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Issue Brief

The Nursing Workforce Shortage: Causes, Consequences, Proposed Solutions

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Introduction

Registered nurses (RNs) are the single largest group of health care professionals in the United States. Current and projected nursing shortages reflect the fact that fewer people are entering the profession. Shortages are difficult to estimate and project. In the past, shortages have tended to be resolved as wages rose in response to increased need for RNs. In addition, there is a cyclical aspect to shortages, as RNs are more likely to work when the economy is doing less well.[1] Projected shortages differ from past circumstances in that, by 2020, a decline in the number of available nurses will coincide with an increased need for nursing services due to aging of the baby boom generation. These changes suggest that it will be more difficult, and more costly, to respond to the future shortage.

The nursing profession involves three types of workers: registered nurses, licensed practical nurses, and nurse aides.[2] Registered nurses provide direct patient care and also manage nursing care. They are state-licensed and hold associate degrees (two-year community colleges), diplomas (three-year hospital programs), or baccalaureate degrees (four-year colleges). Licensed Practical Nurses (LPNs) provide patient care under direction of an RN or physician. Also licensed by the state, LPNs must complete 12 to 18 months of training. Nurse aides assist in routine care activities, such as bathing, dressing, and feeding patients. Aides who work in nursing homes or home health agencies that receive Medicare or Medicaid funds are required to complete at least 75 hours of training. Most RNs work in hospitals, while LPNs work primarily in either hospitals or nursing homes. Nurse aides may work in hospitals and home care settings, but most commonly work in nursing homes.

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Nationally, 2.2 million people are employed as RNs.[3] The Bureau of Labor Statistics includes RNs and nursing aides, along with home health aides, among the top 30 occupations with the largest projected increase in numbers of jobs available between 2000 and 2010.[4]

The nursing shortage has profound implications for quality of care. Recent studies find that in hospitals where nurses treat fewer patients at a time, patients have better health outcomes.[5] In addition, the Joint Commission on Accreditation of Healthcare Organizations reports that staffing was a contributing factor in a quarter of adverse events resulting in death or serious injury reported to the Joint Commission since March 2002.[6]

Magnitude of the Shortage

In 2002, the shortage of registered nurses was an estimated 125,000, or 6 percent of full-time equivalent (FTE) RNs.[7] While the present shortage may be resolved if wages increase in response to current need for RNs, long-term projections of RN shortages bear characteristics that present further challenges. Experts expect that the shortage will worsen over time as a result of low expected growth in supply of nurses, combined with increases in demand for nursing care for the over-65 population. Estimates of the shortage of RNs by 2020 range from 400,000 to 808,000 FTE RNs.[8,9] Because of limited growth in new entrants into the profession, the average age of RNs by 2020 will have increased by 2.5 years since 2000 (from 42.4 years to 45.1 years).[10] Nurse educators are also aging, with consequent expected declines in available nursing faculty.[11]

Total graduates from RN programs fell steadily between 1995 and 2000, with an overall decline of 26 percent.[12] The recent 3.7 percent increase in enrollment in nursing schools in 2000–2001 follows six years of decline. Currently, there are 21,000 fewer students in nursing school than there were in 1995.[13] About 82 percent of registered nurses are currently working as RNs. This share has remained relatively constant over the 1990s.

It is difficult to obtain reliable state-level estimates. However, it is clear that current shortages affect some geographic areas more than others, with an estimated 30 states experiencing shortages in 2000.[14] Within hospitals, some evidence suggests that RN shortages are particularly felt in intensive care units and operating rooms, while also affecting labor and delivery and general medical surgical units.[15]

Shortages also affect delivery of long-term care, particularly in nursing homes. While data are limited, experts agree that a shortage of nurse aides in nursing homes is a current concern, and will worsen in future years.[16]

Reasons for the Shortage

Reasons for the shortage are multifaceted, reflecting changes in population demographics, women's employment patterns, the health care system, and nursing work. Together, these changes pose challenges both in recruiting new RNs and retaining existing RNs.

