Critical Conditions: Preparing the 21st-Century Nursing Workforce

Special Report
by Courtney L. Vien, PhD

Acknowledgments

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Apollo Research Institute conducts research that demonstrates the value of education for the current and future workforce. Through academic and industry partnerships, Apollo Research Institute makes research-based recommendations to help leaders ensure today's workforce is employable tomorrow.

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Critical Conditions: Preparing the 21st-Century Nursing Workforce

Special Report on an Expert Panel Event Sponsored by Apollo Research Institute

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The nursing profession stands at a crossroads. Due to healthcare reform and the aging of the American population, the need for healthcare is expected to grow substantially in the near future. Hospital patients tend to be sicker and spend less time in the hospital than patients of just 5 years ago, and more healthcare is being performed on an outpatient basis. Technological advances are changing many aspects of healthcare, from nursing education to the way patients' records are kept to how medications are administered. These rapid changes in the field of healthcare have led to calls for nurses to achieve greater levels of education: The Institute of Medicine, for instance, has recommended that the proportion of nurses who hold bachelor's degrees be increased from 50% to 80% by 2020. At the same time, however, many regions of the U.S. are experiencing a nursing shortage that will likely intensify in years to come. A shortage of nursing faculty has led experts to turn their attention to reducing the nursing shortage and skills gap.

To further examine these issues and offer potential solutions, Apollo Research Institute convened nursing thought leaders for a panel discussion hosted by *The Chronicle of Higher Education* at the National Press Club in Washington, DC, on June 21, 2011. The eight panelists comprised two panels representing a broad range of healthcare professionals—including nurse executives, nurse educators and researchers, nursing industry advocates, and medical technology innovators. The table below displays the composition of the two panels.

Panel 1: Nursing's Critical Condition: Shortage, Skills Gap, and the Human Touch	Panel 2: Solutions for Next-Generation Nurses: Education, Technology, and Policy
• **Kristy Chambers,** MSN, RN Co-Founder and Principal Partner, Medical Simulation Design	• **Carlton G. Brown,** Ph.D., RN President, Oncology Nursing Society
• **Athena Palearas,** MS, RN, CNN, LNC Corporate Vice President of Education, Fresenius Medical Care North America	• **Dawn Bazarko,** DNP, MPH, RN Senior Vice President, Center for Nursing Advancement, UnitedHealth Group
• **Maureen Swick,** Ph.D., MSN, RN, NEA-BC Senior Vice President and Chief Nurse Executive, Inova Health System Member, American Organization of Nurse Executives	• **Parvati Dev,** Ph.D., FACMI CEO, Innovation in Learning Inc. Distinguished Visiting Scholar, Media X, Stanford University Former Director, SUMMIT Lab, Stanford University School of Medicine
• **May Wykle,** Ph.D., RN, FAAN, FGSA Dean and Marvin E. and Ruth Durr Denekas Professor of the Frances Payne Bolton School of Nursing, Case Western Reserve University President, Friends of the National Institute of Nursing Research	• **Pamela Fuller,** Ed.D., MN, RN Dean, University of Phoenix College of Nursing Board Member, Southwest/Arizona Board of the American Liver Foundation Member, Arizona State Board of Nursing Education Committee

Dr. Tracey Wilen-Daugenti, Vice President and Managing Director of Apollo Research Institute and a visiting scholar at Stanford University's Media X program for research on technology and society, moderated both panels. Dr. Bill Pepicello, President of University of Phoenix, gave the opening and closing remarks, and Chris Leighton from *The Chronicle of Higher Education* introduced the speakers.

Sixty-nine people representing 44 colleges and universities and various corporations, healthcare organizations, and nursing and healthcare associations attended the event. Below is an overview of the major topics panelists discussed and the solutions they and their organizations have devised to many of the problems the nursing field now faces.

I. The Nursing Shortage

The nursing shortage, panelists observed, is a complex phenomenon: In certain parts of the country, new nursing graduates have difficulty finding jobs, while in other locations, many nursing positions go unfilled. Nurses' skill sets also vary by region; in some areas employers have difficulty finding nurses with the right skills for the jobs they are offering. The average age of nurses is still high, panelists noted, and many retirements are expected in the near future, which will exacerbate the shortage.

One major cause of the nursing shortage, several panelists commented, is the nursing faculty shortage. Nationwide,

nursing schools are limiting enrollments and canceling classes because not enough faculty are available to meet the demand. The faculty shortage is intensifying the nursing shortage while making it difficult for nurses to continue their education. In some locations, students who want to enter nursing programs are placed on waiting lists. Maureen Swick's son is one of these students. "It's frustrating because he's male and interested in mental health," she said, "and both male nurses and mental health nurses are in short supply." A related problem, May Wykle stated, is a shortage of clinical sites where nursing students can be trained.

