

Strategies to Produce New Nurses for a Changing Profession



A policy brief on innovation in nursing education
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About the Author

This paper was authored by Rebecca Klein-Collins, director of research at the Council for Adult and Experiential Learning (CAEL).

CAEL pioneers learning strategies for individuals and organizations. CAEL advances lifelong learning in partnership with educational institutions, employers, labor organizations, government, and communities. CAEL works to remove policy and organizational barriers to learning opportunities, identifies and disseminates effective practices, and delivers value-added services. CAEL aims to create a world of learners and ensure that adult education takes place anywhere and everywhere possible, whether in the classroom, at the office or factory, or within community-based or government-sponsored programs.

Strategies to Produce New Nurses for a Changing Profession

A policy brief on innovation in nursing education prepared by the Council for Adult and Experiential Learning (CAEL)

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Introduction and Summary

For several years leading up to 2008, workforce data painted a picture of an imminent crisis in the healthcare workforce, with demand for registered nurses far exceeding supply. The economic recession has provided a temporary reprieve, as older nurses postponed retirement and hospitals instituted hiring freezes. However, economists believe that as we emerge from this recession, the nursing shortage will again be present, and promises to become very large. The question for states needing to address this challenge will be the same as before the recession: **How can we produce sufficient numbers of highly-competent nurses?**

The solution is not merely a matter of opening new sections of Nursing 101 or providing scholarships to induce enrollment in nursing schools. Solutions must also address several other critical issues facing the nursing profession and nursing education, particularly the shortage of nurse faculty, the need to reform nursing education to be more deliberate in achieving well-defined student learning outcomes and competencies, and the need for nurses to achieve higher levels of education and be lifelong learners.

Given these issues and challenges, solutions to the nursing shortage will need to go beyond merely providing additional funding to nursing programs and students. There will need to be true innovation in how nurses are educated and mechanisms for seamless academic progression. In particular, **states will need to support different types of nursing education beyond traditional models.** Needed innovations are those that:

- use different kinds of faculty instructors such as qualified staff nurses in dedicated education units who have additional education and training
- are designed around the mastery of competencies rather than dictating one particular process of education
- create seamless articulations between the different levels of nursing
- use well-designed simulation tools for greater efficiency and effectiveness in instruction and assessment

The innovations may need to disrupt more traditional structures in order to achieve greater results in terms of learning, capacity, and access to the profession.

This policy brief provides some data on the projected nursing shortage, discusses the larger issues facing nursing education today, and describes pockets of innovation in nursing education that provide models for the kind of innovation policy-makers should embrace in order to meet the growing demand for a highly-educated nursing workforce.



The Rise and Fall – and Re-emergence –of the Nursing Shortage

Recession can sometimes mean relief—that is, when it helps delay a workforce shortage of mammoth proportions. For several years leading up to 2008, healthcare workforce data painted a picture of a real and growing crisis in healthcare, with demand for nurses expected to far exceed supply.

The rise in demand was expected .in part due to the aging population, since the greater numbers of older Americans would demand more nursing care. The falling supply was again linked to our aging population: large numbers of nurses were approaching retirement age. As those nurses retired, not enough graduates were coming through the pipeline to replace them.

By late 2008, workforce analyst Dr. Peter Buerhaus noted that, “A large and prolonged shortage of nurses is expected to hit the U.S. in the latter half of the next decade.”¹ At that time, the Council on Physician and Nurse Supply, an independent group of health leaders at the University of Pennsylvania, had determined that in order to meet the coming demand, the U.S. would need to increase the number of nurses graduating annually by 30%.²

These projections were alarming to national, state, and local policymakers, as well as to employers and nursing leadership. New initiatives to grow the number of nurses were launched or funded by the U.S. Departments of Labor and Health and Human Services, philanthropic foundations, states, employers, associations, and regional partnerships.

