

# The Foreign born in the American Healthcare Workforce: Trends in this Century's First Decade and Immigration Policy\*

September 2012

by

B. Lindsay Lowell, PhD  
Director of Policy Studies  
Institute for the Study of International Migration  
Georgetown University  
Email: [lowellbl@georgetown.edu](mailto:lowellbl@georgetown.edu)

\*Paper prepared for presentation at conference on “Migration and Competitiveness: Japan and the United States” at the University of California at Berkeley, March 2012.

## CONTENTS

EXECUTIVE SUMMARY .....	iii
INTRODUCTION .....	1
AVENUES OF ENTRY IN U.S. ADMISSION POLICY .....	3
Legal Permanent admissions .....	3
Temporary Work Programs .....	5
Unauthorized work.....	6
A BRIEF HISTORY OF SHORTAGE RESEARCH.....	7
A PROFILE OF IMMIGRANTS IN THE HEALTHCARE WORKFORCES.....	10
The American Community Survey .....	11
Occupational growth, distribution, and concentration .....	12
Human capital, demographic and workplace characteristics .....	14
CORRELATES OF A SHORTAGE OF CAREGIVERS .....	15
SUMMARY OF FINDINGS .....	18
CONCLUSIONS.....	19
REFERENCES.....	21

## EXECUTIVE SUMMARY

We know something amount about immigrants' role in America's growing healthcare workforce, but surprisingly less than one would imagine. This study is largely a description of the demographic and labor characteristics of the native and foreign born in healthcare over the first decade of this century. It examines broad occupational classes and distinguishes between general care and long term care settings. America's ageing society is setting the course for a major expansion of long term care where the economics of care differ. Congress regularly tables legislative proposals to boost the immigration of nurses, an occupation thought to be short supply, although little attention is paid to other healthcare occupations which may face greater supply challenges. Then again, there are no current immigration visas in the system that might conceivably target the lesser skilled health occupations that are growing most rapidly.

Statistics tabulated from U.S. Census microdata are examined and address a few simple questions about immigration. The findings yield some clear observations.

Immigrant women are slightly more likely than natives to be employed in long term care; and immigrants are most concentrated both among professional practitioners and the least skilled direct care, service workers. It is in these segments of the healthcare workforce that immigrant contributions are greatest and which show the greatest disparities.

The proportional contribution of immigrants to the growth of the total workforce has been only about one-third that of the native contribution. Furthermore, the foreign-born percentage of healthcare occupations has increased only slightly over the decade and, except for practitioners and direct care workers, immigrants are under-represented in most healthcare occupations. So the foreign-born play an important but not a central role.

The foreign born are very similar to natives in terms of their average age, education and the dominance of most occupations by women. They differ in terms of being much more likely than natives to reside in metropolitan areas and in central cities. This has unexplored implications for the role immigrants play in addressing regional shortages and disparities in healthcare provision.

The foreign born in healthcare earn more than natives and this appears to be both significant and inexplicable by way of differences in experience or education. Foreign-born earnings may be higher in healthcare as they work more hours and weeks than natives. This may be correlated with unobserved lower rates of turnover or more employer-specific experience. Of course, the earnings of direct care workers, particularly in long term care, remains very low on average.

Shortage indicators do not paint a clear picture of national shortages in broadly defined healthcare occupations, just the opposite. The ratios of healthcare workers to population have steadily increased for direct care providers, but also for registered nurses in long term care. Workforce growth has outstripped that of comparable occupations. Yet, earnings growth for nurses has been flat since 2004. The earnings of nurse and other home, service aides fell sharply over the decade in line with other service occupations.

It is perhaps not surprising that long term care has been so dynamic and that immigrants' greatest role is in this lower pay sector. And it has long been known that the foreign born are a substantial percentage of the workforce of both practitioners and direct care workers, and that they are not over represented in the case of nurses. Nor for that matter are the foreign born strongly represented among technicians or service workers in healthcare. However, there are a couple of implications that can be drawn from these basic facts when coupled with the finding that there do not appear to be national shortages; or at least the labor market is "soft."

Most all of the recent Congressional debate over immigration and healthcare has focused on nurses with a special concern for hospital settings. Yet the greatest demand for immigrant nurses, both registered and licensed, appears to be in long term care settings. The strong workforce growth in long term care settings is consistent with the observation that the last decade has seen the entry of the large baby boom generation into retirement and that will escalate in the next decade. It would seem inappropriate at this time to set aside special visas or to markedly increase the number of nurses because the findings here, and that of others expert on the issue, is that there are no current national shortages especially now with the lingering effects of the great recession.