Figure 1. Projected Supply and Demand of Full-Time Registered Nurses
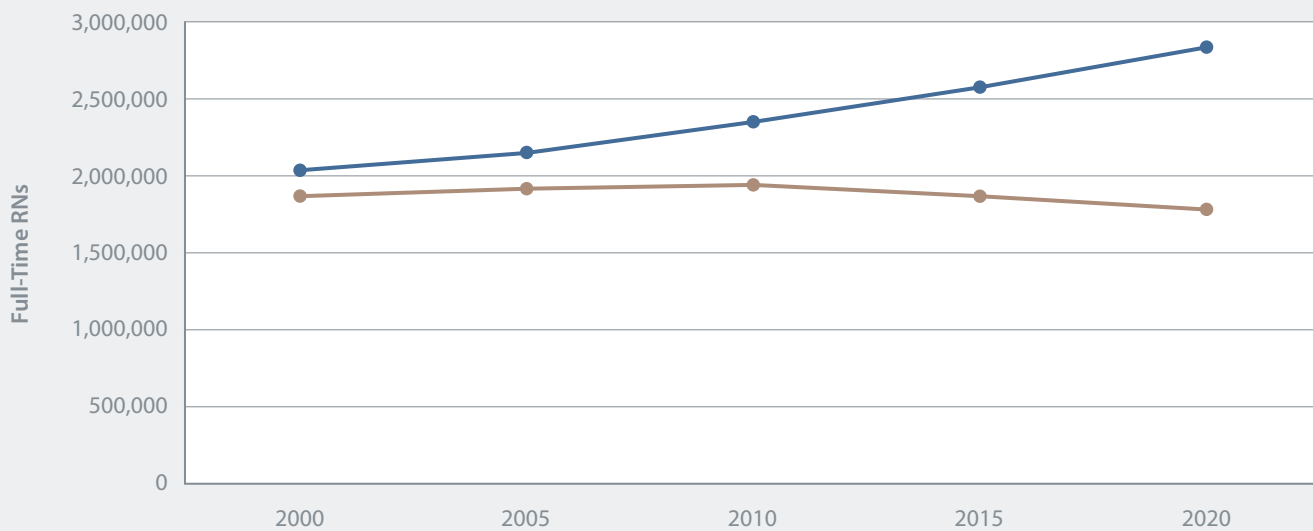
	2000	2005	2010	2015	2020
SUPPLY	1,890,700	1,942,500	1,941,200	1,866,100	1,808,000
DEMAND	2,001,500	2,161,300	2,347,000	2,569,800	2,842,900

Source: U.S. Health Resources and Services Administration, http://bhpr.hrsa.gov/healthworkforce/reports/behindrnprojections/4.htm

Potential Solutions

Expanding the Concept of Faculty

Ending the faculty shortage, panelists agreed, is essential to ending the nursing shortage. One possible way to attract more nurses to faculty is by improving instructors' compensation and benefits. As Carlton Brown observed, "A new nurse graduating this year can work in the emergency room or critical care and potentially make more money than

> *"To address the faculty shortage, we're going to have to reach out to nurses who may not see themselves in the role of faculty."* — *Carlton Brown*

the faculty members who were just teaching her." Another idea is to consider alternatives to full-time, permanent faculty members. As Brown remarked, teaching is already part of many nurses' jobs. "Nurses often educate patients and one another," he said. "To address the faculty shortage, we're going to have to reach out to nurses who may not see themselves in the role of faculty."

Many organizations have already done so. The nursing school at University of Phoenix, for example, utilizes practitioner faculty: instructors who teach part-time while continuing to work in their field. "They work for us because they love to teach, but also to supplement their income,"

Pamela Fuller said. These faculty members, she noted, have the added benefit of bringing their real-world experience to the classroom. Schools can also partner with healthcare organizations whose nurses can work as adjunct faculty members, mentors, or preceptors. About 50 nurse leaders at UnitedHealth Group serve as adjunct faculty members, and master's-prepared nurses at Inova also teach at local institutions. Such arrangements benefit both employers and educators, Dawn Bazarko said, because employers are able to inform the academic world about what skills nurses need in the workplace, and educators can ensure that graduates have the competencies they need to be hired. Practitioner faculty, she added, provide students with role models and allow nurse leaders to better understand the opportunities and challenges facing today's nursing students.

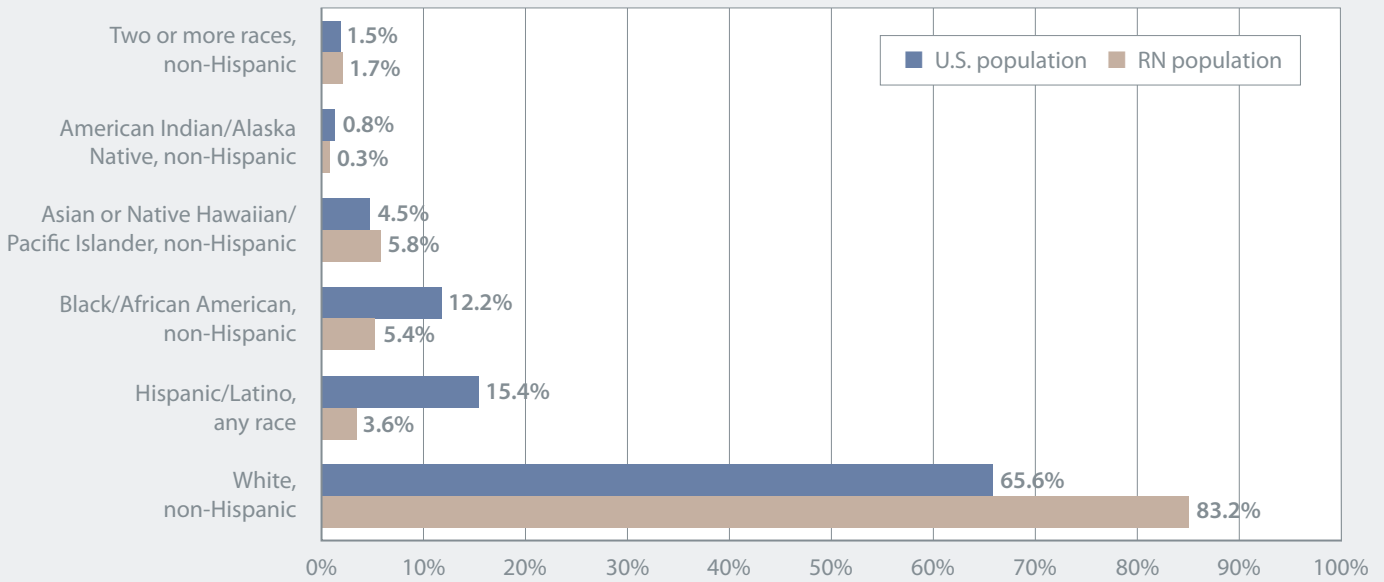### Increasing Access to Education for a Diverse Student Body