When the stock market fell, the financial system nearly failed, and unemployment rates rose dramatically, the nursing shortage became less of an immediate crisis. Many retired nurses returned to work in order to maintain family income, and many of those who were slated to retire stayed in their jobs. The recession also caused many hospitals to freeze their hiring, or reduce services. All combined, these events resulted in a reduced demand for registered nurses, and new graduates reported difficulties in finding any job as a nurse.³

The softening of demand during this recession belies the fact that **we are still facing dramatic nursing shortages in the near future.** In December 2009, the Bureau of Labor Statistics projected that more than 581,500 new RN positions will be created through 2018, increasing the size of the RN workforce needed by 22%.⁴ That same year, an article in the July/August issue of *Health Affairs* projected a shortage of 260,000 registered nurses by 2025.⁵ These projections do not take into account the additional 34 million people covered by health insurance under the new Patient Protection and Affordable Care Act, which will contribute to further increases in demand for registered nurses.

Earlier attention to this issue has produced some results. According to the American Association of Colleges of Nursing, (AACN), enrollment in entry-level baccalaureate programs in nursing increased by 3.6% in 2009.⁶ In addition, the Health Resources and Services Administration (HRSA) reports that between 2004 and 2008 the number of RNs in the United States grew by more than 5 percent.⁷ While we are headed in the right direction, there is still a huge gap to fill in order to meet the future need. This gap demands our attention as well as new approaches to how we educate nurses.

The Need to Reform Nursing Education

There are many challenges to boosting the number of registered nurses in the workforce. Chief among these is the fact that nursing schools lack the capacity to take on ever larger numbers of students. Nursing programs typically all have a classroom component and a clinical component focused on the application of skills and knowledge. The capacity issues are most significant for the clinical part of nursing education because of **shortages in both nursing faculty and clinical placement sites**. The AACN reports that in 2009, U.S. nursing schools turned away 54,991 qualified applicants from baccalaureate and graduate nursing programs, and the top two reasons for this were a lack of faculty (61.4%) and insufficient clinical teaching sites (60.8%).⁸

One way to meet the demand for new nurses, therefore, is to use different models of education that approach clinical learning and the use of faculty in new and different ways. As noted in an August 2009 article in the *Journal of Nursing Education*, “using nurses with a graduate degree to physically supervise students passing medications and performing procedures may not be the best way to use a scarce resource.”⁹ However, another driver for reform is **the need to enhance and expand student learning**. In 2010, the Carnegie Foundation for the Advancement of Teaching released *Educating Nurses: A Call for Radical Transformation*, in which researchers Patricia Benner and others concluded that nursing students today are undereducated for the demands of practice. The authors’ recommendations for reforming education focused on better integration of classroom and clinical teaching, teaching for a sense of salience in the classroom, greater emphasis on clinical reasoning, and the formation of a professional identity as a nurse.¹⁰

The need to reform clinical education comes at a time when there is **little evidence about what constitutes best practice in clinical education**. For example, schools of nursing (and some state boards of nursing) typically require a specific number of clinical hours needed for prelicensure nursing programs, even though there is no published evidence correlating the number of hours with desired outcomes (such as NCLEX-RN pass rates or employer satisfaction with performance).¹¹ Similarly, many nursing programs and state boards of nursing are reluctant to consider non-traditional educational models even when there is no evidence to support how or why traditional models are best.¹²

Finally, there have been many prominent voices in nursing education that are calling for **nurses to progress to higher level of education**: from LPN to RN, and from RN to baccalaureate, masters, and doctoral degrees. The Carnegie report, for example, recommends that even with current nursing school capacity issues, the nursing profession should be working toward requiring the Bachelor of Science in Nursing (BSN) for entry level practice, and a new report from the Robert Wood Johnson Foundation and the Institute of Medicine (IOM) recommends that “Nurses should achieve higher levels of education and training through an improved education system that promotes seamless academic progression.”¹³

Addressing all of the above at the same time will require significant, transformational innovations in nursing education.



Innovation in Nursing Education

The nursing community has a proud history of research on best nursing practice. However, the methods of instructional delivery and the structure of nursing degree programs have largely remained unchanged for the past half century, and are based primarily on tradition rather than educational research findings.¹⁴

Given the need to educate many more new nurses to higher levels of education, and given the shortages of nursing faculty to make that happen within traditional educational structures, state-based policy makers need to support educational approaches for nursing that do not merely sustain the current structures, but rather **disrupt those structures in order to achieve greater learning, greater capacity, and greater access to the profession**, all while ensuring the highest level of patient care and safety.

