Oklahoma Department of Career and Technology Education.

Table of Contents

Background	1
Initial Licensure Programs	
Scope and Design of the Study	
Methodology for Phase 1: Determining the New Curriculum Framework	3
Current Challenges in Texas	
Texas Innovations in Nursing Education	
National Research Contributing to Curriculum Reform	
Other States' Efforts to Develop New Curriculum Models	
Common Themes in Curriculum Reform	
Expert Review and Public Comment	
Establishing the Curriculum Framework	11
Conceptual Components	
Structural Elements	
Later Phases for Curriculum Model Development and Implementation	
Summary	
Resources Needed for Implementation	
Recommendations	16
List of Sources	17

Appendices

- Appendix A – Senate Bill 139, 80th Texas Legislature
- Appendix B – Sample Curriculum Integrating IOM Competencies

Background

Senate Bill 139, 80th Texas Legislature, directed the Texas Higher Education Coordinating Board (THECB), in consultation with the Texas Board of Nursing, to conduct a study on improving the curricula of professional nursing education programs. The legislation required the study to focus on methods to improve instruction on providing safe and high quality nursing care to patients. (The text of SB 139 is found in Appendix A.)

Patient care and safety have been and continue to be an integral part of nursing education. However, factors other than the way in which nurses are prepared have tremendous effects on the role of nursing in patient safety. Chief among these is the shortage of nurses in health care facilities. Research shows that efforts to relieve the nursing shortage by increasing nurse-to-patient ratios and the number of hours in a nurse's shift have had a detrimental effect on error rates and patient outcomes. Recognizing these other nursing education-related factors that affect patient care and safety, the THECB interpreted Senate Bill 139 broadly. As a result, this study considers factors in the curricula that affect both the quality and quantity of nurses produced.

Initial Licensure Programs

The legislative charge directed THECB to study both professional *and* vocational nursing education programs. However, the differences in education and scope of practice between these two levels of nursing require that they be studied and discussed separately. This report addresses the specific curricula of "professional nursing programs," which SB 139 defines as "education programs that prepare students for initial licensure as registered nurses (RNs)" (hereafter referred to as initial licensure programs). Another report focusing on licensed vocational nursing programs is being submitted under separate cover.

Texas has four types of initial licensure programs:

- *Diploma programs* are traditionally hospital-based and require three years of study.
- *Associate degree programs* traditionally require prerequisites plus two years of study at a community college.
- *Baccalaureate degree programs* traditionally require four years of study with nursing curricula usually occurring during the last two years at a university or academic health science center.
- *Alternate entry degree programs* are normally accelerated, second-degree programs and are usually offered at a university or academic health science center.

The following table shows the distribution of these types of programs as of September 2008 and the percentage of degrees conferred in 2007:

Initial Licensure Programs In Texas

Type of Program	Number of Programs *	Percentage of 2007 Graduates **
Diploma	2	2.5 %
Associate Degree	62	59 %
Baccalaureate Degree	29	38 %
Alternate Entry Master's Degree	1	0.5 %
Total Programs	94	100 %

* "Number of Programs" represents the most current number of initial licensure programs approved by the Texas Board of Nursing as of September 2008. Not all of the new programs produced graduates in 2007.

** "Percentage of 2007 Graduates" represents the percentage students who graduated from each type of the state's 86 initial licensure programs in 2007. The 86 programs reported a total of 7,031 graduates.

Scope and Design of the Study

In defining the scope of the charge, THECB established several assumptions for the basis of its work:

1. Curriculum redesign must prepare nurses to be patient safety advocates, meet current challenges in health care quality, and increase the safety of health care for Texans.
2. Nursing programs are interested in maximizing the use faculty and staff, instructional technology, clinical placements, and educational resources in Texas.
3. Nursing programs and health care facilities must collaborate if the curriculum framework and any subsequent model are to be successful.
4. Any proposed curriculum framework and any subsequent model must not stifle innovation in nursing education.
5. Any fully developed model must eventually demonstrate a return on the state's investment (e.g., increased capacity, student success, and greater educational mobility for RNs in Texas from one level of preparation to another) and merit the additional educational resources and financial support provided for implementation.

From those assumptions, THECB outlined four phases in a plan to develop a curriculum framework and then, a common curriculum model for initial licensure programs.

Phase 1 involved developing a "curriculum framework" as a broad outline of core content areas of nursing education which focus on safety and high quality nursing care. It also incorporates other methods and strategies to support these competencies and to maximize the potential for enrollment capacity and student success. In this effort to construct the framework, THECB hired an external consultant to help scan national and state initiatives to redesign nursing curricula. That work ended in September 2008, and results are presented in this report.

Phases 2 through 4 are discussed on pages 12-14 as the next possible steps in a plan to develop the curriculum framework into a new curriculum model.

Methodology for Phase 1: Determining the New Curriculum Framework

In completing Phase 1, THECB and the external consultant reviewed (1) current challenges in Texas; (2) Texas innovations in nursing education; (3) national research contributing to curriculum reform; and (4) state efforts to develop new curriculum models. Phase 1 also provided opportunities for expert review and public comment of this report.