Decades ago, most nurses fit a specific demographic profile: Caucasian women who attended nursing school in their late teens or early twenties. The majority of nurses are still white and female (Figure 2). To end the nursing shortage, new segments of the population—including men, minorities, older students, and people re-careering—will need to enter the profession.

Case Western Reserve University has had considerable success recruiting minority students: its incoming class is

Panel 1: *Nursing's Critical Condition: Shortage, Skills Gap, and the Human Touch.* From left: May Wykle, Athena Palearas, Kristy Chambers, Maureen Swick, and Tracey Wilen-Daugenti. A sign language interpreter is in the background.

Figure 2. Distribution of Registered Nurses and the U.S. Population, by Racial/Ethnic Background

Category	U.S. population	RN population
Two or more races, non-Hispanic	1.5%	1.7%
American Indian/Alaska Native, non-Hispanic	0.8%	0.3%
Asian or Native Hawaiian/Pacific Islander, non-Hispanic	4.5%	5.8%
Black/African American, non-Hispanic	12.2%	5.4%
Hispanic/Latino, any race	15.4%	3.6%
White, non-Hispanic	65.6%	83.2%

Source: U.S. Health Resources and Services Administration, 2008 National Sample Survey of Registered Nurses, http://bhpr.hrsa.gov/healthworkforce/rnsurvey/2008/nssrn2008.pdf

25% African American. The university works to ensure that more young minorities will become interested in nursing by sending its students to assist at underserved junior and senior high schools. "The students help the young people understand that they, too, can be nurses," Wykle said.

In addition to generating interest in nursing as a career, expanding access to nursing education is a necessary step towards reducing the shortage. Oftentimes, nursing students are nontraditional learners: adults who work part- or full-time while raising a family and pursuing a degree. "Once, most nursing students were 18 to 24 years old and supported by their parents," Fuller said. "That's not the case today. The nontraditional student has become the traditional student." Colleges and universities can help nontraditional students by offering flexible scheduling and providing classes in a variety of formats, both on site and online. Schools can also respond to the nursing shortage by offering master's degrees in nursing for people who have bachelor's degrees in other fields and want to change careers. Such programs are especially popular with men, Wykle said.

Increasing Retention

As several panelists stated, nursing is a stressful profession. Athena Paleareas performed a study on empathy and discovered that nurses who had been in the profession more than 2 years were *less* empathetic than nurses who had been active for less than two years, partly due to compassion

fatigue and burnout. Stress and related emotional conditions can lead to turnover, so one key to reducing the nursing shortage is supporting nurses' well-being. Programs that promote nurses' engagement with their workplace, and that recognize their contributions, have been shown to increase retention rates. UnitedHealth Group's Center for Nursing Advancement (Center), for example, is an organization focused on creating a more highly educated and effective nursing workforce—something critically necessary to meet the needs of the changing health care environment.

To support nurses to be even more impactful, the Center's programs are aimed at increasing workplace engagement, satisfaction, and personal well-being. Since the Center's

Athena Palearas (center) answers a question as May Wykle (left) listens.

inception a little more than 3 years ago, nurse engagement scores at the company have increased 11%. Some of its initiatives include mentoring, reward and recognition programs, educational advancement, and even stress reduction programs. "You can't take care of others if you don't first take care of yourself," Bazarko noted of the latter programs, which instruct nurses in such self-care skills as mindfulness, meditation, and yoga. "We observed remarkable results in the nurses who participated in the program: They reported statistically significant reductions in perceived stress and personal and professional burnout, and positive

