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PROGRAM AND POLICY IMPLICATIONS

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Aging and the Health Care Workforce

Trends in aging in the United States are expected to increase demand for health care services and for health care workers. By 2030, the share of the population ages 65 and older will increase dramatically from 13 percent to 19 percent (U.S. Census Bureau 2010). Because people typically demand more health care services later in life (see figure), the demand for health care workers will likely grow faster than in the past (CHWS 2005; IOM 2008). Additionally, an aging population will result in many health workers retiring during the next 20 years (CHWS 2005). Given that 26 percent of U.S. physicians and almost 6 percent of U.S. nurses are foreign trained (and the majority are also foreign-born), the effects of population aging on the health care workforce will be both domestic and global (AMA 2010; HRSA 2010).

The Division of Behavioral and Social Research at the National Institute on Aging (NIA) has supported the analysis of health care workforce issues. This newsletter discusses NIA-sponsored and other research related to health services staffing needs and to changes in the composition of the health care workforce, and highlights how trends in the United States may affect delivery of health services in developing countries.

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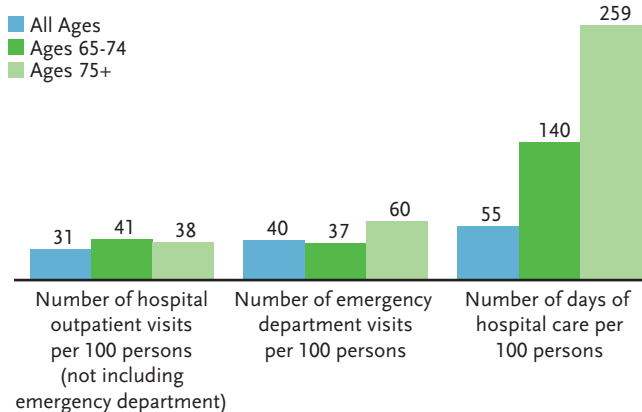
This review summarizes research related to the objectives of the National Institute on Aging, with emphasis on work conducted at the NIA demography centers. Our objective is to provide decisionmakers in government, business, and nongovernmental organizations with up-to-date scientific evidence relevant to policy debates and program design. These newsletters can be accessed at www.prb.org/TodaysResearch.aspx.

Primary Care Physicians

Geriatrics—the branch of medicine concerned with health problems specific to aging and with the treatment, diagnosis, and prevention of disease in older persons—is largely a subspecialty of internal medicine and general/family practice medicine, the two specialties from which most primary care physicians are drawn. Although physicians in most specialties see some older patients, primary care physicians are more likely to see larger numbers of older adults (CHWS 2005).

Several trends among medical students and primary care physicians raise concerns about the care of older Americans (CHWS 2005). First, medical student interest in primary care is declining, in part because primary care physicians are paid less than other specialties (Arora et al. 2006). Second, the number of primary care physicians receiving certification in geriatrics as a subspecialty has declined. Third, doctors are aging, and older physicians tend to work fewer hours. Recommendations for increasing the supply of physicians as the demand increases with the aging population include forgiveness of medical school loans, funds for continuing education, and higher Medicare reimbursement for services. Recent research, however, also suggests that it may be more

Older adults use many health services at a higher rate than other population groups.



Note: Data is for noninstitutionalized persons in 2005.

Source: Institute of Medicine, *Retooling for an Aging America: Building the Health Care Workforce* (2008): table 2-3.

efficient to use other health workers to perform some of the routine care provided by primary care physicians.

In a recent study, Glied, Edelman, and Prabhu (2009) use a cost-benefit approach to determine if the benefits of having a physician provide particular primary care services exceed the costs of physician education and training, and exceed the opportunity cost of the extended time physicians spend in school. The researchers used data from the National Longitudinal Survey of Youth and the published costs of training physicians. The results of this study suggest that increasing the supply of physicians may not be warranted for certain services because the costs exceed the benefits. Nurse practitioners, for example, may be able to perform many of the primary care services of physicians. In addition to lowering costs and thus increasing net benefits, delegating routine physician responsibilities to other health workers allows physicians to give more attention to the services where their training provides greater net benefit.