- *Increased demand as a result of population aging.* Projected shortages must be viewed in the context of expected increases in demand for nursing services. Between 2000 and 2020, the population will grow by 18 percent (31 million) overall, but the over-65 population, with more health care needs, will grow by 54 percent (19 million people).[17]

- *Other career options.* The nation has experienced broad changes in social and employment patterns for women. Women born after the 1950s have more career options than their predecessors, and fewer have chosen to enter nursing. Women born in the mid-1950s were more likely to become nurses than those born before or after that time period.[18] Compared with women born in 1955, those born in 1970 were 35 percent less likely to enter nursing, and women born in 1975 were 40 percent less likely.[19]

- *Responses to health care cost pressure.* The growth of managed care in the 1990s created cost pressure, particularly on hospitals, which are the largest employers of RNs. In the early 1990s, areas with higher managed care enrollment had slower wage and employment growth for RNs than areas with lower managed care enrollment. As managed care spread, RN wage and employment growth slowed at the national level by the late 1990s.[20] These changes followed shifts in hospital payment systems designed to reduce spending, leading to shorter lengths of stay in hospitals. As a result, hospital RNs treat patients who are sicker on average, and their work is thus more intensive.[21]

- *Wages.* On average, RN wages merely kept pace with inflation in the 1990s.[22] In contrast,

between 1982 and 1992 inflation-adjusted mean annual RN wages increased by $6,000.[23]

- *Workload and work environment.* In response to health care cost pressure in the 1990s, hospitals reduced staffing and implemented mandatory overtime policies to ensure that RNs would be available to work when the number of patients admitted increased unexpectedly. The workload for RNs increased, and their control over scheduling, which has always involved night and weekend work, decreased.[24] One would expect that RN wages would have increased to compensate for this additional workload, but, as noted above, their wages were flat over this time period, likely due to the more competitive health care environment. An increased workload may affect the decision to enter or remain in the nursing profession. One major study shows that dissatisfaction and burnout are higher among nurses with higher patient loads.[25]

In the 1990s, many hospitals also restructured the organization of nursing services. These changes are perceived to have increased nurses' dissatisfaction and concern regarding quality of patient care.[26] A survey of nurses in Pennsylvania hospitals, conducted in the late 1990s, found that 41 percent were dissatisfied with their jobs, and 43 percent had high burnout.[27] Only one-third responded that there were enough nurses to provide quality care and to get work done. Slightly less than one-third felt that nurses had opportunities for advancement, and that their hospital administration listened and responded to their concerns.

- *Image.* Media attention has focused predominantly on the challenges nurses face, rather than the rewarding aspects of the career. Some observers feel this may further discourage young adults from choosing to enter nursing.
- *Reasons for nurse aide shortages.* The primary focus in nursing workforce policy is on RNs. Reasons for present and predicted increases in shortages of nurse aides reflect related, though distinct, challenges. Nurse aides, particularly those who work in nursing homes, receive low pay, are unlikely to receive benefits, work in challenging conditions with high rates of workplace injury, and have high turnover rates.[28] In addition, nurse aides have limited possibilities for career advancement.

Nurse aides working in nursing homes are more likely than workers overall to have family income below the federal poverty level and more likely to receive Medicaid and food stamps.[29] To some extent, availability of nurse aides fluctuates with the economy, with a greater supply when unemployment rates are higher. Longer-term shortages are expected to become more pressing with an increased demand for nursing home services as the population ages.

Nurse Staffing and Quality of Care

Several recent studies document a significant association between nurse staffing levels and quality of patient care in hospitals and nursing homes. These studies are particularly important because they fill a gap in knowledge, documented in a 1996 Institute of Medicine report, regarding the relationship between nurse staffing levels and patient outcomes. Specifically, the report noted the need for research on effects of nurse staffing levels that accounts for other factors that affect health outcomes, such as hospital characteristics and differences in patient severity (case mix).[30]

One recent study found that an increased number of hours of RN care per day for each patient is associated with improved outcomes, including shorter lengths of stay and lower rates of urinary tract infections, upper gastrointestinal bleeding, pneumonia, shock or cardiac arrest, and death from complications (termed "failure to rescue") such as pneumonia or shock.[31] The study, conducted under contract with the Health Resources and Services Administration in the Department of Health and Human Services (DHHS), is notable for including many outcome measures and a large number of hospitals and states (799 hospitals in 11 states), and for using rigorous methods to account for differences in patient and hospital characteristics.