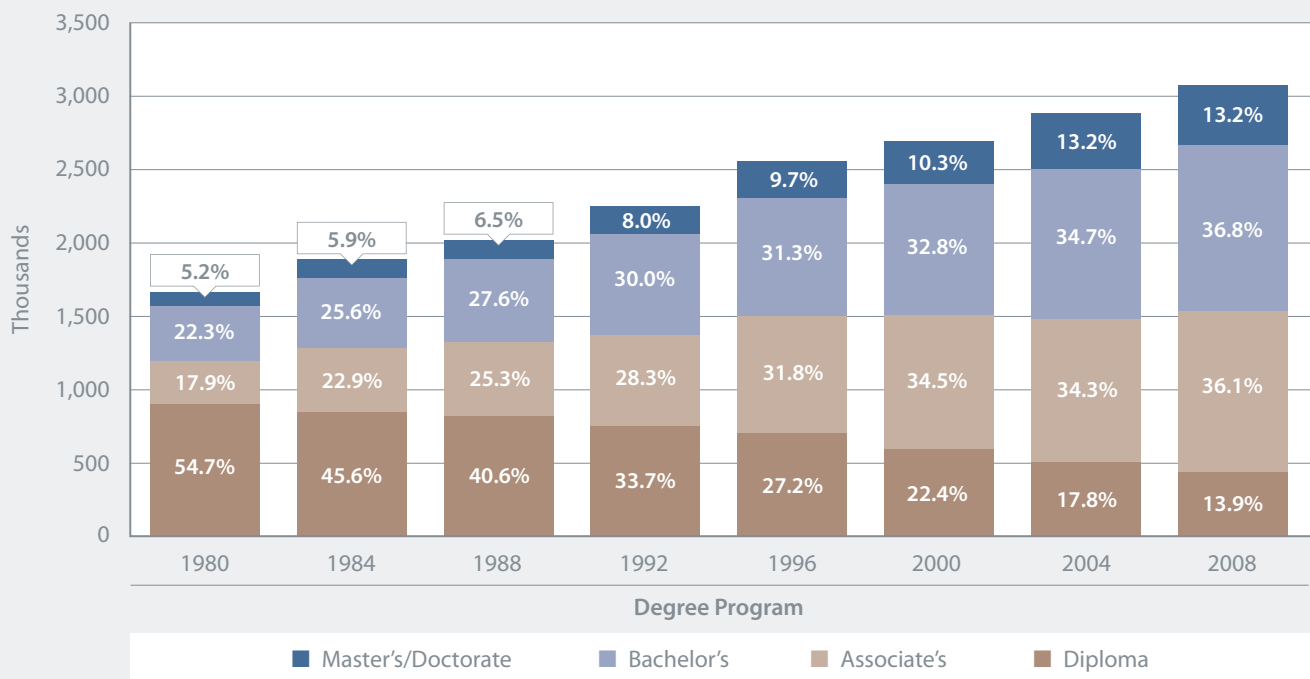changes in terms of self-compassion, serenity, and empathy—all indicators that translate to good patient care."

Mentoring programs can also improve nurses' job satisfaction. New nursing hires at UnitedHealth Group, many of whom have not worked in a business setting before, are paired with mentors who help them transition. Palearas, whose organization, Fresenius Medical Care, also has a formal mentoring program, claimed that such programs need institutional support to succeed. "The challenge is to make executives recognize that things like mentoring are important, even if they don't directly result in financial gain."

II. Responding to the IOM Recommendations and QSEN Competencies

In 2010, the Institute of Medicine (IOM) released a report entitled *The Future of Nursing: Leading Change, Advancing Health*. The result of a two-year initiative by the IOM and The Robert Wood Johnson Foundation to assess and transform the nursing profession, the report recommended that nurses attain higher levels of education; that they

practice to the full extent of their education and training; and that they become full partners in redesigning U.S. healthcare. The IOM researchers also cautioned that healthcare needs a better data collection and information infrastructure. Panelists discussed the repercussions of the IOM report for the nursing profession, particularly focusing

Figure 3. Highest Nursing or Nursing-Related Education Achievement, 1980–2008

Year	Master's/Doctorate	Bachelor's	Associate's	Diploma
1980	5.2%	22.3%	17.9%	54.7%
1984	5.9%	25.6%	22.9%	45.6%
1988	6.5%	27.6%	25.3%	40.6%
1992	8.0%	30.0%	28.3%	33.7%
1996	9.7%	31.3%	31.8%	27.2%
2000	10.3%	32.8%	34.5%	22.4%
2004	13.2%	34.7%	34.3%	17.8%
2008	13.2%	36.8%	36.1%	13.9%

(Y-axis: Thousands, scale 0 to 3,500; X-axis: Degree Program)

Note: The totals in each bar may not equal the estimated numbers for registered nurses in each survey year due to incomplete information provided by respondents and the effects of rounding. Only those who provided nursing education information are included in the calculations used for this figure.

Source: U.S. Health Resources and Services Administration, 1980–2008 National Sample Survey of Registered Nurses, http://bhpr.hrsa.gov/healthworkforce/rnsurvey/2008/nssrn2008.pdf

