Experts predict that the supply of registered nurses (RNs) will increase slowly through 2007, plateau, and then decline as more and more RNs begin retiring each year (see Figure 1 below). The demand for nurses will, however, accelerate through 2020, creating an ever larger gap between supply and demand: approximately 150,000 in 2005, 275,000 in 2010, 507,000 in 2015, and 808,000 in 2020.

Experts also agree that Congress and the states must act quickly to avert the crisis in patient care and safety that such gaps would produce. Increasing the capacity to educate more RNs is a major priority, but other steps are needed. This inaugural issue of Charting Nursing’s Future offers concrete examples of partnerships that are already getting positive results.
Shortages and Partnerships at the State Level

America faces an impending health care crisis that poses a direct threat to patient safety and quality of care. By 2011, large numbers of baby boomers will begin to reach age 65. Since those over 65 consume as much as four times the health care as those under 65, demand for health care will be extraordinarily high just as huge numbers of our approximately 2 million FTE registered nurses—the most experienced ones—are beginning to retire without enough new entrants to the nursing workforce to replace them.

If present replacement rates persist, “by 2020 there will be approximately the same number of working registered nurses as there are today though demand will soon accelerate,” says Peter Buerhaus, RN, PhD, Valere Potter Professor and senior associate dean for research at the Vanderbilt University School of Nursing.

Indeed, many states already report significant shortages, and experts agree that our country may lack as many as 808,000 nurses by 2020. Forecasts suggest that only 14 states will meet demand for nurses in 2005, and only 5 states will meet demand in 2020 (see Figure 2 below).

The main reasons for the shortages are undisputed: relatively small high school graduating classes in the 1980s and 1990s, as compared with those in the 1960s and 1970s; expanding career options for women; inadequate numbers of nursing faculty; stressful and poorly designed workplaces that cause injury and high nurse turnover; dysfunctional institutional cultures that make nurses feel undervalued; wage competition from more lucrative professions; gross underrepresentation of men and people of color in the nursing workforce; and inadequate workforce planning and investment by federal and state governments, as well as the health care industry.

Yet there are glimmers of hope. Some states have forged working partnerships among governments, nurse employers, and schools to address these barriers. The National Conference of State Legislatures (NCSL) has convened representatives from five states hard hit by the crisis—Georgia, Texas, California, Utah, and Indiana—to share promising partnership models at a conference organized by Tim Henderson, former program director of NCSL’s Center for Primary Care and Workforce Analysis.

The following pages highlight ten partnerships, together with perspectives on the shortage from policy leaders and other experts. These partnerships demonstrate collaborative ways to expand the supply of nurse educators and to recruit and graduate more nursing students. A feature article on Transforming Care at the Bedside (TCAB), a joint initiative of The Robert Wood Johnson Foundation and the Institute for Healthcare Improvement (IHI), illustrates the importance of addressing work environment problems and promoting innovations in hospital workplace redesign. The concluding section offers the beginnings of a broader agenda for change.

1. NCSL collaborated with and received major support for the conference (held in San Diego, California, on September 26–27, 2003) from the National Center for Health Workforce Analysis, Bureau of Health Professions, U.S. Health Resources and Services Administration (HRSA), The California Healthcare Foundation and Kaiser Permanente also provided significant funding.
Partnerships to Expand Educational Capacity

Biggest Challenges
One of the bright spots in the current shortage picture is the upturn in nursing school applications in all regions of the country. Fall 2003 enrollments in baccalaureate programs alone were up 16.6 percent over 2002 figures, according to the American Association of Colleges of Nursing (AACN). Yet a lack of faculty, clinical sites, and classroom space forces many schools to reject large numbers of qualified applicants (see Figure 3, p. 4). More than 30,000 qualified applicants to RN programs of all kinds were turned away in 2003, according to the National League for Nursing.

The dearth of nursing school faculty is the most pressing shortage issue in nursing education. The median age of full-time faculty in the five states and the nation is now in the low fifties, and the number of graduates from master’s and doctoral programs continued to decline in 2003. Master’s-prepared nurses are not seeking teaching positions in significant numbers largely because faculty salaries are not competitive with clinical salaries. Finally, state budget deficits are seriously constraining faculty hiring.