A study published in October 2002 found that an increase of each additional patient per nurse (within a range of four to eight patients) was associated with a 7 percent increase in the odds of dying within 30 days of admission and a 7 percent increase in the odds of death following complications such as shock or pneumonia.[32] The study was funded by the National Institute of Nursing Research in the National Institutes of Health. This study of Pennsylvania hospitals adjusts patient outcomes for differences in severity and accounts for hospital characteristics including hospital size, teaching status, and availability of technology.

In nursing homes, analyses conducted under contract to the Centers for Medicare and Medicaid Services have found an association between staffing levels and quality of care.[33] Although these reports identify minimum staffing levels below which quality of care suffers, DHHS determined that these studies could not be used to develop staffing standards for nursing homes. Instead, they cited the need for further research that uses improved staffing data, addresses the role of factors other than staffing in quality of care, and recognizes limitations in availability of nursing workforce to meet minimum standards.[34]

Strategies for Addressing the Nursing Shortage

Recruiting the Future Workforce

Many experts recognize the need to increase funding for nursing education, directed toward nursing faculty as well as students.[35] Subsidized training is seen as one way to increase the number of RNs. In addition, experts point to a need for changes in RN training to better prepare the existing workforce to respond to changes in health care delivery. As options to strengthen nursing care, experts suggest training in gerontology, technology and information systems, clinical management, and variations in care delivery, as well as opportunities for further training for RNs at all stages in their careers.[36, 37]

Another way to address the nursing shortage would be to devote resources toward increasing RN wages. This approach could affect recruitment as well as retention of RNs already in the workforce.

Increasing the number of minorities who become RNs could increase supply of RNs and have the additional benefit of improving delivery of culturally sensitive care.[38] Data suggest that minority RNs are more likely to work full time than other RNs. Racial and ethnic minorities are underrepresented among RNs relative to their share of the U.S. population.[39]

Hiring foreign nurses would be another way to address shortages in the United States. Proponents of this approach note that hospitals have relied on foreign nurses, often brought to the United States with temporary work visas, to address past shortages.[40] In 1989, 24,400 foreign nurses worked in the United States under temporary visas, with 70 percent residing in New York, New Jersey, or California. Over 70 percent of foreign RNs were from the Philippines.[41] Hiring foreign RNs is somewhat controversial. This strategy may divert needed talent from other countries and potentially exacerbate their nursing shortages, and may raise concerns in the United States about effects on wages, adequacy of training, and quality of care.[42] For example, the presence of foreign RNs will quite likely depress RN wage growth, which may lead to dissatisfaction among RNs. On the other hand, there may be benefits to the general public if slower wage growth translates to slower growth in health care costs.

Experts also suggest a need to improve the image of nursing. Strategies range from encouraging nurses to communicate more frequently with the press about positive aspects of nursing to launching professional advertising campaigns promoting the profession.[43]

Retaining RNs in the Workforce

Strategies to improve RN retention are needed. Policies that improve a hospital's work environment are one set of important considerations. The American Nursing Credentialing Center singles out hospitals that it determines have such policies and successfully recruit and retain RNs, designating these "magnet" facilities.[44] Other attributes of magnet hospitals include a low turnover among nurses, high nurse-to-patient ratios, and a range of policies that promote nursing autonomy and leadership.[45] Another aspect of improving the work environment involves reorganizing nursing care to reduce paperwork and alter the types of work performed by RNs in order to increase the proportion of RN time spent on patient care.[46] Policies that rebuild nursing leadership roles, which became limited following hospital restructuring in the 1990s, are important.[47] Equipment to reduce likelihood of injury, such as safe needle devices and patient-lifting devices, is a key consideration.[48] Redesigning the workplace in accord with ergonomic standards may become increasingly important to prevent injuries as the average age of the RN workforce increases.[49]

Involving RNs in designing staffing and overtime policies also may result in higher satisfaction among RNs and better patient care. Unions representing RNs promote policies that reduce nurse workloads by increasing staffing to legislatively mandated nurse-to-patient ratios.[50] Not all RNs or health professionals agree that mandated ratios are the most effective approach. Some suggest that RN staff-per-patient levels are best determined collaboratively with RNs at the hospital level.[51]