Nursing Shortage

Future patterns of aging in the United States may lead to nursing shortages of up to 1 million by 2025, an amount far greater than over the past 50 years (Aiken, Cheung, and Olds 2009). Such a large shortfall of nurses may adversely affect health outcomes. In one study, Aiken and her colleagues (2010) concluded that reducing the number of patients under a nurse's care would significantly improve hospital care. They found that if New Jersey and Pennsylvania hospitals had maintained a patient-to-nurse ratio of 5-to-1 (an amount already mandated by California), surgical deaths in these states would have been 11 percent to 14 percent lower in 2006. Another study that analyzed Swiss acute-care hospitals found that rationing nursing care increased errors in administering medicine, infections acquired at the hospital, and patient dissatisfaction (Schubert et al. 2008).

Nursing schools, however, currently lack the ability to increase the supply of nurses. According to the National League for Nursing, over 99,000 qualified applicants were denied admission into nursing education programs in 2008 (NLN 2009). This bottleneck may be the result of yet another shortage—the low supply of faculty available for such programs. Over the last 50 years, shifting the education of nurses from within hospital-sponsored programs to academic institutions has increased demand for faculty with advanced degrees. The demand for practicing nurses with advanced degrees has grown as responsibilities for more health services are being transferred from physicians to nurses. Increased demand without a comparable increase in supply has driven

up wages for practicing nurses, making it difficult for lower-pay academic programs to attract much-needed faculty (Aiken, Cheung, and Olds 2009).

Solutions for this shortage of nurse educators include higher and more consistent levels of federal funding for programs aimed at developing nursing school faculty and raising enrollment (Rother and Lavizzo-Mourey 2009). Aiken, Cheung, and Olds (2009) recommend public subsidies for students entering baccalaureate and graduate nursing programs, as opposed to those entering associate's or diploma programs, in order to increase the pool of potential educators. Any solutions will likely need to encourage U.S. citizens to enter the nursing labor market. Relying on foreign-educated workers to fill the nursing shortfall will not adequately increase supply and may harm global health efforts (Aiken 2007).

The Direct-Care Workforce

Direct-care workers provide most of the paid hands-on care for older adults in the United States. According to the Institute of Medicine (IOM) report, *Retooling for an Aging America* (2008), direct-care workers include nurse aides and nursing assistants, home health aides, and personal and home care aides. Most of these workers care for patients at home or in nursing homes, with the remaining employed in hospitals.

Not all direct-care workers provide services to older patients, but they do work in the care settings of primary importance for older adults. The IOM report suggested that the demand for direct-care workers will increase with population aging, but the projected number of these workers will remain flat if they continue to be drawn from the female population ages 25 to 54. The shift toward more home and community-based care is also likely to exacerbate unmet demand for direct-care workers, especially for personal and home care aides. Caring for older adults at home or in the community may require higher direct-care staff levels because the staff-to-patient ratio is necessarily higher in these settings.

Direct-care jobs tend to be stressful, to pay very low salaries, and to have few benefits. Job-related injuries, many from overexertion while caring for a patient, also occur at higher rates. For these reasons, the turnover rates in direct-care positions are high. If these issues are not addressed, the supply of direct-care workers is not likely to expand sufficiently to care for the growing elderly population.

Immigration of Health Care Workers

Increased demand for health services in the United States will likely influence the provision of health services in foreign countries. Massive shortages may pull foreign workers from health systems in their own countries. One study showed

that strict immigration and relocation policies for foreign doctors have prevented inflows of physicians to the United States from expanding much in recent years (McHugh et al. 2008). For foreign-trained nursing professionals, however, immigration to the United States has become easier at the same time that shortages have increased opportunities in these health service professions. According to Aiken (2007), foreign physicians are increasingly retraining as nurses in order to immigrate. As a result, the United States has become the world's largest importer of nurses.

But emigration to the United States exacerbates existing shortages of health workers in some developing countries. Eighty-three percent of the foreign-born registered nurses in the United States come from developing countries, and 63 percent have become naturalized citizens (Aiken 2007). Sub-Saharan Africa, with a quarter of the world's mortality and loss of health due to diseases but only 1.3 percent of the global health workforce, can scarcely afford such flight (WHO 2004a, b).