In the case of direct long-term care, i.e., nursing, psychiatric and home aides; and personal care service and aides, there is a lack of existing visas that target such workers. If there is a looming shortage of direct care workers then it might be prudent to fashion a pathway to admission. Because of the nature of long term care, one or even two year temporary visas might be appropriate in say nursing homes. A temporary work visa for immigrants in the homes of the elderly might be inappropriate. Mostly it would seem unnecessary to set aside special visas because it must be the case that the bulk of immigrant care workers are supplied via visas for family reunification. Future flows of family immigrants will remain strong and, that being the case, visas for direct care workers would compete head to head with newly admitted family migrants.

## INTRODUCTION

Healthcare is critical to national competitiveness because businesses must have healthy workers to be productive and because the cost of healthcare places constraints on economic growth. In these respects the United States is fortunate in having good healthcare for much of the population and a population that is ageing more slowly than most other developed nations. But the United States is very uncompetitive in that many workers have not been covered by health insurance and costs have long appeared to be out of control (Johnson 2012). The U.S. spends \$2 trillion annually on healthcare, nearly 18 percent of its GDP, or more than any other developed nation. The U.S. Centers for Medicare and Medicaid Service has recently projected, even with President Obama's reform and extension of health insurance to everyone, that the national cost of healthcare will reach 21 percent of GDP by 2021. These costs render U.S. businesses less competitive internationally and as the American population ages the total package of costs escalates pressure on the federal budget and the entire economy.

While immigrants play an important role in helping America meet the challenge of providing healthcare, America's immigrant admission system does not place strong emphasis on highly skilled professional physicians and nurses. And like most other nations, the U.S. immigration system has no provisions that favor lesser skilled care providers especially for the long term care of the elderly (Spencer et al. 2010). In fact, the U.S. admission system is dominated by family sponsored immigrants and, increasingly, by temporary workers most of whom find jobs with employers in the information technology industry and outside of healthcare. There is a strong lobbying effort to increase work-related immigration and nurses figure into that, consider the Emergency Nursing Supply Relief Act entertained in the recent U.S. Congress (H.R. 1929), but typically U.S. policymakers spend little systematic thought on immigration as a primary tool for managing labor markets. Therefore, any discussion about the relationship between immigration, the healthcare industry and U.S. immigration policy is primarily restricted to the facts on the ground about the foreign-born workforce in healthcare; and the features of U.S. admission policy that currently, or perhaps with some future changes, might affect the supply of immigrants although there is no substantive consideration of workforce planning.

What we can say then about the role of immigration in U.S. competitiveness in healthcare begins with what that workforce looks like and how it responds to market forces. There often appears to be a general consensus that there are current shortages of healthcare workers, with certain specialties being particularly short, and that severe shortages are sure to occur within the next decade. That is, indeed, a long standing perspective and one that necessarily lends itself to advocacy for changing U.S. immigration policy to favor increased admissions of healthcare workers, especially as it turns out for professional nurses. But the belief in worker shortages is not restricted to professional care, it is widely perceived as a problem that prevails throughout caregiving occupations and is a condition that is forecast to get worse given a presumed lack of domestic workers and the robustly increasing demand for care. If that is the case, one might wonder why U.S. policymakers do not fashion a system that more readily admits healthcare workers and, perhaps, not only professionals but also direct care workers say like Canada's live-in caregiver visa. This is not the place to debate the reasons that the U.S. admission system is "broke," also broadly agreed upon, and the political passions that block meaningful reform. Suffice it to note that any reasoned change of the system in favor of more foreign healthcare workers should take into account how the admission system currently supplies workers and what the state of knowledge is about the prevalence of shortages.

Along with a description of how immigrants enter the U.S. and the research on healthcare shortages, this study provides a description of the demographic and employment characteristics of healthcare industry during the past decade. Because claims of healthcare worker shortages prevail for most all care occupations, a broad array of occupations are considered although the data do not permit a discussion of detailed occupational specialties. It is important to examine professional care in short-term settings, as well as, long term care. There are high costs in hospitals and practitioner settings and the initial waves of ageing baby boomers will put pressure here, but the ageing population is on course for a major expansion of long term care where the economics of care are different. In turn, these data are used to access the problem of shortages and, therefore, the immediacy of calls for reform of immigration policy. Are the foreign born more likely to be employed in certain occupations or sectors? What has been their contribution to workforce growth over the decade and does that vary by sector? What is the foreign-born share

of occupational and sectorial workforces are they more or less likely to be employed in particular settings? In other words, are immigrants playing a major part in the evolving supply of workers in healthcare and, if so, in which particular segments? The latter question is linked to the demographic, human capital, and earnings profiles of different segments of the workforce. Is it the case that immigrants are more likely to be found in lesser skilled and long term care settings because these are low paying? Furthermore, do immigrants earn less than natives; does a low “reservation wage” make them a preferable workforce, which can be the case for other occupations? Granted that the healthcare workforce will continue to play a central role in the international competitiveness of the United States, what role should U.S. admission policy play in regulating immigrant admissions?