There are several examples of innovations in nursing that have been—or have the potential to be—such disruptions. They include dedicated education units, competency-based programs, seamlessness between the different levels of nursing education, and greater use of well-designed simulation tools.

Example 1: Dedicated Education Units (DEUs)

In a traditional clinical education program, a faculty member leaves the classroom and is assigned to a small group of students for a several weeks-long clinical education period. An innovation that disrupts this model is the development of **dedicated education units** within hospitals or other healthcare facilities. Instead of a master's educated nurse faculty member overseeing the clinical instruction and practice, specially-trained staff nurses become the clinical instructors or teachers for one or two students for several weeks or an entire semester.

Why this is innovative: With DEUs, more students can be instructed with fewer master's-educated nurses, and the students gain hands-on experience as well as knowledge from practicing nurses as they carry out their day-to-day responsibilities. A study at the University of Portland found that when its nursing program instituted the DEU model, fewer clinical faculty and fewer clinical sites were required.¹⁵

Potential challenge to implementation: Traditional clinical models that define the clinical experience in terms of hours spent supervised by a master's-educated nurse, rather than in terms of mastery of clinical competencies.

Examples of DEUs in Practice:

- The University of Massachusetts Boston—College of Nursing and Health Sciences¹⁶ (see sidebar for a closer look at this program)
- The University of Portland (Oregon), School of Nursing

A Closer Look at the University of Massachusetts Boston—College of Nursing and Health Sciences’ Dedicated Education Unit

In 2008, the University of Massachusetts Boston—College of Nursing and Health Sciences formed a partnership with nursing units at Partners Healthcare at Brigham and Womens’ Hospital and Massachusetts General Hospital. The partnership established Dedicated Education Units (DEUs) in the hospitals, where staff nurses take on the role of clinical instructors for students in the nursing program.

In the DEU, the staff nurse is paired with one or two students and works with them as a team to provide care to assigned patients. This allows the students to learn directly from a practicing nurse, and it allows the school to use nursing faculty to expand classroom capacity. The school’s website calls the DEU approach “a creative response to the education-practice gap, the nurse faculty and workforce shortages, and transition to practice issues shared by employers and schools alike.”¹⁷ The school is studying the impact of the DEU with support from a grant from the Robert Wood Johnson Foundation.

Example 2: Competency-based Programs

In traditional nursing programs, students complete their classroom education and then concurrently or subsequently complete a required clinical experience. These two components are separate experiences, often with few connecting elements. All students move through the same process of education, despite differences in their learning needs. The classroom experience often lacks context, and the clinical component may not be designed in any meaningful way around the students’ individual learning needs or specific learning objectives, and often does not include a psychometrically sound assessment of student competencies.

To enrich student learning, a number of nursing programs have implemented curricula that are designed around competencies. Some programs employ classroom-based education that presents information in broader subject areas (such as chronic illness or acute care), with the clinical component providing the student with “focused, intensive experiences” that are designed to develop the specific competencies nurses need in those areas of care.¹⁸ Other competency-based programs allow students, who come to their RN education with significant clinical health care experience, to take charge of their own learning using faculty and other resources in an unstructured manner. Students then must demonstrate competency by successfully completing a series of theory and performance examinations covering all aspects of the curriculum.

Why this is innovative: Competency-based programs are highly learner focused, in that they focus on the individual student’s achievement of learning outcomes while also measuring those outcomes in highly systematized ways. This is in contrast to more traditional approaches to nursing education that focus primarily on having all students move through the same process of education, despite their prior education, experience and individual learning needs. Competency-based models of nursing education further disrupt the traditionally-held belief that clinical instruction is achieved when a student spends an arbitrarily-determined number of hours in a hospital setting under the supervision of faculty (they are arbitrarily-determined in that the number of hours and



types of experiences required typically are not consistent among programs or schools and the methods for computing the hours are not standardized). At some nursing schools, competency-based approaches open the door to greater use of and more sound assessments of knowledge and competency so that students can progress at their own pace as they demonstrate mastery of competencies.