Partnership Strategies
Partnerships in the five states are expanding capacity by: (1) creating fast-track programs to train master’s-prepared nurses for teaching; (2) using special state and federal funding mechanisms to hire faculty; and (3) encouraging employers to fund or loan critical educational resources.

“Nursing shortage problems are beyond the control of any one institution, so partnerships are the only way we will arrive at solutions.”

Marla Salmon, ScD, RN, FAAN, professor and dean, Nell Hodgson Woodruff School of Nursing, and professor, Rollins School of Public Health, Emory University, and Robert Wood Johnson Foundation trustee.

Emory “Fast-Tracks” Master’s-Prepared Nurses for Faculty Careers
“We wanted to attract expert nurse-clinicians to become faculty in a short time,” says Marla Salmon, RN, ScD, FAAN, Emory’s dean of nursing. “We also wanted to address the problem of clinicians leaving nursing.”

Because Emory is a private institution, it had great flexibility, says Salmon, to move quickly to meet these goals through the Summer Nursing Teaching Institute Certification Program, which blends 12 days of classes at Emory, a month and a half of cyber-sessions, and a four-month mentored teaching experience at an approved educational institution of the student’s choice. Six of the 11 students in Fast Track’s first graduating class (December 2003) are also receiving service-cancelable loans from Georgia’s new Nursing Faculty Scholarship Program (see p. 5).

“We’ve turned out clinicians able to teach, launched a model, and hired some of our own graduates,” says Salmon.

For More Information
• Contact: Helen O’Shea, RN, PhD
(404) 727-7967
• Visit: www.nursing.emory.edu
(select “Academic Programs” followed by “Post Master’s Program”)

ICAPP Initiative Increases Both Nursing Faculty and Students
Facing a 50 percent drop in nursing school enrollments (1993–2001) and a 38 percent vacancy rate in nursing jobs, Georgia officials used the state’s Intellectual Capital Partnership Program monies to expand ten nursing education programs through competitive grants to school-employer collaborations ($2.1 million in 2002).

Approximately 75 percent of the original funding was used to hire new tenure track faculty and extend the contracts of some existing faculty. The balance paid for distance learning programs, technology, human simulators, and tuition remission. Employers contributed $2.45 million as well as clinical sites and classrooms. These investments are expected to produce at least 500 new nurses, all of whom will be offered jobs in Georgia health care facilities.

“ICAPP’s success is largely attributable to its ‘market structure’ which includes a competitive application process, a requirement for corporate sponsorship, seed funding, and production percentages,” says Valerie Hepburn, MPA, former director of the state’s Division of Health Planning, now a faculty member at the Institute of Public Health at Georgia State University. “States should encourage employers to put up money by first putting public funding on the table.”

For More Information
• Visit: www.icapp.org

*Key Term: WIA
The federal Workforce Investment Act allocates Department of Labor funds to the states through state-based workforce investment boards that often have multiple offices within states and regional affiliates. Boards must ensure a supply of workers to critical industries such as health care and often act as intermediaries between employers, educators, and students.
Partnerships to Expand Educational Capacity, continued

TEXAS PARTNERSHIP
• The Texas State Legislature
• 45 nursing programs
• many advocacy organizations

Special State Funds Strengthen Nursing Education
Faced with data showing that 3,000 qualified applicants were turned away from nursing programs because of faculty shortages in 1998 and 1999, the Texas State Legislature reapportioned $22 million of its “Dramatic Growth Funds” and reallocated $4 million in income from a tobacco lawsuit settlement to bolster the state’s nursing education infrastructure.

Primarily because of the state’s economic downturn, only $11 million of the Dramatic Growth Funds were actually given to 45 of the state’s 91 public nursing schools in the 2002–2003 biennium, while three-quarters of the settlement funds had been spent as of 2003. The appropriations resulted in a 19 percent enrollment growth in nursing programs.

At Texas Woman’s University, for example, both funding mechanisms have been used to hire six additional faculty and two admissions coordinators, increase compensation for some faculty, purchase simulators, and provide resources to students. “It was helpful,” says Carolyn Gunning, BSN, PhD, professor and dean emeritus, “but it doesn’t provide a long-term solution because the funding isn’t permanent.”