## **AVENUES OF ENTRY IN U.S. ADMISSION POLICY**

There are three major ways that migrants come to work in the United States: through legal permanent admission, legal temporary work authorization; and as illegal entrants, visa over stayers, or legal visitors who are not authorized to work. While the working visas in both legal permanent and temporary migration have some provision for professional healthcare workers, they do not effectively target them and there are effectively no visas for direct workers. At the same time, the family-based admissions appear to admit many professional and most of the foreign-born direct care workers.

### **Legal Permanent admissions**

Immigrants admitted permanently are known as Legal Permanent Residents (LPRs) and more commonly as “green carders.” They are entitled to most all rights and after five years they may opt to become naturalized U.S. citizens. The four principal doors for legal permanent admission are family reunification, employment, diversity, and humanitarian interests. The total number of admissions for the 2001-2010 decade averaged 1,050,000 annually with an average of just 161,000 or 15 percent in the employment-based visa classes. At the same time, family-sponsored admissions averaged 650,000 or 64 percent of the total admitted. Humanitarian admissions made up another 13 percent on average and the so-called Diversity visas another 4 percent.

There is little administrative data on the number of either professional or direct care workers who are admitted. We can confidently assert, nevertheless, that the employment-based visas are available only to professional care workers. More precisely, professional nurses are targeted only by the so-called third preference employment class which requires an employer sponsorship, a nursing degree, passing scores on professional nursing and language exams, or registration in the employer's state. Of course, nurses may be admitted under the family categories. The only legal permanent avenues open specifically for lesser skilled, direct care workers are, in turn, sponsorship by a family member.<sup>1</sup>

The available data for permanent admissions suggest some year-to-year variation in the admission of professional healthcare workers. About 1.5 times as many nurses are admitted as physicians. From 1991 to 1996, the total number of nurses admitted averaged 8,564, while from 1997 to 2000 the number of nurses fell to an annual average of 4,815. However, the numbers in the permanent employment-classes alone grew again to 6,625 in 2004 and, as at that time two-thirds of nurses entered on employment visas; this suggests that as many as 9,800 nurses were admitted altogether if family visas were to be included. More recent detailed data are unavailable.

One indirect indicator suggests that the volume of foreign nurses admitted has increased, albeit not greatly (Kenwood et al., 2010). The National Council on the State's Board of Nursing reports 13,806 internationally educated nurses passed the National Council Licensure Examination for Registered Nurses (NCLEX-RN) or about 9.3 percent of all individuals who passed the exam in 2009. And despite a decline in 2009, the number of exam takers increased nearly two-thirds over the past decade and the percentage of international graduates increased. On the other hand, only 836 international graduates out of 61,384 passed the National Council Licensure Examination for Practical Nurses (NCLEX-PN) or less than 2 percent. Then again, there are fewer PNs overall and the share of international exam takers changed little. In other words, internationally educated nurses tend to be Registered Nurses, likely most of whom are sponsored by employers, while the less skilled PNs are few in number and no visa favors them.

---

<sup>1</sup> An unknown number of professional and perhaps direct care workers may be admitted in the Diversity class of admission. This visa requires a minimum of a high school degree and, of the roughly half of the average 45,000 annual entrants who report working, 42 percent are professionals and another 15 percent are service workers.



## Temporary Work Programs

The temporary visa categories are referred to by a letter of the alphabet and over the past two decades, despite their name, they have become the entryway to eventual permanent status. There is a visa targeting just nurses, but the H-1C admits a very small number of workers: only 86 visas were issued in 2010.<sup>2</sup> The H-2B for seasonal jobs outside of agriculture may admit a small number of caregivers. There are a substantial number of nurses and physicians authorized to work with the H-1B visa which permits an initial stay for three years and upon application a continuation of stay for another three years.<sup>3</sup> The H-1B visa admitted, on average from the year 2000 to 2009, 5,540 new visaholders in healthcare and an additional 6,635 continuations. Some 54 percent of these H-1Bs were physicians, 16 percent were therapists and the balance is not specified in the data but would have included nurses.<sup>4</sup> Beside these H-1B visas there are also migrants from Canada who work in the United States under the mobility provisions of the North American Free Trade Agreement. Perhaps 30-50,000 individuals are admitted annually, predominantly from Canada, and anecdote suggests that there are a substantial number of Canadian nurses.<sup>5</sup> We can confidently assert that a large number of professional physicians and nurses are admitted on both the permanent and temporary work visas systems. What we cannot know from these data is how lesser skilled and other healthcare occupations are supplied by the immigration system, although we can deduce that some information or other technicians may enter on visas for professionals. Almost all lesser skilled direct or front-line workers certainly enter on legal family visas that admit the lion share of all U.S. immigrants.