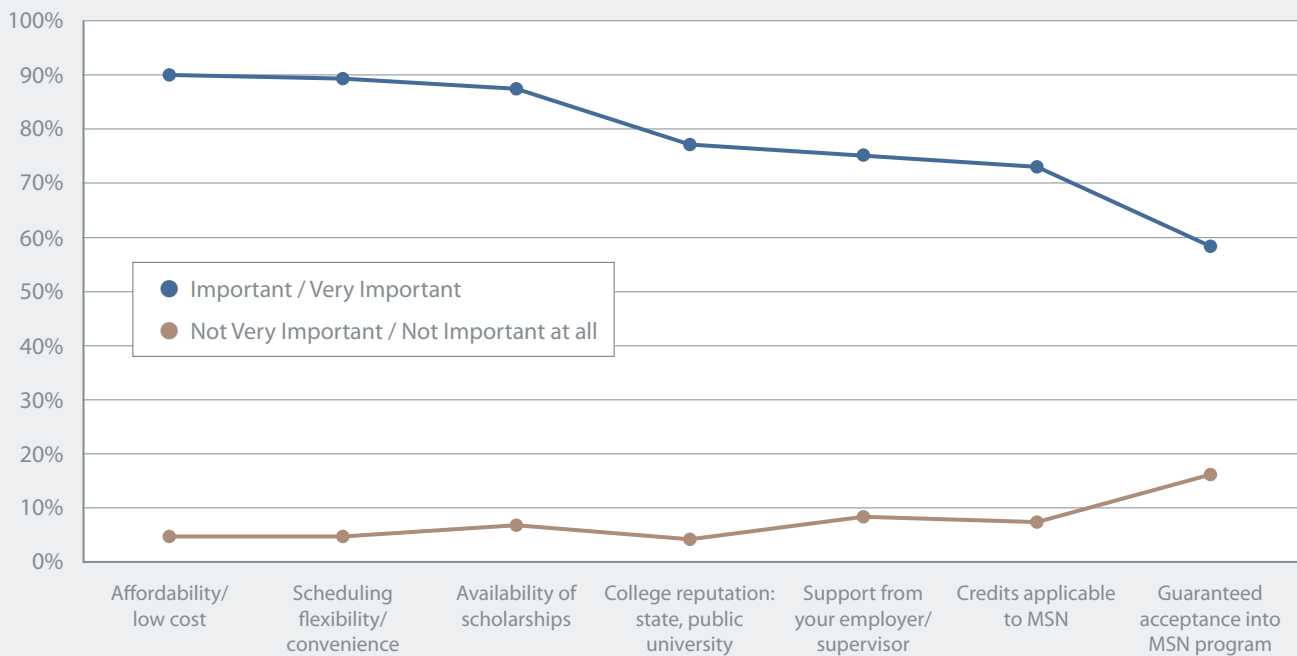Pamela Fuller (left) speaks. Also pictured: Parvati Dev and Carlton Brown.

on the recommendation that 80% of nurses hold a bachelor's degree or higher by 2020.

The panelists likewise considered patient safety issues—particularly the implications of the Quality and Safety Education for Nurses (QSEN) competencies—for nursing education and practice. QSEN, an initiative funded by The Robert Wood Johnson Foundation, addresses issues related to preparing future nurses to practice safely and with high standards of care. Nurse leaders involved in the QSEN project have created frameworks of recommended quality and safety competencies that nurses should develop.

Several panelists' organizations are actively addressing the IOM recommendations and QSEN competencies and working to improve patient safety. The College of Nursing at University of Phoenix, Fuller says, is incorporating the IOM recommendations and QSEN competencies into its curriculum. "We are now examining every single course and looking at how we can integrate these recommendations and demonstrate outcomes," she said. Parvati Dev's company, Innovation in Learning, is collaborating with the Institute for Healthcare Improvement to increase patient safety through simulations. They have created a simulation involving ventilator patients on a virtual ward that requires nurses to learn safety protocol. "When students enter the simulation, they have to determine whether the bed angle is correct, whether the patient's head is raised, whether the right oral care is being given—all things that can compromise a ventilator patient's safety," Dev said. "It's just one of so many safety issues you can teach through this sort of simulation exercise."

Figure 4. Factors Affecting RN-to-BSN Students' Choice of Degree Programs

Important / Very Important

Not Very Important / Not Important at all

| Affordability/ low cost | Scheduling flexibility/ convenience | Availability of scholarships | College reputation: state, public university | Support from your employer/ supervisor | Credits applicable to MSN | Guaranteed acceptance into MSN program |

Source: Adapted from "What Are Working Nurses Looking For in B.S.N. and M.S.N. Degree Programs?" by Eduventures, 2007, http://www.eduventures.com/private/papers/what-are-working-nurses-looking-for-in-b-s-n-and-m-s-n-degree-programs-ohe-custom-research-report. Copyright 2007 by Eduventures.

Making Higher Education More Attainable and Attractive

Panelists avidly discussed the IOM's recommendation to increase the percentage of nurses with bachelor's degrees: how it could be implemented, whether it was feasible, how nurses could be encouraged to return to school, and how to recognize the contributions of experienced nurses who do not hold bachelor's degrees.

For more nurses to receive bachelor's degrees, panelists pointed out, employers and educators need to make education more attainable, especially for the large percentage of nursing students who are nontraditional learners. Flexible scheduling, Fuller said, can be a boon to nontraditional students who have work and family responsibilities. University of Phoenix, for example, does not have a traditional academic year; instead, classes are offered on a rolling basis and students take one short, intensely focused class at a time. "Our surveys show that students really enjoy being able to concentrate on one subject at a time and become competent in it before moving on to the next," she said. Online classes are also convenient for time-strapped nursing students, and offer social and educational benefits as well. "In online classes, students from many different parts of the country can take the same class at the same time," Fuller said. "It's a rich environment because they can discuss their coursework but also what's happening in their communities."

Audience members listen to the panel discussions.

Panelists also mentioned various ways employers can motivate nurses to seek higher education, including clinical ladder and professional development programs and incentives such as scholarships and flexible work schedules. Educators at four-year institutions can also encourage nurses with associates' degrees to complete bachelor's degrees, Wykle said, by partnering with community colleges and