Current Challenges in Texas

THECB and its Advisory Committee on RN Nursing Education collected data from the Texas Center for Nursing Workforce Studies (TCNWS) and other sources to identify key challenges to program enrollment capacity and curriculum quality. They found that:

- **National studies show unacceptably high error rates in health care.**
At least two large national studies found that adverse events occur in as many as 3.2 percent of all hospital admissions and that more than 50 percent of those events were preventable. More specific to nursing, a survey by the National Council of State Boards of Nursing showed that only 42 percent of employers believed new graduates were prepared to give safe, effective care (Goode, *Policy Implications*, June 11, 2008) As a key participant in preparing nurses to serve in the health care system of one of the most populous states in the country, Texas nursing programs must participate in the national movement to address concerns about patient safety, with a particular focus on preventable events.
- **The gap between the demand for and supply of registered nurses is widening.**
The demand for RNs in Texas is predicted to grow by 86 percent from 2005 to 2020. At the current rate, supply will only increase 53 percent, resulting in a shortage of 70,628 RNs (TCNWS *Supply and Demand Report: 2005*, Table 1, p. 8).
- **Although many nursing programs in Texas have increased capacity, qualified applicants are still being turned away.**
In the last six years, Texas nursing programs have graduated significantly more nurses. In 2007, approximately 7,000 students graduated from the state's public and private initial licensure programs, up 55 percent from 2001. Enrollment numbers have also increased. Approximately 17,841 students enrolled in fall 2007, up 47 percent from fall of 2001 (TCNWS *Professional Nursing Education in Texas Demographics & Trends: 2006*, p.1.) Even more students want to enroll in the state's initial licensure programs, but capacity is limited. More than 7,760 qualified applicants (duplicated numbers) to Texas initial RN licensure programs were turned away in 2007.
- **A number of factors limit the continued growth of Texas nursing programs.**
Nursing programs offered three top reasons for their inability to enroll all qualified applicants:
 1. A faculty shortage driven by retirements and low faculty salaries compared with other employment opportunities, the lack of budgeted faculty positions, and the lack of qualified applicants for advertised faculty positions. In some parts of the

state, an inadequate pool of nurses with graduate degrees is also a contributing factor.

2. Limited opportunities for clinical instruction at affiliated hospitals.
3. Limited classroom space.

- **Attrition rates in nursing programs limit the state's ability to relieve the nursing shortage.**

Graduation rates for nursing programs vary significantly from school to school (from 34 percent to 96 percent), with an overall state average of 69 percent. (THECB *Strategies to Increase the Number of Graduates of Initial RN Licensure Programs*: 2006, p.6). If statewide attrition could be reduced from 32 percent to 15 percent (with a resultant statewide graduation rate of 85 percent), an estimated additional 1,630 new nurses would be produced per year (based on the number of graduates reported in 2007).

- **Lack of seamless articulation is a primary factor hampering transition from one educational level to the next.**

While 65 percent of RNs complete an associate degree, only 12.6 percent of those graduates go on to complete a baccalaureate degree in nursing (TCNWS *Nursing Workforce in Texas – 2007: Demographics and Trends*: 2007). A baccalaureate degree provides associate degree nurses with a broader background and application of nursing skills. It also allows these nurses the opportunity to continue their education in graduate school and ultimately become a faculty member. This lack of educational progression is linked to a variety of factors, including the availability of financial incentives for nurses to continue their education. Curriculum reform and in particular, the effective use of educational technology and work-based support, could help remove some of these barriers

- **Variations in nursing curricula can create barriers to program capacity and student success.**

Initial licensure programs in the state can develop and implement their own unique curriculum to teach the same broad nursing concepts. Differences in program curricula can make transfer from one program to another difficult for students, make it difficult for nursing faculty to partner with other schools to use available resources more efficiently, and prevent seamless transition from one level of nursing education to the next. Instead, progress from one level to the next is often time-consuming and expensive for students. Students may repeat curriculum content when they transfer to another program or enroll in higher levels of nursing education.

- **The transition from new graduate to practicing nurse may contribute to the nursing shortage.**

Numerous studies have shown that new graduates have high turnover rates in their transition to practice. A 1999 National League for Nursing study reported that approximately 25 percent of new graduates have already worked for two or more institutions within six to eight months of graduating (Goode, *Policy Implications*, June 11, 2008). A 2007 study of turnover in new graduates indicated that 13 percent had changed jobs in the first year, and 37 percent reported they were ready to change jobs (Goode, *Policy Implications*, June 11, 2008). The cost to the employer in nurse turnover

is estimated to be 1.2 to 1.3 times the yearly RN salary or 5 percent of the hospital budget (Goode, *Policy Implications*, June 11, 2008).

- **The geographic size of the state makes establishing and sustaining close partnerships among the 94 initial licensure programs very difficult without a framework for coordination.**

Creative partnerships between nursing programs and between nursing programs and hospitals exist and have been shown to be effective in leveraging scarce resources, increasing enrollments, and improving educational experiences for students. However, these kinds of successful partnerships have not been uniformly adopted among many of the state's initial licensure programs. They remain scattered across the state and continue to be established almost randomly through local initiatives or with support from external grant funding.

A curriculum model may not address all of these challenges, but an awareness of them is necessary for the development of a new curriculum framework, any subsequent curriculum models, and a system for evaluation that will help ensure that changes to curriculum have a positive effect on the quality and quantity of new initial licensure graduates.

Texas Innovations in Nursing Education

THECB and other nursing organizations and nursing stakeholders have developed a number of initiatives to coordinate and enhance nursing education. They include:

- **Workforce Education Course Manual**

THECB coordinated the development of the *Workforce Education Course Manual* which is an inventory of courses with common course numbers, titles, and course descriptions for all workforce courses taught at public community and technical colleges in Texas. (The manual only applies to associate degree programs). Nursing courses were developed by nursing faculty and are reviewed and updated on a three-year cycle. Associate degree programs offered at community colleges must use the manual's courses for their institution to be eligible for state funding for the courses. Although the manual provides some commonality in nursing courses, there are still significant differences in terms of program admission criteria, prerequisite courses, course structure and sequencing, program length, and total number of contact hours. These program variations are one factor that makes seamless transition from one level of nursing education to the next very time consuming and expensive for students.

- **Field of Study Curriculum in Nursing**

In conjunction with the development of *Workforce Education Course Manual*, the THECB developed a Field of Study Curriculum for nursing which was meant to facilitate student semester credit hour transfer from community colleges to universities or health science centers. A statewide evaluation of the implementation of the Field of Study Curriculum

for nursing has not been conducted. However, THECB anticipates that the concept will be more fully developed and evaluated in a curriculum redesign project.