---

<sup>2</sup> The H-1C visa is set aside for nurses who work in under-served areas and its cap is set at under 500 workers. For statistics see U.S. Department of States, Nonimmigrant Visa Statistics, [http://www.travel.state.gov/visa/statistics/nivstats/nivstats\\_4582.html](http://www.travel.state.gov/visa/statistics/nivstats/nivstats_4582.html)

<sup>3</sup> The H-1B visa's educational requirement is more than that required by registered nurses in most states. This makes the H-1B visa most appropriate for nurse practitioners and certain specialties that require the additional education (e.g., operating room nurses).

<sup>4</sup> This logic suggests 1,800 new 2,190 continuations professional nurses on H-1B visas. Author's tabulations of the Department of Homeland Security are Characteristics of H-1B Specialty Occupations, various years, <http://www.dhs.gov/files/statistics/immigration.shtm>.

<sup>5</sup> The so-called TN (Trade NAFTA) class of entry includes Mexico; however, there were fewer than 5,000 Mexican admissions on TNs in 2008. Thus, the TN is predominantly a vehicle for Canadians and the use of the TN by Mexicans for work in healthcare occupations is unknown.

## **Unauthorized work**

Of course, there are a large number of unauthorized workers resident in the United States and most are found in low-skilled jobs. About 55 percent of illegal residents are believed to have entered clandestinely, largely across the land border with Mexico although others arrive by sea, often in makeshift boats or rafts. About 45 percent enter through recognized ports of entry. Some do so with fraudulent documentation, but many enter having obtained legitimate visas, as tourists or even temporary workers, and then overstay the period that the visa specifies.

Reliable estimates of the unauthorized population can be made with the so-called residual method which subtracts the known legal population from the total population. As of 2010 there were an estimated 11.2 million illegal residents, which is substantially more than the 8.4 million resident in 2000, but less than the peak of 12 million reached in 2007. Indeed, it appears that the recession and other factors have substantially reduced the population (Passel and D’Vera Cohn 2011). Unauthorized workers are roughly around 5 percent of the U.S. labor force. Another set of estimates, made with a process of imputation, indicates that most unauthorized workers are found in occupations in construction, housekeeping, restaurants and grounds maintenance (Passel and D’Vera Cohn 2009).

Healthcare of any sort does not appear to employ many unauthorized workers, although they are a high share of the private household industrial classification in which some may work as direct caregivers. While comparative annual entries are not known, the estimates suggests that no more than 3 percent of professional healthcare workers are unauthorized and about 20 percent of direct care workers in long term care settings (Lowell, Martin and Stone 2010). It is perhaps unsurprising that highly regulated professional occupations have few unauthorized workers, but some observers might anticipate a higher proportion of direct care workers would be unauthorized. Surely there may be some under reporting of workers, especially in family homes where we know many unauthorized women find jobs, but this figure appears robust from what we know about U.S. data systems and the nature of these estimates. In short, employment visas appear to supply a substantial number of professional caregivers either on for permanent or temporary stays, but it will become clear that legal family visas by subtraction must provide a major avenue of entry while unauthorized migration supplies a notable but not uniquely high

share of workers. What if the legal admission system were to be reformed, should it target foreign caregivers and, if so, for which sectors? Should the permanent or temporary system be used? What is the evidence that admission policy should alter how it supplies foreign healthcare works and how precisely can it do so?

## **A BRIEF HISTORY OF SHORTAGE RESEARCH**

Ascertaining workforce shortages is a difficult task, not least because economic theory suggests that shortages are short lived and that supply bottlenecks are transient and best left to be resolved by market forces. But employers tend to be certain that they know when the supply of workers is short and their experience on the front line of employment can be persuasive. On the other hand, healthcare delivery is not only about shortages gauged by indicators such as rapid occupational wage growth, low rates of employment, or lags in the training of new workers. The relative number of providers, gauged by an increasing ratio of healthcare providers to patients, is driven not only by naked market forces but also by how wealthy patients are or the societal premium put on perceived quality of care. In this sense, shortages in healthcare can be “enigmatic” which is to how many providers is enough has objective metrics, as well as, metrics based on preferences or expert judgment (Prescott 2000).