For More Information

CALIFORNIA PARTNERSHIP
• Sacramento Community College
• Sutter Corporation

Employer’s Contributions Boost College’s Teaching Resources
The Sutter Corporation, a health care delivery system, has given Sacramento City College (SCC) $4.5 million as an endowment to equip a teaching area in an insurance building with 20 thousand square feet of vacant space. The facility has been outfitted with a learning laboratory, electronically smart classrooms, an auditorium, bookstore, a staff development program, and four stations simulating ICU units. Sutter also supplies clinicians as adjunct lab teachers and provides student services that include a loan program, counseling, and assessment.

For its part, Sacramento Community College has agreed to quadruple the size of its program. As the project moves ahead successfully, Sutter will provide more money for a total of $13.5 million,” says Jim Comins, associate vice president of Workforce and Economic Development at the college. A venture of this type and magnitude is not without challenges, Comins notes: “As roadblocks have arisen the SCC/Sutter team has formulated mutually satisfactory solutions to keep the project on track.”

For More Information
• Contact: Diane Welch, director of nursing, Sacramento Community College (916)-558-2271.

TEXAS PARTNERSHIP
• Greater Houston Partnership
• The WorkSource (a WIA workforce board)
• 13 schools of nursing and 19 hospitals

Hospitals Loan RNs for Academic Roles
With 20 percent more students than faculty to teach them in the greater Houston area, the local WIA board and a partnership of hospitals and nursing schools decided to loan some 65 nurse clinicians to teach in 13 academic programs (2001–2002). The initiative immediately allowed for an increase of 163 nursing students.

The program continues with largely positive evaluations by participating hospitals and schools. “It has stimulated collaboration, fed conversations about curriculum, and helped hospitals recruit good nursing graduates,” says Karen Love, MHA, CMPE, who staffs the steering committee coordinating the initiative, “but it will require public funding to ensure long-term sustainability.”

For More Information
• E-mail: karen.love@theworksource.org.

Figure 3
Percent of Qualified Applicants Turned Away from Nursing Schools in Five Shortage States (2002)

<table>
<thead>
<tr>
<th>STATE</th>
<th>LPN (Licensed Practical Nurse)</th>
<th>ADN (Associate Degree in Nursing)</th>
<th>BSN (Bachelor’s Degree in Nursing)</th>
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Source: Developed by National Conference of State Legislatures (NCSL), for a webinar on nursing, education, and funding; for degree programs and by the National League for Nursing.

“If an employer can say, ‘I’ve got 50 nursing jobs,’ it makes sense for legislatures to invest in nursing schools’ expanding their capacity and turning out nurses to fill those jobs. It’s an extremely attractive prospect.”

Texas State Senator Kyle Janek, MD (R-District 17)

Qualified applicants are being turned away because of lack of training capacity in both the five states and the nation. More than 30,000 qualified applicants across all RN programs were turned away nationally in 2003, according to the National League for Nursing.
Biggest Challenges

Though nursing school enrollments increased in all regions of the country in 2003, these increases have not yet fully arrested a precipitous decline in RN graduates that began in 1995 (see Figure 4). Reversing these trends will not simply be a matter of time. Many public institutions—where the vast majority of nurses are trained—lack adequate numbers of nursing faculty and report a variety of barriers to recruiting and retaining students: rising tuition, slim scholarship funds, increasing attrition, failing National Council Licensure Examination (NCLEX) pass rates among non-BSN candidates, and inadequate math and science preparation.

Partnership Strategies

To encourage recruitment and retention, the five states are using: (1) comprehensive K–12 career orientation programs; (2) scholarships and service cancelable loans; (3) accelerated nursing programs; and (4) Web-based nursing curricula.

UTAH PARTNERSHIP

- Intermountain Health Care
- Utah Board of Education
- 40 school districts and many teachers
- Area Health Education Centers (AHECs)

Utah Oriented K–12 Students to the Health Care Professions

Intermountain Health Care, a non-profit health care system operating in Utah and Idaho, is working with its partners to develop resources to infuse health care career information into K–12 curricula.