- **Nursing Innovation Grant Program**

Since 2003, THECB has awarded \$12.5 million in grants through the Nursing Innovation Grant Program to promote innovation in initial licensure programs. In the most recent grant cycle, THECB awarded 13 grants to programs proposing innovative partnerships with hospitals and other nursing programs. The general themes of those partnerships were the “regionalization” of instructional activities within a geographic area, standardization of admission criteria, standardized pre-requisites and nursing curriculum, curriculum redesign incorporating the use of new instructional technology, and work-based instruction. Through the work of a consortium of current grantees, THECB and its Advisory Committee on RN Nursing Education will be able to evaluate these latest initiatives and eventually identify best practices that can be presented to nursing stakeholders for future application in nursing education.

- **Texas Differentiated Entry Level Competencies**

The Texas Board of Nursing, in consultation with representatives from initial licensure programs, developed differentiated competencies for associate degree and baccalaureate degree graduates. These competencies are used by nursing programs to streamline articulation between educational levels. The Board is in the process of revising these competencies.

- **Texas Nurses Association Competency Taskforce and Texas Nursing Competency Consortium**

The Taskforce created a regulatory framework for competency assessment of nurses in the state. The Consortium held a series of conferences promoting the science of competency assessment and competent nurses as a bridge to patient safety.

National Research Contributing to Curriculum Reform

THECB’s consultant reviewed major initiatives in nursing education at the national and state level. Her summary identified some general themes and recommendations for the curriculum framework. Her review included surveying relevant statements from expert sources at nursing accreditation bodies, including the National League for Nursing’s *2003 Position on Innovation in Nursing Education: A Call to Reform* and *2005 Position on Transforming Nursing Education* as well as multiple documents from the American Association of College of Nursing.

- **Institute of Medicine Reports**

A series of ground-breaking reports on quality by The Institute of Medicine of the National Academies (IOM) were specifically reviewed for relevant recommendations. The Institute of Medicine is a nonprofit organization created to provide evidence-based recommendations on matters of biomedical science, medicine, and health, and to set the national direction for health care. The first report in the series, *To Err is Human: Building a Safer Health System* (1999), provided the groundwork for reform in health care practice by estimating 98,000 preventable deaths per year that have been attributed to quality and safety deficits in the health care industry. This report was followed by

Crossing the Quality Chasm: A New Health System for the 21st Century (2001), which concluded that “care should be safe, effective, patient-centered, timely, efficient and equitable.” A subsequent report, *Health Professions Education: A Bridge to Quality* (2003), operationalized those characteristics by identifying specific competencies that are essential to increasing safety and quality regardless of the health care discipline.

While the competencies identified in *Health Professions Education: A Bridge to Quality* were meant to be interdisciplinary, they were particularly relevant to nursing education reform because they linked safety deficits in the workplace to the educational preparation of health care professionals. (More information about these competencies is provided on page 11 of this report). The report concluded that educators and licensing and certification organizations should ensure that students in the health professions and working professionals develop and maintain proficiency in five interdisciplinary competency areas essential to providing high quality care.

Another report in the IOM series, *Keeping Patients Safe: Transforming the Work Environment for Nurses* (2004), identified the nurse as the most critical member of the health care team because the nurse is most often present during a patient’s most vulnerable times, regardless of the health care setting. This report identified monitoring patient status, providing physiologic therapy, helping patients compensate for loss of function, providing emotional support, educating patients and families, and integrating and coordinating care as the six areas of direct patient care within the direct purview of nursing that have a significant impact on patient safety (pp. 91-100).

The IOM report series was effective in bringing attention to patient safety issues in health care and translating the problems and solutions to key concepts that could be applied in health education curricula.

To investigate the potential use of IOM’s recommendations in health education, the THECB consultant surveyed the state’s initial licensure programs about their use of the IOM competencies in their curricula. The results in early May 2008 indicated that while nursing programs are aware of the IOM competencies and recommendations, schools are in various phases of implementing the recommendations and are implementing them in a variety of ways.

- **Quality and Safety Education for Nurses**

The IOM’s application of core competencies was further delineated for nurses in the Quality and Safety Education for Nurses, an ongoing research project at the University of North Carolina at Chapel Hill that is funded by the Robert Wood Johnson Foundation. The project has integrated the IOM recommendations into nursing curricula and provides a framework for describing the knowledge, skills, and attitudes required to meet the IOM competencies within the practice of nursing as well as serve as a national repository for model curricular components and the sharing of teaching strategies (<http://www.qsen.org>).

Other States' Efforts to Develop New Curriculum Models

Using the IOM competencies as a foundation and building on the Quality and Safety Education for Nurses model, several states have undertaken efforts to redesign nursing education. In particular, THECB reviewed the work of the Oregon Consortium for Nursing Education and the Massachusetts Board of Higher Education. Their work represents the most highly developed education reform initiatives from other states. However, both of these initiatives are in the initial stages of implementation, and no new state-based curriculum model has been fully evaluated.

- **Oregon Consortium for Nursing Education**

Oregon Consortium for Nursing Education built a curriculum model based upon the IOM core competencies and created partnerships among its eight community colleges and five campuses of the Oregon Health Science University nursing programs. While the scale of the consortium's activities is smaller than what would be needed in Texas, there are a number of characteristics of the model that could address many of the challenges here. For example, the consortium shares faculty and other resources, agrees on common admission standards, and has developed standardized evidence-based curricula and teaching-learning innovations. The consortium's integrated curriculum model removes the challenges associated with articulation and allows associate degree students to complete requirements for a baccalaureate degree in two additional semesters without the need for a formal articulation agreement between programs, thus facilitating student mobility.

Curriculum development emphasizes new evidence-based teaching strategies, creating and implementing teaching scenarios using clinical simulation, and developing tools that assess student mastery of competencies and clinical decision-making. Clinical and adjunct faculty and preceptors complete new faculty orientations and training, and have access to faculty leadership development resources. The consortium members can share instructional materials and curricula through a central learning repository which helps to extend faculty. This, along with the use of clinical simulation, increases the students' opportunities for practicing clinical skills and improves the safety and quality of care.