Nevertheless, the research literature on shortages in healthcare tends to be based on labor market information that balances assumptions about demand with evidence on the relative supply of healthcare providers. By those metrics, the literature is replete with period-to-period reversals in its assessment of whether or not shortages exist, even as it has tended during much of the past decade to be consistently anticipating that shortages will emerge in the near future. During the 1980s the literature on nurse supply, for example, mostly concurred that shortages existed and for reasons that differed from what appeared to drive a long standing shortage of nurses. Declines in the number of nursing students and the number of women ages 23–26 who were choosing nursing as a career suggested shortages would only get worse without rapidly increasing wages or other solutions (Millonig 1988). At the same time, cycles of shortages and surplus in hospital staffing from 1977 through the 1990s corresponded with changes in wages and staffing levels, although in California levels of staffing were stable despite cyclical

perceptions of low staffing levels (Spetz 2004). Indeed, the measures used to define a shortage have been found to yield varied conclusions (Grumbach et al. 2001).

However, during the early 1990s a consensus was reached that the newly introduced Health Maintenance Organizations (HMOs) would increase efficiencies in the provision of care and that led to concerns of a glut of professional caregivers. A study released by the Pew Health Professions Commission in the mid-1990s predicted a surplus of 100 to 150 thousand physicians by the end of the decade, mostly of physician specialists (Pew Commission 1995). The surplus of specialists was projected to be equal to 15 to 30 percent of all physicians by 2000. The Council on Graduate Medical Education supported these findings based on its independent analysis and the adjusted needs-based model of the Graduate Medical Education National Advisory Committee (Grumbach, 2002). The Pew Commission also predicted a surplus of 200,000 to 300,000 nurses by the year 2000, but that prognosis failed as the HMOs did not lead to the anticipated efficiencies.

By the end of the 1990s shortages were again thought to be pervasive and were projected to get worse. A shortage of nurses in hospitals was found to have begun in 1998 and through 2001 was one of the longest shortages on record (Buerhaus, Staiger and Auerbach 2003). But in 2002 and for the next few years the ratio of nurses to population increased and was accompanied by sharp increases in employment and earnings. Was the shortage ending (Lowell and Georva 2004)? After all, employers were addressing the working conditions, the shift work, overtime and stagnant earnings that led to poor retention in nursing. Still, researchers found little reason for optimism. Surveys of nurses found that they reported improved conditions and a reduction in working hours, but did not believe these would turn around the current much less future shortages (Ulrich et al. 2005). Others argued that about one third of employment growth was due to immigrants but that two thirds of the employment increase between 2000 and 2002 was driven by older nurses, presumably returning to nursing, and that the workforce need soon shrink as they left nursing or retired (Buerhaus, Staiger and Auerbach 2003).

The operative assumption for most of the past decade, and prevalent today, is that shortages of providers persist. Experts say that there are too few primary care and specialist physicians,

dentists, nurses, and other medical and dental assistants, and that by 2020 there will be a shortage of up to 200,000 physicians and 1 million nurses. The U.S. Bureau of Health Professions estimate today's shortage to be more than 400,000 nurses (Bureau of Health Professions 2006). And the American Hospital Association calculates that 116,000 registered nurse positions are unfilled at U.S. hospitals and another 100,000 jobs are vacant in nursing homes. The shortages may worsen as 78 million baby boomers, already beginning to retire in 2001, begin in earnest around 2011 when an important report by the National Academies Institute of Medicine (IOM 2008) notes that the boomers "will face a health care workforce that is too small and woefully unprepared to meet their specific health needs." The IOM calls for initiatives to train health care providers in the delivery of geriatric care and to the basics of geriatric care and also to prepare family and other informal caregivers with training to care for the ageing. To pay for these actions the IOM recommends that Medicare, Medicaid, and other health plans pay higher rates to boost recruitment and retention.

Then again, with little fan fair, in nursing at least the cycle seems to have turned around. To be sure, forecasting is a hazardous undertaking but apparently no one had anticipated that "counter intuitively" since 2008 and during a long-lived labor force recession the number of registered nurses would increase as much as it did (Buerhaus, Auerbach and Staiger 2009). Again one could ask whether the shortage of nurses had ended. Despite the good news past experience suggested that the U.S. lack of capacity to educate nurses, an excess of applicants over what nursing schools can admit, would make short work of the turnaround. The recession might well have been expected to compound the bottleneck as many newly minted nurses find it hard to find employment even while more experienced nurses wait it out until prospects look better in other jobs. But only a couple of years later (Auerbach et al. 2011) report that from 2002 to 2009 the number of nurses ages 23-26 increased by nearly two-thirds, likely the largest cohort of registered nurses ever seen. This unanticipated phenomenon means that the projected workforce will grow faster than previous projections had entertained (Auerbach, Buerhaus and Staiger 2011). Economic Modeling Specialists, Inc. has produced new projections that suggest not only that the shortage is over, but that many states are experiencing an over-production of nurses. Those projections are, naturally, not without their controversy (American Association of

Colleges of Nursing 2011). Perhaps we are only in a short-term bubble (Auerbach, Buerhaus and Staiger 2012).