Primary students practice basic math by, for example, counting tongue depressors and sutures. Middle school programs add tours and field trips with the help of AHEC representatives who supply schools with speakers and sites. To ensure consistency, the partnership offers speakers CDs with uniform messages about the value of health careers.

High school students have opportunities to shadow health professionals and, through concurrent enrollment arrangements with higher education, become licensed as emergency medical technicians and certified nursing assistants.

Because Utah’s secondary schools have adopted national consortium health care standards for course work in health science curricula, students do not lose time if they transfer to another school within the system. Similar standard setting for nursing and medicine is now in the works at Utah colleges and universities. “In primary and secondary school, we are exposing students to the look and feel of careers; in higher education, the goal is to build commonality into curricula at the lowest level so students who change health careers or schools don’t have to start over,” says Paul Jackson, MPA, assistant vice president for human resources, Intermountain Health Care.

GEORGIA PARTNERSHIP

- Georgia Department of Labor ($1.6 million)
- Robert W. Woodruff Foundation ($500,000)
- The Georgia Student Finance Commission

Student Scholarship Program Aims to Increase Nursing Faculty

Some 160 RNs in Georgia will now receive scholarship aid to secure the credentials necessary to gain faculty positions in the state’s public and private nursing programs. Candidates for the Georgia Nursing Faculty Scholarship Program may borrow up to $10,000 to fund master’s or doctoral degrees in nursing at any of Georgia’s nursing schools. In return for this support, students agree to teach nursing in any of the state’s postsecondary nursing programs. Loans are forgiven at the rate of $2,500 per year of teaching. Begun in 2003, the program is slated to end after four years.

For More Information

• Contact: The Georgia Student Finance Commission by visiting www.gsfc.org

“We can’t just add more faculty and deliver education as we have in the past; nurse employers and nurse educators need to have crucial conversations about innovation in nursing education curriculum. We must ask whether we have really moved the Internet, multimedia, simulations, informatics, quality improvement, and human factors training into nurse’s education while at the same time maintaining the personal contact dimension of education.”

Marilyn Chow, RN, DNSc, FAAN, vice president, patient care services, Kaiser Permanente, and national program director for The Robert Wood Johnson Foundation Executive Nurse Fellows Program.

For More Information

• Email: Paul Jackson, paul.b.jackson@ihc.com

Partnerships to Recruit, Retain, and Graduate More Nursing Students, continued

**CALIFORNIA PARTNERSHIP**
- The San Diego/Imperial Regional Health Occupation Resource Center (RHORC)
- The California Endowment ($7 million)
- Sharp Healthcare ($325,000 and sites)
- Grossmont College ($295,935 HRSA grant)
- HRSA Nursing Workforce Diversity Program
- Three Welcome Back Centers

**“Welcome Back” Credentials Residents with Foreign Degrees**
The San Diego/Imperial RHORC—one of California’s nine federally funded state-administered collaboration facilitation services—has fostered a unique partnership to capture the talents, diversity, and training of health care professionals living in California but unable to work in their fields because of credentialing barriers.

The 14-month associate degree program in nursing is open to persons with MDs and eight other health-related degrees. Students enter the program through the San Diego Welcome Back Center where they receive career assessment, counseling, and access to revalidation of their international credentials (often to the BS level). Grossmont College provides the academic instruction.

Welcome Back graduated its first class of 35 in 2004 and is now selecting a second for 2005. If NCLEX exam pass rates are favorable, state authorities may allow replication in other community colleges.

For applicants who do not immediately qualify for the accelerated RN program, there is the Nursing Career Ladder Program, which includes linked Certified Nurse Assistant, Licensed Vocational Nurse (LVN), and LVN-to-RN tracks plus special English and bilingual NCLEX prep courses.

Extraordinary diversity is a major benefit of the program, says Rolando Castillo, PhD, director of San Diego’s Welcome Back Program. “We have graduates from 14 countries and four continents—Africa, Asia, Latin America, and Europe—and 50 percent of our students are male.”