Quality of Care

Since 2000, when the Institute of Medicine published its report, *To Err Is Human: Building a Safer Health System*, the public and policymakers have focused greater attention on quality of care and preventable errors. Funding for further research on quality of care and hospital nurse staffing will inform policies specific to the nurse workforce, and may identify possible systems-level changes that will contribute to broader quality of care improvement.[52] Improved data on nurse staffing and patient outcomes will be important to make further progress in understanding how nursing care affects quality of care.[53]

Recent Federal, State, and Private Actions

Congressional Actions

On August 2, 2002, President Bush signed into law the Nurse Reinvestment Act (P.L. 107-205), which focuses on nurse recruitment and retention policies.[54] This law builds on existing nurse workforce programs enacted as part of Title VIII of the Public Health Service Act in response to prior nursing shortages. Title I of the new law focuses on nurse recruitment policies, including: DHHS-sponsored public service announcements about the profession, expanded eligibility for the nursing loan repayment program to all facilities with a critical shortage of nurses (and nonprofit facilities only after FY 2007), and scholarships in exchange for at least two years of service at facilities with critical shortages. Title II focuses on nurse retention, authorizing the secretary of DHHS to approve grants or contracts to nursing schools or health care facilities to improve nursing education and practice, for geriatric care programs, and for student loan funds to increase qualified nursing faculty. The law authorizes funding for these programs for fiscal years 2003 through 2007.[55] No funds were appropriated during the 107th Congress.

Executive Branch Actions

Located within the Department of Health and Human Services, the Health Resources and Services Administration, Bureau of Health Professions administers nurse education and practice grant programs, as well as scholarship, loan, and loan repayment programs.[56] In June 2002, DHHS announced $22 million in grants for advanced education and geriatrics training, and $8 million for loan repayment for nurses who work in designated shortage areas.[57] In September 2002, DHHS announced an additional $8.4 million in grants for nurse education and practice and nursing workforce diversity.[58]

The president's FY 2003 budget includes $99 million for Bureau of Health Professions grants to address the shortage.[59] In addition, the budget includes $130.8 million for the National Institute of Nursing Research in the National Institutes of Health for nursing research.[60]

State Actions

States also are responding to nursing shortages. In 1999, in response to union pressure, California enacted legislation requiring hospitals to meet minimum staffing ratios to be developed by the California Department of Health Services. Staffing ratios have been developed, and are expected to be implemented in July 2003. One recent analysis estimates that direct costs of implementing the legislation will be low on average because most hospitals currently meet the ratios, but will vary across areas of the state. It suggests that there may be other indirect opportunity costs that are harder to measure.[61] In addition, some experts raise concerns that minimum staffing ratios will exacerbate the need for additional RNs.

The California minimum staffing law is controversial within the state and nationally. The California Nurses Association has withdrawn from the American Nurses Association and, along with nurse associations in Massachusetts, Maine, Missouri, and Pennsylvania, is forming a new national organization entitled the American Association of Registered Nurses.[62] The new organization is a proponent of legislation similar to California's in other states, while the American Nurses Association is not actively supporting such legislation.[63]

In 2002, a number of states enacted legislation to address nursing shortages. Fourteen states enacted legislation to provide funds to support nursing education scholarship and repayment programs.[64] Twelve states enacted legislation to create a nursing workforce commission, center, or study, and seven states enacted other legislation to promote nursing recruitment and retention.[65] Six states passed laws banning or limiting mandatory overtime, except in emergencies.[66]

Private Actions

The Joint Commission on Accreditation of Healthcare Organizations, a private nonprofit organization that accredits hospitals and other health care organizations, has developed standards for hospitals and other organizations to monitor data to assess staffing effectiveness.[67]

Johnson & Johnson initiated a $20 million effort at nursing recruitment in 2002 including advertisements, outreach to high schools, scholarships, and a website about nursing opportunities.[68] Since 1996, the Robert Wood Johnson Foundation has funded approximately $7 million in grants to 20 sites through its Colleagues in Caring program, which supports regional nursing workforce development programs.[69]

Conclusion

Even absent nurse shortages, it would be costly for hospitals and long-term care providers to increase nurse staffing. Yet, recent evidence suggests that more nurses lead to better patient outcomes. Projected long-term shortages will create still greater cost and quality challenges. Without increased payments from public or private purchasers, health care institutions will most likely have to make tradeoffs between investing in staffing and pursuing other quality-improvement efforts. Little information is available to inform such decisions, which are likely to become more pressing in future years.

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