Nurses are not the whole story in healthcare, but the point here is that determining whether or not a shortage exists, or when it might end, much less projecting massive shortages 20 to 30 years from now, is a necessary exercise but one fraught with imprecision. The strident tones one hears indicate a certainty that does not exist. The U.S. Bureau of Health Professions carries out shortage determinations along with implementing programs to address multiple workforce challenges and, in that context, shortage determinations help planning activities. Those who peer into the future need to be nimble; however, because conditions change rapidly and because worker shortages may have less to do with numbers and more to do with how workers are utilized. Today's shortage of primary physicians might be resolved by making primary care more attractive compared with specialization. It might also be addressed by restructuring and the use of nurse practitioners and teams of technical experts overseen by physicians (Bakhtiari 2009). Ultimately, those who wish to use immigration policy to address "shortages" are involved in a quest that begs serious questions about the ability to fine tune the existing admission system to meet healthcare demand. How many migrants are needed to offset putative shortages, for how long, in what admission status? Which healthcare market is to be targeted?

## **A PROFILE OF IMMIGRANTS IN THE HEALTHCARE WORKFORCES**

Fortunately, U.S. labor force data is better able to provide a sense of immigrant numbers and a picture of where they find employment. The past decade saw a slowing of the boomlet in immigration numbers that occurred in the 1990s and, in particular, a decline number of unauthorized entrants and a slight decline in the illegal resident population. Of course, 2000 comes just before the economic recession that occurred around the events of 9/11 and a long period of what has been called the "jobless" recovery. There was some growth in total employment after 2003 which peaked around 2007, only for the most recent recession to strike in 2008. Since then, U.S. employment has not recovered its pre-recession high. On the other hand, healthcare has enjoyed ongoing growth and there are distinctive patterns in general versus long-term healthcare.

### **The American Community Survey**

The healthcare workforce is comprised of several occupations and employment primarily but not only in formally defined health industries. For the purposes here, I will restrict the discussion primarily to workers in healthcare industries and broadly defined occupational groups. There are about 30 listed “Healthcare Practitioners and Technical Occupations” that are considered to be professionals, while another six “Healthcare Support Occupations” are classified as service jobs. An additional two occupations can be coded “Personal Care and Service Occupations.” I collapse these occupations into 8 occupations initially and then remove the two classes of workers for the balance of the discussion further cross-classified by industry sector.

There are two major industry sectors, general healthcare and the long term healthcare sector (LTC). About 16 individual industries are included under the heading of “Educational, Health and Social Services” and I add private households when healthcare service workers report this as their industry of employment. About nine broadly classified industries can be identified which are further collapsed to eight groups: three of these, hospital, practitioners’ offices and outpatient care are the formal care sector while five are considered to be long term care.

I follow prior research to define direct care workers with selected occupations restricted to LTC industries, but we expand our examination here to professional care workers in a smaller subset of LTC industries. Like others, we consider lower-skilled direct care providers to include the occupational titles of nursing psychiatric and home health aides, as well as personal and home health aides. Professional care workers are employed in occupations titled practitioners (physicians and dentists, etc.), nurses, or therapists. Direct care workers are, by definition, in long term care and so we consider any employment in one of seven LTC industries. Professional care workers are defined as being employed in five industries that provide almost only long term care, but they are excluded if they are employed in formal settings that tend to service outpatient care or hospitals.

### **Occupational growth, distribution, and concentration**

The size and rate of growth of an occupation is an indirect gauge of its strength of demand and immigrants' contribution to employment growth is a gauge of reliance on the supply of foreign workers. Table 1 shows all of the major healthcare occupations, the size of the workforce in 2001 and 2009, as well as, two measures of change in workforce size. For example, the workforce of these combined eight occupational groups was 7.7 million in 2001; and by decades end had grown to 10.5 million or a little under 7 percent of the entire U.S. labor force. Interestingly, immigrants' share of these occupations, while it has increased from 14.3 to 17.0 percent, did not increase that substantially. In five out of the eight occupational groups immigrants' share of the workforce is less than their share of all workers in the entire U.S. labor force which in 2010 was 15.6 percent. In fact, immigrants have been and remain, by this metric, under-represented in the nursing occupations, as well as for therapists, technicians or other health support therapists and assistants. The foreign born are over represented only at the skill extremes, as either practitioners or as nursing or personal care aides.