The Oregon model responded directly to at least two major factors in what had limited capacity in nursing programs. It created an environment where faculty sharing among programs was the norm rather than the exception, thus reducing the effects of the current and any impending faculty shortage. The model also made effective use of distance education technologies for the same reason. The model also redesigned clinical instruction to minimize the need for more clinical sites and clinical faculty with increased enrollments. The redesign of clinical instruction focused on a concept-based or case-based approach to instruction which allows for higher faculty to student ratios. As a result of these changes, other instructional modifications, and the addition of two new nursing programs, Oregon has shown an 80 percent increase in nursing enrollments since 2001. Texas enrollments have increased approximately 47 percent for the same period.

Although the Oregon model has yet to be fully evaluated, several other states, including New York, North Carolina, Hawaii, California, Oklahoma, and the State of Washington, are considering implementing similar models. Oregon's model to develop a common curriculum for 13 initial licensure programs has taken more than two years and cost approximately \$10 million. Those costs supported 1.5 full-time equivalent project staff, a consultant to develop the curriculum, faculty development and training, and the development of a new clinical model. Most of those costs were not based on the number of the programs in the state, but on system-related development. Therefore, if Texas were to emulate this model, the costs should not be considerably more than what it may have cost Oregon to develop and implement a similar model. Most of the costs were associated with the curriculum design, developing new pedagogies for clinical instruction, and faculty retraining and development.

- **The Massachusetts Coordinating Board for Higher Education**

Since 2006, the Massachusetts Coordinating Board for Higher Education has worked with all levels of nursing education and all segments of nursing practice to develop a set of core competencies for the nurse of the future. The competencies are based on current national standards and are intended to serve as a framework for a new approach to nursing education curriculum. Each competency includes a set of defined knowledge, attitudes, and skills. The State of Massachusetts is currently funding partnerships of nursing programs and practice sites to conduct an analysis of weaknesses in the current curriculum and to develop and implement models for a new, seamless and integrated curriculum. An additional element of this project involves the development of a statewide model for transition into practice using the same set of competencies. To enhance the development of these new approaches, funding is being provided to acquire clinical simulation equipment (e.g., manikins that are programmed by a computer to simulate health care conditions and responses to medical treatments) and to develop simulation health scenarios based on the core competencies. This simulation equipment is to be used by nursing programs in partnership with hospitals.

Common Themes in Curriculum Reform

The national and state review presented a number of common themes:

- Application of IOM competencies as the core for curriculum reform
- Translation of those competencies for use in nursing education
- Sharing of limited resources
- Standardization of certain educational and administrative functions
- Use of new instructional technology
- Need for faculty and preceptor training to transition from old to new instructional methodologies
- Importance of partnerships between education and practice in providing a continuum of instruction from graduate to practicing nurse.

Many of these themes are already being implemented by the initial licensure programs in Texas through local initiatives and federal or state grants. That work suggests that the programs are ready and willing to innovate in response to changes in the pedagogical and practice

environment. However, even pilots that prove to be successful are often not duplicated in other areas of the state. This curriculum framework and the models generated from the framework may facilitate the dissemination of local, state, and national best practices.

Expert Review and Public Comment

After data were collected, draft reports were prepared for discussion at open meetings of the Advisory Committee on RN Nursing Education. This 13-member standing committee of nurse educators, practicing nurses, and state agency and workforce representatives met three times during Phase 1 of the study. The final draft of this report was also available for public comment. THECB attempted to address or incorporate all comments in the draft report.

Establishing the Curriculum Framework

As a result of the review of new models of instruction and the state's current challenges and practices, THECB identified conceptual components and structural elements needed to establish a framework for a new nursing curriculum model that focuses on patient safety, seeks to provide seamless transfer between and among nursing programs, maximizes limited faculty and technological resources, and increases capacity in individual programs.

Conceptual Components

The adoption of the IOM competencies provides the broad conceptual components for a new nursing curriculum. The five core competencies described in the IOM report, *Health Professions: A Bridge to Quality, 2003*, are:

- 1. Providing patient-centered care.**
Patient-centered care focuses care and interventions on the patient and not on the disease or provider. Patients are considered partners in care with the right to access their patient information and engage in the planning and implementation of their care. Patients understand their current treatment and the follow up that is recommended. Communication with patients is based on patient preference (such as email). Health provider visits are timely and easy to obtain. Interdisciplinary teams that include the patient and family plan and implement care that is integrated, comprehensive, and coordinated. Patients have access to information about health providers, health care delivery systems, and all facets of their care. Patient evaluation of the care provided is actively sought and valued.
- 2. Working as part of an interdisciplinary team.**
Interdisciplinary care is the cooperation, coordination, and communication among health care team members to standardize or make care seamless in order to improve quality and enhance patient safety. The patient is part of this interdisciplinary team. The focus is on integrated and inter-professional teamwork, rather than each discipline concentrating on one aspect of care.
- 3. Providing evidence-based practice.**
Evidence-based practice is the integration of current research findings, expert opinion or clinical reasoning, and patient preferences to guide care as opposed to providing care according to practices derived from other sources, such as policies and procedures that are not updated in relation to new clinical or health services research findings or simply based upon tradition or workarounds that compromise patient safety.
- 4. Focusing on quality improvement**
Quality improvement is the continuous measurement of quality from a patient, health care professional, and systems perspective with the goal of providing the highest level of care possible. Threaded through this competency is the concept of safety. Standardization of processes and conducting root cause analyses for safety issues are aimed at improving safety and quality.

5. **Using information technology**

Information technology refers to the use of technology to manage knowledge, improve communication among health care team members and across health care systems, facilitate data mining, and support clinical decision-making. The ultimate goals are to make health information easily accessible and coordinated with emphasis on quality of care and the reduction of errors. This broad area includes use of electronic health records and physician order entry systems.