Potential challenge to implementation: Despite the documented achievement of the same learning outcomes by graduates of competency-based programs, some state statutes and regulations serve as barriers to RN licensure for graduates of these programs merely because the process of their education was different. In other words, there are barriers erected because of a different process of education, rather than acknowledgement of the fact that the graduates have met the same learning outcomes of all newly minted AD in nursing graduates who also go on to pass the NCLEX-RN.

Examples of Competency-based Programs:

- Excelsior College School of Nursing (see sidebar for a closer look at this program)
- Western Governors University Multi-State Approach to Preparing Registered Nurses (MAP-RN) program

A Closer Look at the Excelsior College Model

Excelsior College's Associate Degree (AD) in nursing program has offered students an accredited, competency-based approach for close to four decades. The curriculum is contemporary and consistent with accepted standards for associate degree programs set by organizations such as the National Council of State Boards of Nursing and the National League for Nursing. It is designed specifically for individuals who are transitioning from an LPN/LVN to an RN role or are coming to the nursing profession with significant experience in a clinically-oriented health care discipline (e.g., military service corpsmen and paramedics). The Excelsior approach assumes, among other things, that what a student knows is more important than where or how the student learned it, and that clinical competence, including critical thinking skills, can be acquired outside of the traditional apprenticeship model for clinical instruction.¹⁹

Building on students' previous clinical experience, Excelsior encourages students to apply their knowledge and practice clinical skills, and then requires them to build on prior knowledge by engaging with the curriculum and faculty. Students complete the general education component of the curriculum in a manner similar to all nursing students via campus-based or online courses or credit-by-examination. Students engage in the nursing component of the curriculum by successfully demonstrating achievement of learning outcomes. The goal is for the student to attain theoretical learning and clinical competence, including critical thinking, at a level required for beginning practice as an AD-prepared RN. Students demonstrate learning outcomes through their performance on a series of computer-delivered nursing theory examinations and in-person clinical performance assessments in a simulation lab and with real patients.

All examinations are created and administered in a psychometrically sound manner. Performance assessments include a Focused Clinical Competencies Assessment (FCCA™) and the Clinical Performance in Nursing Examination (CPNE®). The FCCA™ is a computer-delivered simulation examination measuring clinical competence in a number of essential areas of nursing practice.

The CPNE® is a criterion-referenced, performance examination administered over two and one-half days at 20 hospital test sites throughout the U.S. It is a complex performance examination that takes place in the authentic patient care environment with actual patients and a faculty-to-student ratio of 1:1 throughout the entire examination process. It is a mature measurement tool, used in pre-licensure nursing education for over 35 years and is continually reviewed and refined by a national nursing faculty to reflect contemporary nursing practice.

The success of Excelsior students is well-documented. Excelsior graduates pass the NCLEX-RN at a rate comparable to the national average. In addition, research shows that Excelsior graduates are successful working as nurses. In 2009, SRI International, LLC surveyed a panel of nurse supervisors and found that 82% rated Excelsior AD in nursing graduates as about the same or higher in terms of clinical competency compared to other AD in nursing graduates.²⁰

Currently, 37 U.S. jurisdictions deem Excelsior graduates eligible for licensure by examination and endorsement, without additional conditions or stipulations.

Example 3: Seamlessness between Associate and Baccalaureate Programs

Many nursing programs are working to encourage students in associate degree nursing programs to continue on and earn their bachelor's degree in nursing. One challenge faced by students is when bachelor's degree programs do not fully recognize all of the learning that students acquired during their associate-level studies, thus requiring students to take courses over again in material they have already mastered. This can make the time of earning a bachelor's degree take longer at a time when there is a need to find ways to accelerate degree attainment in nursing.