#### **TABLE 1 HERE**

All immigrant healthcare workers contributed just 25 percent of the increase from 7.7 to 10.5 million in the number of all healthcare workers between 2001 and 2009. That is substantially less than the roughly 48 percent immigrants contributed to the growth of total U.S. labor force over the decade. In fact, immigrants contribute most to the growth of the practitioner workforce and least to therapists, technicians or health support therapists and assistants. Still, and partly because migrants are a small fraction of most healthcare occupations, the rate of growth of the foreign-born workforce was nearly double that of natives over the decade. The number of native healthcare workers grew by 32.4 percent and the number of the foreign born by 62.0 percent. The 231.3 percent growth of the number of foreign-born employed as personal care service and aides was most remarkable: 66,000 to 219,000. The number of natives likewise grew remarkably; there was a 183.0 percent increase over the decade. These direct care workers are in demand to assist the growing number of elderly with the activities of daily living primarily in home care settings.



The demand for workers in any occupation is conditioned by the industries in which they are employed. Table 2 shows major health industry groupings in 2009, identified separately by the general and long term care sectors, and eight healthcare occupations. Roughly less than two-thirds of all healthcare workers are found in general care and another third in long term care settings. Otherwise, it is worth noting that certain occupations concentrate in a given industry. Over half of hospital care is provided by nurses and physicians. Over half of the staff in nursing homes is nurse aides, while between half and three-quarters of care in long term care outside of nursing homes is provided by nursing and personal care service or aides. These concentrations also changed relatively little from 2001 to 2009 with the exception of an increase in the share of personal care service workers in family and home care over the decade.

#### TABLE 2 HERE

In terms of the distribution of occupational workforces across the different industry groups, table 2 shows that there are few marked differences between natives and the foreign-born. The foreign born in any given occupation are a little more likely to be employed in the long term care sector, especially for workers employed in family or homes, as well as, for those in the occupations of personal care service and aides. The most skilled professional occupations, practitioners and registered nurses, are most likely to be employed in general care: about 90 and 80 percent respectively. Foreign-born practitioners and nurses are more likely than natives to be employed in hospitals, while foreign-born personal care service workers are more likely than natives to be employed in family and home care.

This barbell type distribution is also reflected in the percentage all workers who are foreign born in each occupation-industry combination. For example, 26.4 percent of all practitioners in hospitals are foreign born, while roughly 30 percent of those employed in nursing and personal care service or as aides are foreign born and in LTC home/other health-care service and in family and households settings. Registered and particularly licensed nurses tend to be under-represented in practitioners' offices and outpatient care. Likewise, the foreign born tend to be under represented in all industries when employed as technicians and health support therapists or assistants. Indeed, immigrants are not highly represented among technicians and health support therapists; and neither are these "caregivers" in the traditional meaning of the term, so are excluded from the balance of the discussion.

### **Human capital, demographic and workplace characteristics**

The human capital characteristics of workers generate differences in terms of earnings and labor market outcomes. Further, average differences in skills and training often predict which groups of workers are employed in different sectors. Table 3 shows basic human capital and demographic characteristics of workers in the general and long term care sector. The first notable thing is that there are fewer differences in the characteristics of the native and foreign born than there are differences between all workers in general and long term care. All workers are slightly older and more likely to be female when employed in long term care, while the foreign born in direct care occupations are slightly less educated than natives. Interestingly, therapists, as well as direct care personal care and service aides also are slightly more likely to employ males of either nativity especially in the general care sector. Thus, it is fair to say that education and experience in either sector are similar regardless of nativity, but that females tend to be more common in long term care. Also, the average age of workers in either sector increased less than one year over the decade and is little more than the average of 41 years of age for all immigrants; and average education in healthcare occupations changed not at all.

#### **TABLE 3 HERE**

However, immigrants are substantially more likely to live (and work) in metropolitan or urbanized areas than natives, while they are also more likely than natives to live in the central city of a metropolitan area. These differences are important because they suggest differences in where “shortages” of healthcare workers may be most influenced by immigrants. In terms of immigrant-only characteristics, more immigrants in healthcare are naturalized citizens, 60-66 percent, than are employed immigrants generally at 43.5 percent in 2010. Those in lesser skilled healthcare occupations are least likely to be naturalized citizens, some 47 percent of personal care service and aides. Of course, more settled immigrants tend to naturalize and those in healthcare are slightly more likely to have spent more years in the United States than are other immigrants. Roughly 25 percent of foreign healthcare workers arrived during the first decade of the century compared with 33.7 percent of the foreign born 16 to 64 years: 75 percent are long term residents compared with 64 percent of others. Professionalized healthcare immigrants are more likely to be long term settlers, especially those working in the long term care sector.