The five core competencies for the health professions recommended by IOM are further expanded for purposes of redesigning nursing curricula in Appendix B.

Structural Elements

Within those broad conceptual components, five structural elements were identified that represent common themes in a number of state models and in Texas' own efforts in promoting innovation in nursing education:

1. Partnerships between academic and health care organizations
2. Common curriculum content across nursing programs
3. Leveraging faculty, instructional technology and other resources through regionalization
4. Efficient transition from RN graduate to practicing nurse
5. Seamless transfer between levels of education and among programs

THECB also identified instructional methodologies, faculty support, and partnering strategies that are a common feature of nursing education redesign and that will be necessary for the implementation of the curriculum model:

1. Recommended innovations in the implementation and teaching of the curricular models, derived from the Carnegie Foundation for the Advancement of Teaching's National Nursing Education Study 2007 and "*Teaching IOM*"
2. Use of clinical simulation
3. Use of distance education
4. Use of centralized clinical placement systems to maximize the use of clinical instruction and simulation opportunities
5. Faculty development /release time to make the transition to new curriculum models
6. Consulting services to support implementation and evaluation through THECB efforts and at individual programs
7. Extracurricular supports to ensure student retention and success

Later Phases for Curriculum Model Development and Implementation

If the Texas Legislature chooses to pursue a new curriculum model, THECB has outlined later phases that would use this framework to develop a new and innovative curriculum model for initial licensure programs.

A new curriculum model would be expected to incorporate design elements that would:

1. Meet or exceed standards of national nursing accreditation bodies or clearly identify conflicts with those standards
2. Be completed by students in no more than four semesters (or other unit of instruction), each normally representing 16 weeks of instruction (associate degree and baccalaureate degree programs), or clearly describe a rationale for longer or shorter programs
3. Emphasize the latest patient safety competencies
4. Use competency-based testing
5. Facilitate transfer between RN programs and mobility among different levels of nursing including Licensed Vocational/Practical Nursing, associate degree, and baccalaureate education
6. Promote student success and completion rates
7. Promote evidence-based practice
8. Maximize the use of existing and potential nursing faculty at initial licensure programs and at their clinical affiliates
9. Propose a faculty-to-student ratio for clinical courses that is effective, consistent with projected enrollment increases, likely faculty shortages, and availability of new learning technologies
10. Integrate didactic and clinical content with new instructional technology
11. Address any characteristics unique to Texas and nursing instruction in Texas
12. Propose standardized pre-requisite courses at each level of associate degree and baccalaureate degree instruction
13. Promote easy transition from student nurse to practice nurse
14. Provide a cost per graduate that is as low as possible

In Phase 2, THECB, in consultation with the Texas Board of Nursing and nurse educators, would develop a new curriculum model or models with standard prerequisites, individual course or learning module descriptions, a recommended sequence of courses or learning modules, and recommended methodologies. Proposed curriculum models would be discussed in a public forum, where nursing leaders could offer recommendations and changes. The forum would also give leaders the opportunity to consider the model within the context of instructional resources, and within existing and potential partnerships among nursing programs and key health care facilities in a given region.

Phase 2 also would require nursing programs in the state's 10 educational regions to inventory and assess instructional "best practices" and shared faculty and technological resources. From that exercise, the programs within each region would begin to develop a plan for implementation. The curriculum design, peer review, and regional "self-assessment" would require approximately 12 months.

Starting with the public forum in Phase 2 and continuing through Phase 3, THECB would solicit pilot proposals to implement the curriculum model within *at least* six of the state's 10 higher education regions.

In Phase 3, THECB, in consultation with the Texas Board of Nursing and the Advisory Committee on RN Nursing Education, would prepare a final report on the curriculum model and an implementation plan for regional pilot projects. It would also include recommendations for a

statewide faculty development plan that would be needed to prepare faculty to implement as well as support the ongoing refinement of the curriculum model. The final report would require two to four months.

Phase 4 would pilot the new curriculum model at multiple institutions in specific regions of the state. The regional pilots would test the effectiveness of the evidence-based, patient safety content of the new curriculum, incorporate the best use of available and new instructional resources, and determine whether courses within each type of program leads to a seamless transfer among programs. The pilot phase would require three years in order to test a curriculum that would track students entering a licensed vocational nursing program through completion of a baccalaureate program.

Independent evaluation is integral in all of the phases of the project. THECB would select an independent consultant to first oversee the work in each of the regions, and then evaluate the effectiveness of the models and their implementation.

Statewide consensus among programs would be essential in the pilot phase of the study, and, ideally, all regions would pilot the new curriculum. Those regions that are identified as not having partnerships and that do not share resources would be paired with regions with well-developed regional partnerships.

This regional approach to implementation and evaluation appears to be the best approach for a state as large as Texas. It also offers a way to capitalize on existing partnerships and shared resources, expedite implementation, and coordinate evaluation. Developing curriculum models for independent adoption by each of the 94 programs normally would be time consuming. Launching the models concurrently in varied settings, evaluating them for both content and implementation, and mandating a pilot timeline will shorten the time for implementation.

Members of the Advisory Committee on RN Nursing Education would serve as a steering committee through the pilot phase. The Committee would support the launch of multiple concurrent regional pilots and oversee the evaluation of the curricula as it is implemented. The Committee also would expand on existing efforts to create an online portal for the exchange of teaching methodologies and sharing of innovations similar to that being used in the Quality and Safety Education for Nurses Project and the models surveyed in this report.

Summary

Implementation of a safety-focused model curriculum would provide Texas an opportunity to build on its existing strengths and to address weaknesses which have negatively affected outcomes among programs and in practice.

The IOM core competencies described in *Health Professions Education: A Bridge to Quality (2003)* provide the broad concepts for a curriculum framework incorporating patient care as mandated by Senate Bill 139. It is the framework advocated for all health professions and has already been incorporated into the health care delivery system, reimbursement models, and funding streams for educational and research grants. Other states have adopted these competencies as well as the other structural elements identified above to reform nursing

education. The upcoming evaluation of their work can inform the Texas effort during later phases of curriculum model development and implementation.