Articulation agreements have long been a solution to such credit-transfer challenges, but even those do not always fully eliminate the need for students to take redundant courses. What some nursing schools are doing to solve this problem is to establish strong partnerships between associate and bachelor's degree nursing programs that create better seamlessness for the student in moving from one degree level to another. In some of these partnerships, the institutions adopt the same curriculum in order to facilitate articulation between the programs. Another approach is when institutions develop accelerated or dual enrollment programs. Accelerated programs can, for example, provide a 12-to-18-month RN program for students with bachelor's degrees in other fields.²¹ For students without a prior degree, dual enrollment programs can provide a seamless pathway. Syracuse's St. Joseph's College of Nursing has established a partnership with Le Moyne College that offers the Dual Degree Partnership in Nursing (DDPN). In this program students spend years 1 and 4 at Le Moyne and years 2 and 3 at St. Joseph's; after year 3, the student earns the associate degree, can sit for the licensing exam, and can begin working as registered nurse while completing the bachelor's degree.²²

Why these approaches are innovative: When institutions share curriculum, or create partnerships designed with the progression of the student as a goal, the result is a clear roadmap for how a student masters the skills, knowledge and competencies required for both the associate and



bachelor's degree, and at no point does that roadmap require students to retrace their steps unnecessarily. These partnerships save the student time and money, and they have promise for producing more nurses with bachelor's degrees. Further, these articulated programs can send the message that the skills and knowledge gained by nursing students is cumulative and that what a student learns at the bachelor's level builds upon the skills and competencies gained earlier in a student's studies. In other words, what is learned at the associate's degree level "counts," in full, toward the requirements of the bachelor's degree.

Potential challenge to implementation from: Institutions that are resistant to changing their curriculum, or the order in which courses are taken, in order to create this seamlessness and eliminate duplicate coursework.

Examples of seamlessness in practice:

- Oregon Consortium for Nursing Education, a partnership of 8 community colleges and the 5 campuses of the Oregon Health Sciences University (OHSU) School of Nursing²³
- St. Joseph's College of Nursing and Le Moyne College in Syracuse, New York

A Closer Look at the Oregon Consortium for Nursing Education's Shared Curriculum

The Oregon Consortium for Nursing Education (OCNE) is a partnership of eight community colleges and five universities that have established common admission standards and a common competency-based curriculum to link community college and university programs in the consortium. Together, the consortium identified leading health indicators, safety and quality issues, and other factors to inform a list of competencies that nurses need for successful practice. The ten competencies used by OCNE describe the "new nurse" who can "function effectively in the rapidly changing health care environment."²⁴

- Because the community colleges and universities share a common curriculum, graduates of the associate degree have already completed three-quarters of the nursing courses needed for the bachelor's degree, and students have the option of completing those courses through distance learning - ideal for students who do not live close to one of the bachelor's degree programs in the system.²⁵
- In order to make the common curriculum a reality, each institution in the partnership needed to approve and accept the new curriculum through its regular curriculum change processes. In addition, the consortium worked closely with the Oregon State Board of Nursing in order to ensure state-level approval for the curriculum changes.²⁶

Example 4: Simulation

Nursing programs across the country are beginning to experiment more and more with simulation tools for instructing students in clinical skills. The simulation can be low-tech, in the form of paper-based case studies, but also can be versions that utilize mannequins or high-fidelity patient simulators. Simulation-based learning can be integrated into multiple areas in the curriculum, and it can be used in conjunction with traditional clinical rotations in a way that reduces overall demand for clinical faculty and sites.²⁷ Students initially practice their skills in the safe environments of simulation labs or simulated hospital settings, and then progress to working with real patients.

Why this is innovative: Simulation technologies provide ways to integrate classroom and clinical skill education and enhance the learning experiences of students. They provide a way to contextualize learning and reduce the need to use live patients and traditional clinical placements for the entirety of the clinical experience. Simulation has the potential to enhance student learning while expanding the capacity of nursing programs. High-fidelity simulation holds particular promise for requiring students to demonstrate complex clinical reasoning.

Potential challenge to implementation: Traditional clinical models that define the clinical experience in terms of hours spent working as a student nurse with real patients and while supervised by a master's educated nurse, rather than in terms of mastery of clinical competency; in addition, the cost of equipment required for some types of high-fidelity simulation and the faculty training to design, carry out, and assess the learning that is occurring.