When health workers emigrate to the United States, developing countries lose some of the investment they have made in training these professionals. Additionally, future contribu-

tions the workers would have made to their national economies go unrealized (Dovlo 2007). On the other hand, the remittances these workers send home offset some of the costs of their emigration.

Increasing the domestic supply of health workers in the United States and the compensation for health workers in developing countries can stem emigration, but some nontraditional solutions may also work. Dovlo (2007) pointed to the success of Ghana and Ethiopia in developing a group of health workers with low to moderate skills. Such health extension workers have raised the ability of these countries to address basic health concerns in rural communities. Furthermore, these programs reduce the risk to government and nongovernmental organizations of losing their education investment, because training health extension workers is more specific to the needs of rural communities in developing countries. In a study of several sub-Saharan African countries, Mathauer and Imhoff (2004) found that nonfinancial incentives provided by employers—such as effort-based awards, transparent promotion, and teambuilding exercises—all significantly reduced motivation to emigrate.

Workforce Diversity

The United States is one of the most ethnically diverse countries in the world, yet its health care workforce does not reflect such diversity. According to Sullivan and Mittman (2010), "African Americans, Hispanic Americans, Native Americans, Alaskan Natives, Native Hawaiians and other Pacific Islanders, and certain Asian subgroups (Vietnamese, Hmong, and Cambodian)" are all underrepresented in health professions. For example, African Americans, Hispanic Americans, and American Indians combined make up more than 30 percent of the population (Nivet et al. 2008), but they accounted for only 9 percent of physicians and 6 percent of registered nurses (AMA 2006; HRSA 2006).

Diversifying the health care workforce is essential for meeting the growing variety of demands resulting from sweeping demographic changes and the new provisions under health care reform. Evidence from the past four decades suggests that members of minority groups would benefit from the greater cultural understanding and linguistic capabilities of a workforce that is ethnically and racially similar to them (Sullivan and Mittman 2010). A patient's satisfaction, understanding of the prescribed treatment regimen, and willingness to comply with a doctor's orders increase when patient and care provider have a similar ethnicity and linguistic background. However, in addition to providing distinct advantages to minority communities, a diversified health workforce enhances the capacity and quality of the entire U.S. health care system.

To improve diversity in the health care workforce, an IOM report (2004) suggested that the federal government increase funding for student finance programs that have been known to improve participation of underrepresented minorities in health professional schools. The IOM also proposed that schools give greater weight to less standard types of admissions criteria—such as leadership experience and community involvement. The report noted that most admissions boards strongly rely on standardized test scores and grade point averages, which may leave out other predictors of performance.

Sources

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Health Resources and Services Administration (HRSA), "The Registered Nurse Population: Findings From the March 2004 National Sample Survey of Registered Nurses" (2006), accessed at [ftp://ftp.hrsa.gov/bhpr/workforce/0306rnss.pdf](http://ftp.hrsa.gov/bhpr/workforce/0306rnss.pdf), on May 15, 2010.

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Marc A. Nivet et al., "Diversity in Academic Medicine, no. 1 Case for Minority Faculty Development Today," *Mt. Sinai Journal of Medicine* 75, no. 6 (2008): 491-98.

Louis W. Sullivan and Ilana S. Mittman, "The State of Diversity in the Health Professions a Century After Flexner," *Academic Medicine* 85, no. 2 (2010): 246-53.

Requiring Training in Geriatric Care

Older people tend to have chronic conditions that require ongoing management and coordination among numerous care providers. Aging patterns in the United States are expected to increase demand for geriatric care. According to the IOM (2008), the current health care workforce is not sufficiently trained to meet existing demands of older patients, let alone higher future demands.