For More Information
- E-mail: rolando.castillo@gcccd.net
- Visit: www.welcomeback.org

**TEXAS PARTNERSHIP**
- Texas A&M University—Corpus Christi
- Projected regional school partners
- The Robert Wood Johnson Foundation

**Web-based Curriculum Promises to Increase Student Access**
Texas A&M—Corpus Christi has unveiled a Web-based nursing “school” called “eLine”—Electronic Learning in Nursing Education (2003). The program has 106 discrete modules covering both didactic and clinical elements through which students can earn both associate and BSN degrees (some additional clinical work with a preceptor is required).

The curriculum allows students to enter the online school at any time and proceed at their own pace. “A soldier in Iraq with only a high-speed Internet connection could work on this curriculum while on active duty,” says Claudia Johnston, PhD, associate vice president for academic affairs at A&M–CC, and former Robert Wood Johnson Foundation nurse fellow.

Johnston also sees the modular construction of the curriculum’s delivery system as one antidote to the nursing faculty shortage because each module is so small and discrete that it can be handled by one faculty member in a traditional academic setting, someone in retirement or working part-time, or by an administrator with nursing credentials. While some nursing educators have found that younger students don’t perform well with Web-based programs, Johnston remains upbeat. “In the near future, Web-based programming will be widely accepted and used successfully by students of all ages.”

For More Information
- E-mail: Claudia Johnston, johnston@falcon.tamucc.edu
- E-mail: Bill Rupp, MD, president and CEO, Immanuel St. Joseph’s Mayo Health System

“People want to provide information that allows for the best possible care for patients. The flexibility of the curriculum allows for this fulfillment.”

For More Information
- E-mail: Peter Buerhaus

**The Value of Nursing**
This wound care nurse is cleaning the surgical wound of a diabetic patient. In order to retain older nurses with highly specialized skills and experience, employers will have to make major, systemic changes in the nursing work environment, say experts.

“For More Information”
- Projected regional school partners
- The Robert Wood Johnson Foundation
- The San Diego/Imperial Regional Health Occupation Resource Center (RHORC)
- Texas A&M University—Corpus Christi
- Grossmont College ($295,935 HRSA grant)
- HRSA Nursing Workforce Diversity Program
- Three Welcome Back Centers

**Figure 5**
Age Groups as Percentage of Total Full-Time RN Workforce 1980–2020 (projected)

“The future RN workforce will be older, wiser, and the most experienced in history, but less able physically to meet rising demand because of stress, poor workplace ergonomics and other environmental factors,” says Peter Buerhaus, PhD, RN, FAAN, Valere Potter Professor of Research, Vanderbilt University School of Nursing.
Partnerships to Transform the Nursing Work Environment

The Robert Wood Johnson Foundation and the Institute for Healthcare Improvement Launch Transforming Care at the Bedside (TCAB)

A commitment to quality of care sparked The Robert Wood Johnson Foundation’s (RWJF) staff and leadership to become interested in the hospital nursing shortage.

“Nurses are central to achieving quality,” says Foundation president Risa Lavizzo-Mourey, MD. “Not only are they the professionals closest to the bedside, 24/7, and in the best position to prevent or avert errors, but they also are the professionals trained in the philosophy and techniques of providing comfort—the aspects of care that promote healing, which sheer application of technology can never do.”

Merely increasing the supply of nurses won’t solve the shortage because too many nurses—in some hospitals between 20 and 50 percent—leave within just a few years.\(^2\)

As a result, the country now has more hospital nurses age 50 and over than 35 and younger—the prime working years, according to Vanderbilt’s Peter Buerhaus (see Figure 5, p. 6)

“The data on the high turnover rate clearly told us that something is wrong—probably many things—in the hospital work environment,” says RWJF’s nursing team leader, Susan Hassmiller, RN, PhD, FAAN. “That’s what we have set out to address.”

The Foundation’s nursing team starts from the premise that a hospital must be healthy in three dimensions:

- physical space (e.g., architecture, noise control)
- work processes and policies
- organizational culture

All three are essential, though culture—the tone and expectations set by management, its receptivity to innovation, the respect it gives workers of all disciplines—comes first.\(^3\)

The next step is to use the hospital work environment to strengthen both retention and quality, and the Foundation is starting to make grants in these areas. For example,

- In June 2004, the Foundation’s TCAB program entered a two-year pilot phase involving 13 hospitals nationwide. This initiative focuses on improving the way medical-surgical units organize and perform their work.
- TCAB, overseen by the Institute for Healthcare Improvement,\(^4\) will emphasize four themes: safety/reliability, lean operations, staff vitality, and patient-centeredness. Each TCAB hospital is developing a relationship with a nursing school to ensure that nursing graduates are prepared for the work environments they will enter and that work environments are prepared for them.
- RWJF has supported a project to synthesize current information about architecture, design, and healing environments, to be disseminated starting in June 2004.
- Hospital teams will begin learning more about how to improve corporate cultures in 2005.