Examples of Leaders in the Use of Simulation:

- The University of Texas Medical Branch School of Nursing at Galveston (see sidebar for a closer look at this program)
- University of Texas at Arlington's Smart Hospital (see sidebar for a closer look at this program)²⁸
- Indiana University School of Nursing's Research Center for Innovation in Clinical Nursing Education
- Johns Hopkins University School of Nursing

A Closer Look at the University of Texas' Use of Simulation

Technology

The School of Nursing at the University of Texas Medical Branch at Galveston has a **Nursing Interprofessional Simulation Center** that is a state-of-the-art facility that provides an interactive environment for nursing students. The center was launched several years ago, but its operation was interrupted by Hurricane Ike. It recently reopened in the wing of the affiliated UTMB Health hospital, and the School of Nursing is now using its many resources to train its nursing students. The 17,000 square foot center features:

- Six individual patient rooms with high-fidelity adult simulators used for scenario based training



- Four individual patient rooms with low-fidelity mannequins used for skills training
- A larger ward with eight to nine mannequins
- Two rooms with exam tables for teaching health assessments
- Pediatric training facilities, including three rooms with high-fidelity infant simulators, a room with pediatric exam tables, and a nursery with several dozen infant mannequins
- An obstetrics training room with three mannequins that are used to simulate the birthing process
- A larger room for group activities and presentations
- An IV room with computer-based virtual IV program and task trainers
- A control room to monitor activities in each of the simulation rooms

In addition, the center is in the process of developing a training area for electronic medical records. The system used in John Sealy Hospital at UTMB Health will be used and populated by simulated patient data.

Nursing students begin using the simulation center at the start of their first semester for skills training and this fall, first-semester students will also train on the simulators. Students spend their lab hours learning clinical skills related to the curriculum in their classroom-based instruction.

The center has a grant from the Texas Higher Education Coordinating Board to measure the impact of using the center during the students' clinical training. The study will examine whether simulation helps improve overall learning outcomes and, if so, whether outcomes are greater when simulation is used at the start of clinical training, or at the end. In the meantime, the School of Nursing continues to explore how the center can be used to improve overall student learning at every stage of the program.²⁹

In another part of the state, the University of Texas at Arlington's School of Nursing has developed the **Smart Hospital**, a 13,000-square foot facility that uses a variety of simulation technology for the clinical instruction of nursing students at all levels. The size of the facility allows for different settings of simulated care, including emergency, adult intensive care, neo-natal intensive care, labor and delivery, pediatric and medical-surgical. The school combines the Smart Hospital activities with a traditional clinical rotation, but the expanded use of simulation reduces the overall need for clinical placements while providing valuable opportunities to practice skills in a safe setting.³⁰

Policy Recommendations

Given the recent reports on nursing education from prominent authorities such as Carnegie and IOM, and given the strong leadership of the National League of Nursing, the need to reform and improve nursing education is gaining much-needed attention. The role of state-based policy makers is important to this challenge. State leaders can provide incentives to innovation and also remove disincentives and barriers, where they exist.

Recommendations for state-based action to support innovation in nursing education include requiring state legislatures and boards of nursing to:

1. Include language in statutes, rules, and regulations that recognizes the substantial equivalence of proven innovative models of nursing education, such as regionally- and professionally accredited competency -based nursing programs, whose graduates achieve the same learning outcomes as do those of traditional programs albeit in different ways.
2. Examine all current statutes, rules, and regulations used for determining graduates' eligibility for nursing licensure and for approval of nursing education programs to ensure that all are based on sound evidence. Laws, rules, and regulations that are based only on provincial thinking and tradition should be challenged and, when appropriate, revised.
3. Require the use of psychometrically sound assessments of competence in all programs and in every aspect of the curriculum, especially within the clinical component.

Conclusion

Paving the way to greater innovation in nursing education needs to be a priority of states and nursing educators as they look to future healthcare needs and the imminent shortages of registered nurses. National leaders have pointed to the need to improve nursing education, create opportunities for progression to higher levels of nursing education, leverage technology for more efficient and effective instruction, and focus on learning outcomes. As nursing programs explore how to address these needs through innovation, states need to ensure that unnecessary barriers are minimized or removed. States need to support educational approaches for nursing that do not merely sustain the current structures, but rather disrupt those structures in order to achieve greater learning, greater capacity, and greater access to the profession. This can be accomplished while ensuring the highest level of patient care and safety. With more innovation, it will be possible to educate more nurses to higher levels of knowledge and competence in their profession and meet our nation's healthcare needs for years to come.



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