Though almost all physicians, physician's assistants, registered nurses, and pharmacists provide at least some care to older patients, only 1 percent or less of each group is specially trained in this field (CHWS 2005; Kovner, Mezey, and Harrington 2002; IOM 2008). The IOM study also revealed that only half of primary care physicians think their fellow nonspecialist peers can sufficiently treat geriatric conditions (Moore, Moir, and Patrick 2004). Even worse, direct-care

Workers in Health Care Industries by State

Although 11.9 percent of employed persons in the United States worked in health care industries in 2008 (see note), the concentration of workers in these industries varied from state to state. Location quotients in the table (page 5) provide a comparison of each state's health care workforce (and the District of Columbia) to that of the entire nation. In states such as Connecticut, Maine, and West Virginia, considerably more than 11.9 percent of all employed are in health care industries. Location quotients for these states are greater than 1. Other states such as Hawaii, South Carolina, and Wyoming have location quotients below 1, indicating that the share of workers in these industries is less than the national share, 11.9 percent.

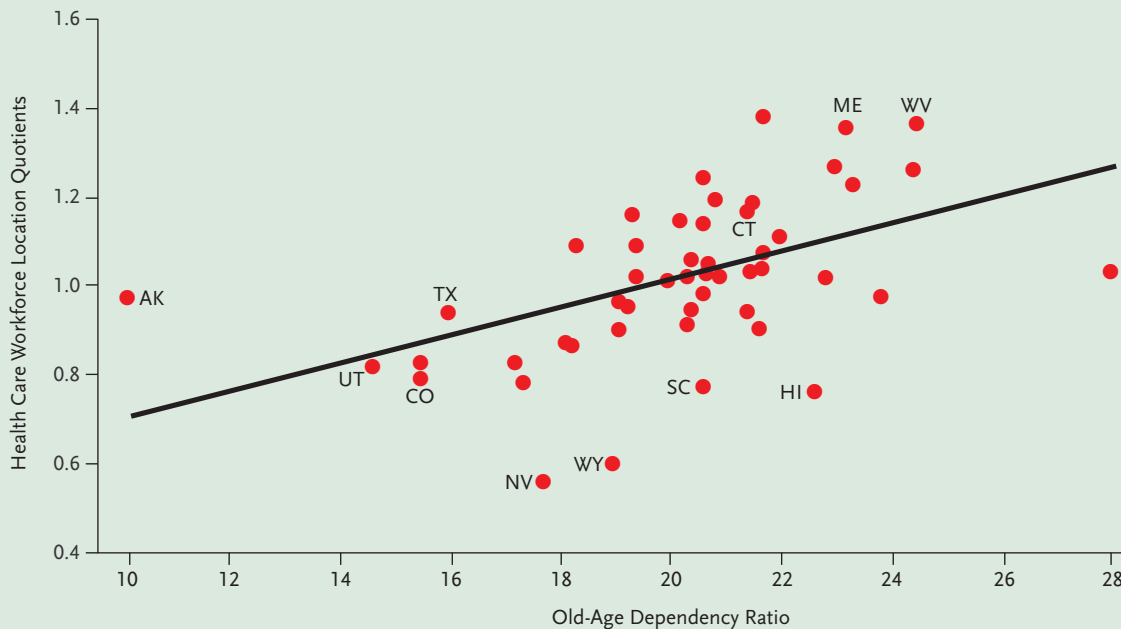
The figure below illustrates that states with older populations tended to have more employment concentrated in health care than those with younger populations. The greater the number of people of retirement age relative to the number of people of working age—the relative dependency ratio—the greater the location quotient tended to be. However, many

states with relatively young populations and low concentrations of health care workers will face considerable challenges as their elderly populations grow. Nevada, Alaska, Utah, Texas, and Colorado are among states that will see their population ages 65 and older at least double by 2030 (Haaga 2010). These are also states where the concentration of health care workers is low.

Note: The definition of the health care workforce used here includes people who are involved in providing health care services to patients in hospitals or in outpatient settings. This includes professionals working as physicians, nurses, chiropractors, medical technicians, and dentists, as well as their support staff working in hospitals, in nursing and residential care facilities, and in ambulatory health care services. Social assistance workers such as non-medical staff at senior citizen communities, rehabilitation centers, and counseling agencies are not included. (BLS, www.bls.gov/oco/cg/cgs035.htm).

Source: John Haaga, "Family Care for an Aging Population: Demographic Contexts and Policy Challenges," presentation at symposium sponsored by Population Reference Bureau and Hopkins Population Center, Washington, DC, June 23, 2010.

Relative to the United States as a whole, states with older populations tend to have larger shares of employees in health care industries.