Beyond the opportunity to improve patient safety through the integration of the IOM competencies into nursing curricula, development of a curriculum model could increase the number of nursing graduates in Texas as well as the number of nurses continuing their education. To be effective and efficient, any implementation of a model curriculum must be paired with evidence-based approaches to instruction and rigorous evaluation of outcomes. It should also leave room for continuing innovation and improvement based on that evaluation.

Resources Needed for Implementation

Establishing a new curriculum model for nursing has numerous advantages for Texas. However, making these positive changes will require both short- and long-term commitments by stakeholders in education and health care.

- **Curriculum reform is time-consuming and costly, and legislative and other statewide and regional support will be necessary.**
Bringing together representatives from each nursing education program in Texas to collaboratively develop a model curriculum will be more complex and costly in Texas than in Oregon. Texas has 94 initial licensure programs while Oregon has only 13 initial licensure programs. In Oregon, the development of a common curriculum model took more than two years and \$10 million. The Oregon effort could be used to leverage the work of other states and Texas' own initiatives, but the work here will still require a significant investment of time and money to achieve any appreciable results.
- **Changing curriculum requires careful planning and institution-level support.**
Nursing education has established curriculum models. Any changes to existing models must be phased in so that faculty can make the transition to the new model, current students who are enrolled under an existing model can complete their studies, and new students can begin the nursing curriculum under the pilot model. At the institutional level, local stakeholders should determine what instructional resources are available and what resources are needed to share within the region or to reach parity among all programs in a region. This analysis may result in the need for institutions to invest in faculty development, change their method of delivering instruction, and acquire new clinical simulation equipment and other capital items.
- **Greater participation and cooperation among hospitals/employers will be needed.**
Active participation and cooperation among schools of nursing and employers of nurses will help ensure that the model curriculum addresses the preparation of students for the complexities of 21st Century health care and provides the knowledge, skills, and attitudes to seamlessly transition into practice.

Recommendations

THECB recommends these actions or strategies to successfully implement a new curriculum model for the state's 94 initial licensure programs:

- The Texas Legislature should direct THECB to develop the proposed framework into a new curriculum model for the state's initial licensure programs as outlined in Phases 2 through 4 and provide funding to support THECB consultant services and Phase 4 pilots. THECB estimates that with in-kind support from institutions and external support from for-profit and nonprofit stakeholders, consultant services and six pilots, involving 48 schools, will cost \$15 million.
- Beginning in September 2009, nursing programs in collaboration with THECB and the Texas Board of Nursing, should inventory and assess local "best practices," current and future partnerships, and the potential for sharing faculty and instructional technology as part of the process for developing regional pilots for Phase 4.
- The Texas Legislature should support existing and new partnerships between nursing programs and between nursing programs and health care facilities through state and local initiatives.
- Higher education institutions that offer nursing programs should be prepared to provide other funding to support necessary faculty development and equipment purchases as part of the transition to the new curriculum model.

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Appendix A

Senate Bill 139, 80th Texas Legislature

A BILL TO BE ENTITLED AN ACT

relating to a study on improving the curricula of professional and vocational nursing education programs.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

SECTION 1. Subchapter C, Chapter 61, Education Code, is amended by adding Section 61.0662 to read as follows:

Sec. 61.0662. STUDY ON IMPROVING NURSING PROGRAM CURRICULA.

(a) In this section:

(1) "Professional nursing program" means an educational program for preparing students for initial licensure as registered nurses.

(2) "Vocational nursing program" means a school or program for preparing students for licensure as licensed vocational nurses.

(b) The board, in consultation with the Board of Nurse Examiners, shall conduct a study to identify methods to improve the curricula of professional and vocational nursing programs. The study must focus on methods to improve instruction on providing safe and high-quality nursing care to patients.

(c) Not later than December 31, 2008, the board shall complete the study required by Subsection (b) and submit to each institution of higher education or other entity that offers a professional or vocational nursing program in this state, the governor, and the legislature a report that includes specific, detailed recommendations concerning methods to improve the curricula of professional and vocational nursing programs, including instruction relating to patient care.

(d) This section expires January 1, 2009.

SECTION 2. This Act takes effect immediately if it receives a vote of two-thirds of all the members elected to each house, as provided by Section 39, Article III, Texas Constitution. If this Act does not receive the vote necessary for immediate effect, this Act takes effect September 1, 2007.

APPENDIX B

SAMPLE CURRICULUM INTEGRATING IOM COMPETENCIES

(The following outline was compiled by Dr. Carole Kenner, THECB's consultant on this study and dean of the University of Oklahoma College of Nursing.)

Major curricular concepts for each IOM core competency are identified and then followed by a case study application

Patient Centered Care

(Note: a "patient" could be a person in a hospital, a resident in a nursing home, or an entire community.)

Major Curricular Concepts:

1. Basic Clinical Competence
 - a. Assessment
 - b. Psychomotor skills
 - c. Research-based practice

2. Cultural/Social Care
 - a. Understanding of impact of culture, psychosocial issues, and spirituality on health
 - b. Alternative medicine
 - c. Diversity, language skills

3. Communication
 - a. Personal insight and maturity
 - b. Therapeutic communication skills
 - i. Listening
 - ii. Observation
 - c. Communication styles
 - d. Conflict management/resolution
 - e. Crisis management
 - f. Assertiveness skills
 - g. Language mastery- in oral and written formats
 - h. Negotiation skills
 - i. Presentation skills
 - j. Empathy
 - k. Advocacy
 - l. Intradisciplinary consultation