In early 2005, RWJF’s website will start to include more information about this work: [www.rwjf.org](http://www.rwjf.org). Information on TCAB is currently available in the medical-surgical area of qualityhealthcare.org.

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2. For more on nursing research funded by The Robert Wood Johnson Foundation, visit: [www.rwjf.org](http://www.rwjf.org) (select “Nursing” then “Publications,” followed by Health Care’s Human Crisis: The American Nursing Shortage).

3. The American Nurses Credentialing Center’s magnet hospital recognition program has pioneered a careful assessment of hospital culture. TCAB will be synergistic with that initiative.

4. For more information on the Institute for Healthcare Improvement (IHI), visit [www.ihi.org](http://www.ihi.org).

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“The current generation of younger workers will have more options than we did at their age, and they aren’t going to put up with excessive workloads and bad hours; they will also want to feel like real stakeholders in the success of their organizations.”

Peggy Welch, RN, Indiana State Representative (D-District 60)
Conference participants and other experts in the field maintain that while partnerships between sectors are indispensable, individual sectors have unique responsibilities in resolving the shortage.

**Federal Government**
- Offer more substantial and sustained funding for nursing education and study capacity constraints.
- Help states build better nursing workforce data infrastructures.
- Ban mandatory overtime and review and change reimbursement formulas to ensure that health care facilities can hire enough nurses and do quality improvement.
- Study mid-career training as a possible recruiting incentive for men.

**State Governments**
- Offer more substantial and sustained support for nursing education.
- Improve nursing workforce data collection and planning.
- Convene and educate all partners necessary for reform.
- Empower health care facilities to make needed environment changes.
- Better integrate nursing education provided by community colleges and universities.

**Employers**
- Develop reasonable nursing work rules to ensure nurse retention and patient safety, and develop adequate pension programs for nurses.
- Carry out systemic work environment changes to increase patient safety and nurse retention.
- Help fund nursing education programs and offer more clinical sites for training purposes.
- Collaborate with nursing profession leaders on new curricula and service delivery models.
- Help new graduates negotiate the workplace successfully.

**Nursing Field**
- Work with employers to develop new education curricula and service models.
- Develop a coherent policy agenda and compelling messages for the public and policymakers.
- Advocate more effectively for increased funding of nursing education.
- Stimulate public demand for more attention and resources to address the shortage.

**Toward an Agenda for Change**

“In 1974, during the last serious nursing shortage, federal funding for nurse education programs was $153 million—$533 million in today’s dollars or almost three times what we are spending now. The federal government needs to do more.”

Congresswoman Lois Capps (D–CA)

“States can’t say, ‘We’ve paid attention for one year and solved the problem.’ It’s a long-term problem and getting worse.”

Valerie Hepburn, MPA, former director of the Division of Health Planning, Georgia State Department of Community Health, now associate director of the Institute of Public Health, Georgia State University

“Many employer human resources policies date back to the 1960s, offering inadequate pension systems for nurses and sanctioning mandatory overtime; 85 percent of nurses work beyond their scheduled shifts. Policies need to be revised to introduce reasonable work rules linked to patient safety.”

Linda Aiken, RN, PhD, FAAN, FRCN, Claire M. Fagin Leadership Professor in Nursing and director of the Center for Health Outcomes and Policy Research, University of Pennsylvania

“The nursing profession has a communications problem: its advocacy messages must focus on the consequences to patients if government doesn’t invest more.”

Utah State Representative Patricia Jones (D–District 40)

**The Value of Nursing**

Triage nurses, like the one pictured here, are the gatekeepers for ER services, assessing the severity of injuries, prioritizing access, and coordinating care. Males make up only 8 percent of the nursing workforce nationwide.

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