Workers in Health Care Industries by State (continued from page 4)

State	Health Care Workforce Location Quotient	Old Age Dependency Ratio
Alabama	0.91	21.7
Alaska	0.98	10.3
Arizona	0.94	21.5
Arkansas	1.02	22.9
California	0.79	17.4
Colorado	0.80	15.6
Connecticut	1.17	21.5
Delaware	1.07	21.8
District of Columbia	0.83	17.3
Florida	1.03	28.1
Georgia	0.83	15.6
Hawaii	0.77	22.7
Idaho	0.91	19.2
Illinois	0.97	19.2
Indiana	1.02	20.1
Iowa	0.98	23.9
Kansas	1.03	21.0
Kentucky	1.06	20.5
Louisiana	1.03	19.5
Maine	1.36	23.3
Maryland	1.10	18.4
Massachusetts	1.24	20.7
Michigan	1.15	20.3
Minnesota	1.17	19.4
Mississippi	0.92	20.4
Missouri	1.04	21.6
Montana	1.11	22.1
Nebraska	1.04	21.7
Nevada	0.56	17.8
New Hampshire	1.09	19.5
New Jersey	1.05	20.8
New Mexico	0.98	20.7
New York	1.14	20.7
North Carolina	0.97	19.3
North Dakota	1.27	23.1
Ohio	1.19	21.6
Oklahoma	1.04	21.6
Oregon	0.95	20.5
Pennsylvania	1.27	24.5
Rhode Island	1.38	21.8
South Carolina	0.78	20.7
South Dakota	1.23	23.4
Tennessee	1.02	20.4
Texas	0.94	16.1
Utah	0.82	14.7
Vermont	1.20	20.9
Virginia	0.87	18.3
Washington	0.88	18.2
West Virginia	1.36	24.6
Wisconsin	1.03	20.8
Wyoming	0.61	19.1

Source: Bureau of Labor Statistics Quarterly Census of Employment and Wages (2008), and U.S. Census Bureau's 2006-2008 American Community Survey.

workers—the primary providers of paid hands-on care for older adults—are required to have little training.

Retaining trained geriatric specialists is also a problem. Reimbursement for geriatric specialists tends to be lower than for other specialists or for generalists, in part because Medicare and Medicaid often pay for the care of older patients and compensate providers at lower rates than most other payers do. The IOM study proposed mandating higher reimbursement for practitioners with geriatric degrees.

Since nonspecialists perform a large share of care for older adults, improving geriatric care will also likely require improved training for nonspecialists. Obtaining or renewing any professional medical license or certification should be contingent on the applicant's demonstrated competency in geriatric care (IOM 2008). Likewise, federal minimum requirements for direct-care workers should be increased to reflect the added competencies needed in these jobs.

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The NIA Demography Centers

The National Institute on Aging supports 14 research centers on the demography and economics of aging, based at the University of California at Berkeley, the University of Chicago, Duke University, Harvard University, Johns Hopkins University, the University of Michigan, the National Bureau of Economic Research, the University of Pennsylvania, Princeton University, RAND Corporation, Stanford University, Syracuse University, the University of Southern California/University of California at Los Angeles, and the University of Wisconsin-Madison.

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For More Information

Linda H. Aiken, University of Pennsylvania
www.nursing.upenn.edu/faculty/profile.asp?pid=107

The Center for Health Workforce Studies' 2005 Report: *The Impact of the Aging Population on the Health Workforce in the United States*
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The Institute of Medicine's 2008 Report: *Retooling for an Aging America: Building the Health Care Workforce*
www.iom.edu/Reports/2008/Retooling-for-an-Aging-America-Building-the-Health-Care-Workforce.aspx

The Institute of Medicine's 2004 Report: *Diversifying the Nation's Health Care Workforce*
http://books.nap.edu/openbook.php?record_id=10885

National Center for Health Workforce Analysis Reports
<http://bhpr.hrsa.gov/healthworkforce/reports/>

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1875 Connecticut Ave., NW
Suite 520
Washington, DC 20009-5728
USA

202-483-1100 PHONE
202-328-3937 FAX
www.prb.org WEB
popref@prb.org E-MAIL