4. Ethics
 - a. Principles/models
 - b. Social justice
 - c. Ethical decision making
 - d. Resource allocation

- e. Self determination
 - f. Advocacy
 - g. Cultural considerations
5. Teaching and Learning
- a. Learning styles of self and others
 - b. Domains of learning
 - c. Learning theory
 - d. Outcome evaluation of learning
 - e. Inclusion of family in health education
 - f. Creating learning environment
 - g. Identifying teaching moments
 - h. Material development
 - i. Community education
 - j. Workplace education
 - k. Adaptation
 - l. Presentation skills (one-on-one and in groups)
 - m. Being a lifelong learner
6. Resource management
- a. Assessing patient and environment
 - b. Fiscal responsibility
 - c. Impact of staff turnover on care (staffing effectiveness)
 - d. Ingenuity
 - i. New product development
 - ii. New care methods/modalities
 - e. Benchmarking (hrs/pt/day)
 - i. Ability to analyze
 - ii. Evaluation of effect of resource management
 - f. Resource allocation
 - i. Material
 - ii. Human
7. Critical thinking/decision making
- a. Critical component of basic clinical competence
 - b. Theory-critical thinking and decision making
 - c. Application of process to all clinical situation
 - d. Methodology of critical thinking
 - e. Observation skill

Application of the concept of **Patient Centered Care**:

Ms. F is a 40 year old African-American female. She comes to the Breast Care Center with a complaint of pain in her right breast. She states that on self-examination she feels a small round, hard nodule in the outer aspect of her right breast. She states this has just appeared in last 60 days. She and the interdisciplinary clinic team discuss the use of a mammogram. She also reveals a positive history of breast cancer in her mother (diagnosis age 42). Together they decide that the mammogram will be done that day. Later in the afternoon,

the mammogram is read after verifying that this is indeed Ms. F's results (patient safety and quality monitoring), Nurse Smith calls Ms. F at home as the patient requested. Ms. F asks if they found anything on examination. The nurse indicates the test has at least two suspicious areas in the right breast and one in the left breast. Nurse Smith gives her the opportunity to come back to the clinic tomorrow to discuss with Dr. Tufts the results and options. Ms. F agrees and they make an appointment. Nurse Smith asks if Ms. F has email or Internet access. She states that she has both. Nurse Smith then gives the email address of both she and the physician if Ms. F would like to send any questions.

The next day further tests were conducted including an ultrasound and biopsy. The results were back within 48 hours. Again, Nurse Smith verifies that the biopsy results match with Ms. F before talking with Dr. Tufts (patient safety and monitoring). Dr. Tufts called Ms. F, asking her to come to clinic the next day. Ms. F requests results over the phone. Dr. Tufts is aware that she lives alone and has no family in the immediate area. But he does as the patient wishes and tells her she has bilateral cancer that appears to be non-invasive and early. She agrees to come in the next day to discuss options.

The next day, Dr. Tufts gives Ms. F all the options including conservative treatment to the other extreme of a bilateral mastectomy. She selects the latter due to her family history (her mother had a mastectomy). While the physician does not believe this course is absolutely necessary he gives her all the information she requests and tells her that the decision is hers. He asks that she think it over but tentatively schedules the surgery in three weeks as Ms. F indicates the office is very busy for the next two weeks and time off is not possible. He asks about reconstruction and she indicates she would like to pursue it. This surgery is scheduled for shortly after the initial surgery. He reassures her that her medical record will follow her from outpatient to inpatient and back. He shows her the current record on the computer screen and offers a printout if she would like. She declines. He also tells her that Nurse Smith will arrange a case manager to coordinate follow up and rehabilitation care.

The key elements of this case are:

1. Appointments and surgeries are scheduled based on the patient's needs rather than health care facility's needs
2. Access to care is according to patient's request.
3. Information is given to the patient in the manner in which she requests.
4. Care coordination is done between the nurse and physician; outpatient and inpatient settings.
5. Care is integrated and transparent.
6. Patient Safety and Quality are important aspects of the care.
7. Patient empowerment is achieved.

Interdisciplinary Care

Major Curricular Concepts:

1. Collaboration
 - a. Mutual respect/responsibility
 - b. Mutual disagreement
 - c. Valuing differences

- d. Consensus building
 - i. Listening
 - ii. Dialogue
 - iii. Facilitation
 - iv. Assertiveness
 - v. Negotiation
 - e. Teamwork Consultation
 - f. Role theory
 - g. Conflict management
 - h. Self and group assessment
 - i. Professional socialization
 - ii. Instruments of assessment
2. Communication
- a. Language proficiency: nonverbal/verbal/ written
 - b. Modalities of communication
 - i. Public
 - ii. Media
 - iii. Political
 - iv. Technology
 - 1. PDA
 - 2. Internet
 - 3. Tele-health
 - c. Crisis communication
 - d. Groups (patients/families/colleagues/organizations)
 - e. Professional culture
3. Clinical management/leadership
- a. Decision making science
 - b. Strategic planning
 - c. Delegation/accountability
 - d. Leadership theories
 - e. Mentoring/precepting/coaching
 - f. Care delivery models/ staffing
 - g. Case management
 - h. Collaboration
 - i. Clinical evaluation
 - j. Team building
 - k. Consultation
 - l. Research based innovation
4. Coordination & integration of care
- a. Health systems
 - b. Payer systems
 - c. Cultural/social systems
 - d. Resource procurement
 - e. Referral systems
 - f. Core competencies of all disciplines

- g. Oversight
 - i. Licensure
 - ii. Regulation
 - iii. Certification
 - iv. Accreditation
 - h. Regulation and scopes of practice
 - i. Labor law
5. Professional socialization
- a. Professional image / behavior
 - b. Professional responsibility
 - c. Self care
 - d. Continued competence
 - e. Code of ethics
 - f. Communication
 - i. Interdisciplinary
 - ii. Peer
 - g. Interdisciplinary Residency

Application of the concept of **Interdisciplinary Teamwork**:

Ms. F from the previous case is assigned a care coordinator, Nurse Wiley, who obtains information on her primary care physician and to determine if she is on any medications. She also asks if Ms. F is seeing any other physicians. Ms. F. states that Dr. Jones is her primary care physician who is treating her for hypertension. She is going to an OB-GYN doctor who is treating her with hormonal therapy for irregular menstrual periods. Nurse Riley conveys this important information to the oncologist and surgeon and schedules a conference call with the primary care physician, the OB-GYN, and the oncologist. The patient is given an opportunity to participate but she declines. They discuss the care and the patient's wishes for treatment. They discuss how best to manage the hypertension and what to do about the hormonal therapy. An integrated patient centered plan of care is formulated. Nurse Wiley calls Ms. F following the call to update her on the care plan.