Figure 5. Comparison of the average ROEI for traditional and nontraditional nursing students earning a BSN in 2010
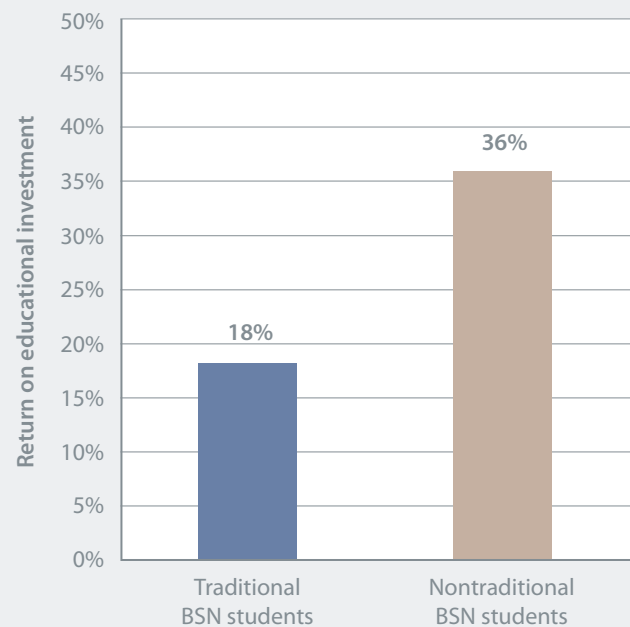
Source: "Return on Educational Investment: Nursing" [Executive summary], by Apollo Research Institute, 2011, http://apolloresearchinstitute.com/sites/default/files/roei-nursing-exec-summary.pdf.

making associate's degree students aware of the educational options that are open to them. Employers and educators may also need to demonstrate the benefits of earning bachelor's and advanced degrees, especially to full-time nurses who may not consider returning to school worth the effort. These benefits can be considerable, especially for nontraditional students: As a recent Apollo Research Institute study found, nontraditional nursing students earning a BSN in 2010 will receive a 36% return on their educational investment (ROEI)—twice the ROEI of 18% earned by traditional nursing students.*

Several panelists observed a generational difference in nurses' willingness to earn baccalaureate degrees. Younger nurses, they stated, are more receptive to the idea of pursuing a bachelor's degree, while older nurses are often more resistant. "Many of the younger nurses we employ either have a baccalaureate already or quickly enroll in a bachelor's program after being hired," said Swick. Panelists stressed the need to value the contributions of older nurses and the wealth of experience they possess—even when those nurses choose not to pursue higher education.

*An executive summary of the study can be found at http://apolloresearch institute.com/sites/default/files/roei-nursing-exec-summary.pdf.

The clinical ladder program at Fresenius, for instance, now allows nurses without baccalaureate degrees to progress to RN3 status. After listening to its older nurses, who lacked motivation to move towards RN3 status, the company created two RN3 paths: one that requires a bachelor's degree and one that takes experience and non-bachelor's certification into account. Inova's clinical ladder program, likewise, is designed to reward nurses for earning bachelor's and master's degrees, but also takes into consideration the elevation of the RN role.

III. Integrating Technology Into Nursing Education and Practice

As Maureen Swick commented, "Technology can be our best friend or our worst enemy." Both the positive and negative sides of technology were avidly discussed. Most panelists viewed technology as an invaluable and increasingly crucial component of healthcare, and were optimistic about the ways technology can enhance nursing education. However, panelists also believed that technology was not always deployed properly in either patient care or educational settings. Indeed, many nursing programs do not yet incorporate enough instruction on the technologies new nurses will encounter in practice settings. As an Apollo Research Institute study has found, new nurses lack many

Figure 6. New/Novice RN and Nurse Manager Perceptions of Knowledge and Skill Strengths	
Knowledge and skills nurse managers and new/novice RNs agree are strengths	Word processing Email Presentation development Internet and search engine usage Keyboarding Nursing note documentation
Knowledge and skills nurse managers and new/novice RNs agree are development areas	Database use Webpage design Electronic publishing Computer languages Coding for billing purposes Electronic billing/payment Graphics development Order entry Spreadsheet development
Knowledge and skills new/novice RNs feel are strengths, yet nurse managers believe are development areas	Online classroom/education Data entry Medication administration documentation Treatment documentation Graphics documentation and tracking Patient education material retrieval Patient education documentation Lab results retrieval Diagnostics results retrieval Electronic chart content access Prior admission data access Care plan development and updates Discharge planning documentation and updates
Note. Knowledge or skill is listed if more than 50% of reporting RNs or nurse managers placed it in that category.	

of the skills they need to use electronic health records effectively.* Panelists stressed the need for a more strategic implementation of technology and information systems that takes into greater account the needs of nurses, who are often the primary users of healthcare technology.

The Promise of Technology in Nursing Education

"Teaching nursing is as much experience-based as it is fact-based. There's a great transfer of knowledge through experience in nursing education," Dev stated. Simulation technology—using lifelike manikins, virtual reality, or actors to simulate the healthcare setting—can be one means of increasing nursing students' clinical experience. Panelists saw many advantages to the use of simulations. Simulations can reduce the need for clinical practice sites, which are often in short supply. They also increase patient safety by giving students experience before they work with actual patients.

Simulations can expose students to situations they may not encounter in a hospital-based clinical setting. "A group of students can spend months in a medical/surgical unit without ever encountering a patient with appendicitis," Brown said. "With simulations, we can ensure that they

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*A summary of this study's findings is available at http://apolloresearch institute.com/sites/default/files/novice-nurse-electronic-health-record-knowledge-and-skill-gaps-in-acute-care-settings-preliminary-findings.pdf.

have that experience." Furthermore, as panelists mentioned, simulations can feel as real and immersive to students as traditional clinicals. "When students walk into the simulated environment, they realize within the first 30 seconds that they're completely responsible for the patient and that they have to rely on their own clinical judgment to make decisions," Fuller said. Students become emotionally involved in simulations: Brown recalled that students will sometimes cry when a manikin "dies" because they have become so invested in the simulation. The more students are able to believe in a simulation, panelists agree, the more value they gain from the experience.

The Need for Technology Strategies

As several panelists explained, implementation of technology in healthcare and educational organizations often occurs in piecemeal fashion: Different systems are purchased at different times, without input from those who will be using the technology or enough regard for whether the systems can communicate with one another. Swick mentioned that Inova uses over 170 different systems, none of which are integrated with the others, leading staff to create workarounds. Chambers observed that, too often, vendors drive technology purchases. While working for a leading medical simulation company, she frequently saw

Panel 2: *Solutions for Next-Generation Nurses: Education, Technology, and Policy.* From left to right: Pamela Fuller, Parvati Dev, Carlton Brown, Dawn Bazarko, and Tracey Wilen-Daugenti.

top executives buy expensive, state-of-the-art simulation systems without considering whether such technology met the needs of their curricula.

Having a technology strategy, panelists say, is essential to ensuring that technology adds value to an organization. Chambers, whose company consults with organizations to help implement educational technologies, recommends that educators reexamine the way they buy technology. She suggests that they perform needs assessments to identify their goals and the outcomes they want learners to achieve before purchasing equipment. Fuller, likewise, stated that even though technology can enhance education considerably, "the methodology of teaching is what's most important." At University of Phoenix, she said, simulation technology is carefully integrated into the curriculum: faculty develop scenarios for the simulation labs that map to different course objectives, and, after each simulation lesson, students debrief with faculty and one another to reflect on what they said and did. Strategy is equally important outside the educational arena. Swick found that Inova employs a team of nurse informaticists who study process and workflow on the hospital floor and consult with staff to make recommendations about the use of technology.

The Technology Generation Gap

As some panelists observed, today's nursing students tend to be more computer-literate than their instructors. Wykle noted that many faculty members are intimidated by online learning and course delivery systems, which can make them less effective teachers for technologically-proficient students. Chambers agreed, observing that faculty members who did not grow up with computers often fear looking foolish in front of their students. She advises faculty to move outside their comfort zones and be willing to learn new skills; in doing so, she says, they will set a positive example for students.

Preserving the Human Touch

Panelists agreed that, although technology is changing healthcare in a dramatic fashion, the personal connection between nurse and patient still lies at the core of nursing. As Wykle put it, "Change has come, but the need for the nurse at the bedside has not changed." Palearas concurred. "Nobody touches a patient quite like a nurse does," she said. "Nursing will always have its roots in that humanistic connection for the benefit of the patient." At the same time, Palearas acknowledged that one of her greatest challenges

May Wykle speaks with a member of the audience.

was "incorporating nursing practice in such a way that nurses, and not technology, are driving care." In her field, dialysis, she has seen technology advance in such a way that machines are able to do more for patients than ever before. "Technology used to provide about 30% of dialysis care; now it provides about 70%," she remarked.

> "Nursing will always have its roots in that humanistic connection for the benefit of the patient"
> — Athena Palearas

But technology and caring are not mutually incompatible. Technologies can be designed in such a way to foster the humanistic side of nursing. Chambers noted that simulations can teach behavioral skills as well as technical skills. Situations involving family or cultural issues, she said, can be embedded into simulation modules. Simulations are videotaped, and after each session, students watch the video with instructors or classmates to observe how they communicated with patients and colleagues.

IV. Fostering Nurse Leadership

Nurses today do much more than care for patients at the bedside, as the makeup of this panel demonstrates: They are business leaders, C-suite executives, consultants, technology innovators, entrepreneurs, and policy advocates. In the future, nurse leaders should become even more prominent in the profession, as more nurses are earning advanced degrees and taking on strategic roles in healthcare organizations. Panelists agreed that students and younger nurses should be encouraged to pursue leadership positions, and suggested various ways to do so.

Nurses as Businesspeople

"Nurses are already proficient at caring for patients. But now, the world is changing," Bazarko said. "We need nurses who not only possess compassion and good clinical skills but who also serve in leadership roles and truly transform health-care." As an example, she pointed to UnitedHealthcare's Ever-care program. Evercare, started by two nurse practitioners, is one of the nation's largest care coordination programs for people who have long-term or advanced illnesses, are older, or have disabilities and provides access to coordinated, personalized care.

Nurses like these have the opportunity to improve health-care on a macro as well as micro level. However, Bazarko believes that not enough nurses are moving into executive positions or developing the business and financial acumen necessary to serve in broader leacership roles.

To encourage the creation of an executive mindset and en-hanced nurse leadership competency, UnitedHealth Group supported the launch of a leadership development program in collaboration with the University of St. Thomas. In this program, a cohort of nurses takes courses to build skills in areas such as executive communications, systems thinking, finance, and change management.

Nurses as Policymakers

It is equally important that nurses take a more active role in politics, said Brown. His years in Washington have

Audience members read *Vital Signs: Educating Tomorrow's Nurses,* a University of Phoenix® Knowledge Network publication about nursing and higher education.*

Vital Signs is available in PDF format at http://cdn-static.phoenix.edu/content/dam/altcloud/doc/VitalSigns.pdf?cm_sp=UOPX+Knowledge+Network-_-PDF-_Vital+Signs.

convinced him that legislators want to hear nurses' perspectives on healthcare issues. Yet nurses, he finds, are often intimidated by policymakers. "I've known very astute nurses who have practiced for 25 to 30 years and had research experience and held Ph.D.s who still didn't feel comfortable going in and talking to their representatives," he said. Brown advised nurses to remember that policymakers "are just average people who want to hear the stories of their constituents. People find them intimidating, but once you sit down and talk with them, you learn they're just regular people." The Nursing Organizations Alliance, he said, also runs the Nurses in Washington Internship, a conference program held in Washington, D.C. that teaches nurses how to speak with their representatives and advocate for change.