The key elements of this case are:

1. A conference call is conducted to coordinate the care.
2. Patient is afforded the opportunity to participate in the call as a member of the team.
3. Information is given to the patient in the manner in which she requests.
4. Care coordination occurs between the nurse and physicians; outpatient and inpatient settings.
5. Care is integrated and transparent.
6. Patient Safety and Quality are important aspects of the care.

7. Patient empowerment is achieved.
8. Sharing information among team members increases communication, care coordination, and decreases risk of errors (quality monitoring and safety).

Evidence-Based Care

Major Curricular Concepts:

1. Theory from nursing and other disciplines
 - Overall understanding of theory
 - Understanding abstract thinking and how to think conceptually
 - Value of other disciplines theory to nursing and health care
2. Research
 - Clinical and health services research
 - Methodology
 - Statistics
 - Data collection
 - Critique and evaluation of research findings
 - Implications for practice
 - Dissemination

Application of the concept of **Evidence Based Practice:**

Ms. F is called by Ms. Wiley who suggests that she set up a conference call with the oncologist and the surgeon who specializes in breast cancer to make sure Ms F's decision for bilateral mastectomy is what she still wants. They also want to describe the follow up care that will be needed once the surgery is done. Ms. F is agreeable. On the call the next day, Ms. F is told about the new research to support minimal invasive surgery as well given further information about the option of bilateral mastectomy due to her positive genetic/family history. She is told in lay terms what the current research states about each option and what is considered to be state of the science care (best practices) to promote quality care. She is encouraged to voice her opinions, ask questions and with their guidance make decisions about her care. The team tells her they support her decision for the bilateral mastectomy and go over the chemotherapy and follow up care that is needed. They also address her current hormonal therapy and what adjustments may be needed due to evidence to support safe use of some hormones with a history of breast cancer.

The key elements of this case are:

1. Availability of multiple experts.
2. Application of the latest research.
3. Explanation of best practices.
4. Clinical decision support.
5. Patient teaching promotes safe care.

6. Quality monitoring and use of evidence based interventions decreases risks to patient safety.

Quality Improvement

Major Curricular Concepts:

1. Decisions based on continuous feedback loop
2. Structure – Process- Outcomes
 - a. Health
 - b. Cost effectiveness
 - c. Satisfaction
3. Best practices/delivery models
4. Benchmarking
5. Systems focus
6. Strategic management/ planning
7. Outcome reporting
8. Regulation and health policy
9. Employer of choice designation/ workplace excellence

Application of the concept of Quality Improvement:

Following the care coordination call with Ms F, the care team awaited Ms. F's decision about her surgery and treatment. Ms. F was relieved that she had been empowered to really ask questions, weigh options with the help of health professionals that were all communicating with each other to ensure high quality care. She never felt the team was trying to dissuade her from sticking to her decision about a bilateral mastectomy. She was assured that what the team offered her was scientifically based and considered the best treatment options, based on quality indicators. She also sensed that the team cared about advocating for the best quality possible for her immediate care and ultimately her life. They reassured her that they would keep her informed if new options came available throughout her treatment, and afterwards debriefed on their collaborative work, identifying areas for further improvement.

The key elements of this case are:

1. The use of quality processes for ensuring high quality care.
2. The use of quality indicators.
3. Quality review.

Use of Information Technology

Major Curricular Concepts:

1. Computer competence
 - a. Spreadsheets

- b. Field specific technology
2. Ethics and confidentiality of information management
 - a. Entry
 - b. Information sharing
4. Distance intervention/tele-health
5. PDA/ Computerized entry
6. Data driven decision making

Application of the concept of **Informatics**:

Ms. F's total history and treatment plan was kept as part of an accessible electronic medical record. The accessibility to this information allowed the interdisciplinary team to have total access at all times to her healthcare information. All team members could base their decisions on accurate and comprehensive information and awareness of all aspects of Ms. F's plan of care. Ms. F. was informed that she could have access to this information as well (Patient Centered Care). Ms. F had surgery as planned. When her hospital discharge day came, she was given a written instruction sheet with phone numbers to call if she had any questions. Her follow up appointment was scheduled with the surgeon with a promise of an email reminder two days before the scheduled visit. Again, she was provided information about her surgery, the early findings and when the biopsy results of surrounding tissue would be back. She was also told if she could not reach her surgeon that she could call any team member to ensure a prompt call back as they would all have access to all her health information.

The key elements in this case included:

1. The use of information systems and technology.
2. Electronic health records.
3. The use of databases to monitor quality and safety.

In summary, the case of Ms. F supports the five IOM competencies: Patient Centered Care, Interdisciplinary Teamwork, Evidence Based Practice, Quality Improvement, and Informatics. Threaded throughout these competencies and this case is the ultimate goal of patient safety. The IOM suggests that by employing these five core competencies that there will be a reduction in errors by care coordination, communication among health care providers, and use of evidence to support care decisions versus traditional practices that may or may not be grounded in science. The emphasis of patient empowerment is also a key element in this case and in the IOM's drive towards patient safety and quality improvement. Information system to manage knowledge assist in supporting patient safety and quality. Development of the IOM core competencies facilitates communication, empowers the patient, and leads to improved quality of care and care coordination and thus ultimately the best possible patient outcomes, given the circumstances of the patient's health status. The nurse's central role in surveillance is illustrated and her ability to impact safety through quality monitoring is described.