Educators can help student nurses view themselves as advocates, Fuller added, by integrating into nursing curricula critical policy issues, such as the restrictions some states place on nurse practitioners, which require them to practice under a licensed physician.

V. Future Trends in Healthcare

Panelists discussed the issues, changes, and trends they believed would have the greatest impact on healthcare in the near future. Below is a summary of some of the most prominent trends.

The Aging Patient Population and the Increased Need for Cancer Care

As Brown mentioned, by 2020 the number of people 65 and older in the U.S. is expected to increase by 81%. Many of these longer-lived individuals will develop cancer, which, as Brown explained, "is primarily a disease process of the elderly." New cardiac medications are helping people prevent or live through cardiac events, allowing them to live longer but also to "become old enough to produce cancers that they were genetically predisposed to develop," he said. More oncology nurses and healthcare providers will be needed to care for this population.

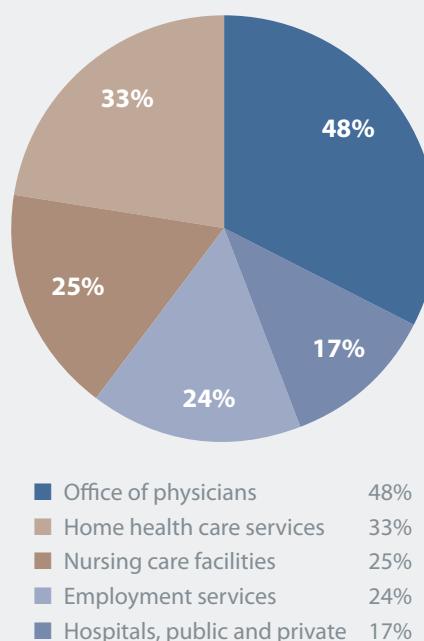### The Rise in Outpatient Services

Panelists mentioned that, just over the past 2 to 3 years, hospital stays have become shorter and hospital patients tend to be sicker when admitted. "Today, people can have their gallbladder removed and go home in 18 hours, or have a Caeserean section and be out in 24 hours," Brown said. Concurrent with these shorter hospital stays has been a rise in outpatient care. "Over the past 5 years, outpatient care has become an increasingly popular way to treat cancer patients; now some patients only go to the hospital or care center for chemotherapy once every three weeks," Brown added. "We're also starting to see a movement from the outpatient center to the home as more chemotherapy is being administered at home." This movement changes the way nurses respond to patients. "If nurses only see a patient once every three weeks, they have no idea what symptoms that patient's experiencing," Brown said. "New systems are needed to track patients' symptoms on a daily basis."

The Care Team Model

Some panelists noted the increasing prominence of the care team model—a way of caring for patients in which nurses, physicians, pharmacists, and other professionals work together as a nonhierarchical team. "Bringing the care team to the bedside is a step forward," said Swick, who finds that

Figure 7. Projected RN Job Growth by Industry, 2008–2018

■ Office of physicians	48%
■ Home health care services	33%
■ Nursing care facilities	25%
■ Employment services	24%
■ Hospitals, public and private	17%

Source: U.S. Bureau of Labor Statistics, *Occupational Outlook Handbook, 2010–11 Edition,* http://www.bls.gov/oco/ocos083.htm

the model improves safety, communication, and interactions with patients and their families.

Advances in Simulation Technology

As Chambers and Dev previously asserted, students learn more from simulation technology when they are emotionally invested in the simulations. However, manikins, while technically impressive, are not very realistic. To counteract this problem, Chambers's company has partnered with Hollywood special effects experts to give manikins the appearance of such disorders as cleft palates and other birth defects.

Using Lean Principles to Make Healthcare More Efficient

Some healthcare organizations are now using "lean" principles developed by the manufacturing sector to make healthcare l ess wasteful and more cost-effective. "Lean is a management system that analyzes all processes step-by-step to reduce costs, eliminate waste, and increase value," said Swick, whose organization, Inova, is using lean consultants. "With the consultants' help, we've reduced our turnover time for discharging patients from 250 to 129 minutes system-wide," she said.

Kristy Chambers speaks with an audience member.

Conclusion

The nursing profession faces many challenges, but, as the panelists and their organizations proved, innovative solutions are being proposed and implemented. Perhaps one of the most salient threads of the panel discussion was the need to make nurses' voices heard. Nurses, who are on the front line of healthcare and who are often patients' most fervent advocates, possess a wealth of lived experience that they have not always been asked to share. But when nurses step in to craft strategies for the implementation of technology, ensure that their profession is valued and recognized,

> *"What we've done today is bring to the surface conversations that are taking place all over the country."* — Bill Pepicello

streamline processes and workflow, educate their patients and each other, lead their colleagues, or advocate for better healthcare on a national level, many roadblocks can be overcome.

As Bill Pepicello remarked in his closing comments, "What we've done today is bring to the surface conversations that are taking place all over the country." He urged the event's attendees, who represented a broad range of nursing professionals from across the nation, to continue the discussion the panelists launched, and to use their shared wisdom to create solutions for tomorrow.

Bill Pepicello addresses the audience.

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