Next, table 4 shows the weekly earnings and other labor force characteristics of healthcare workers. As one might anticipate, worker earnings are lower in long term care while unemployment is higher. At the same time, workers in long term care work slightly fewer hours than in general care and are also less likely to have health insurance or to be self-employed. What may be more surprising is that the foreign born earn more on average than do natives in either sector, have lower unemployment, and tend to work more hours and weeks on average. However, immigrants are little different from natives in terms of health insurance and self-employment. The earnings of advantage of the foreign born in healthcare cannot be readily explained by their human capital, as we have seen above, because immigrants are about the same age and have education similar to that of natives. What is more, the foreign born have less English ability than natives which should significantly lower wages. We are thus left with a conundrum, apparently immigrants are not undercutting natives by accepting lower wages, but why should they receive higher earnings when they are otherwise either similar to natives in human capital but are somewhat lacking in English ability?

TABLE 4 HERE

## **CORRELATES OF A SHORTAGE OF CAREGIVERS**

How can we ascertain whether or not there is a “shortage” of workers in healthcare or, for that matter, any other occupation? The healthcare industry tends to identify shortages with a shortfall in the number of caregivers relative to the patient population. And there is plentiful research showing that when caregiver/population ratios fall there is a corresponding decline in health outcomes for patients. One of the difficulties with this computation is that, despite the publication of “optimal” ratios, there is no firm caregiver/patient ratio that captures an ideal. Not only can wealthier societies afford higher ratios, standards of care may improve with higher care ratios, often hard workloads are eased, hiring is facilitated, and the costs of organizational and technological substitutes can be offset. Stakeholders may err toward interpreting the situation as one of shortages for any one of many good reasons.

At the same time, most economists tell us that shortages are short-lived because, if demand is strong enough, employers will increase wages and that will induce more workers to enter any

given occupation. When demand outstrips supply, shortages can be said to exist if employment growth and wages are increasing and unemployment is low. The U.S. Department of Labor (BLS 1999) has defined shortage occupations as those that exhibit employment growth of at least 50 percent faster than the average, wage increases of at least 30 percent faster than the average, and an unemployment rate of at least 30 percent lower than average.

Figures 1 and 2 show that the ratio of caregivers to population has increased over the first decade of this century. In fact, they have increased rather linearly year-to-year for almost all healthcare occupations (see Appendix Table 1). And the increases have occurred in both general and long term care. It is obvious that an increasing ratio of healthcare providers cannot happen simply because the population is increasing; rather an increasing ratio indicates that there is a growing supply of workers relative to the population. By this metric and in almost all broadly defined healthcare occupations there is no obvious evidence of growing shortages, but rather just the opposite. And as the relative number of providers has been increasing it would, at first blush, be counter intuitive to assert that there are current shortages. Just how much faster should caregiver/patient ratios increase, how high should they be, to attain an optimal ratio?

#### FIGURES 1 & 2

The largest increases in care ratios have been in long term care, perhaps because of the increasing growth in the size of, and the wealth of, the retiring baby boom generation. The largest occupational increases in care ratios have been for both the nursing and personal care home aides in long term care, followed by registered nurses in both sectors and licensed nurses in long term care. By now it should be clear that the general and long term care sectors are staffed very differently, the former relying on combinations of professional nurses with physicians, the latter relying on cadres of lesser skilled nurses and personal care aides combined with professional nurses. Care ratios in the long term sector are substantially greater, because the nature of the care provided is more labor intensive. But also because the actual prevalence of those requiring care is substantially greater in the population 65 years of age and older than for the younger population. In fact, care ratios might also increase if demand were being driven by increasing prevalence rates of disease or care requirements. On the one hand, obesity and chronic disease have been increasing (Horvath 2004). On the other hand, the age-adjusted prevalence

rates of major diseases, although high for some subpopulations, have been decreasing (American Heart Association 2011).

Another way to address the question of shortages is by examining changes in employment and earnings. The focus is on registered nurses and nursing and home health aides because their care ratios increased substantially over the decade. Figure 3 shows the change from 2000 to 2010 in the workforce of registered nurses and other, non-healthcare professionals. The registered nurse workforce has been growing substantially faster than that of other, non-healthcare professionals, even during the recent recession. While Figure 4 shows that the change in RNs earnings has been essentially flat since 2004, the average earnings of other professionals have been in decline. Likewise, and despite a low rate of unemployment compared to the national average, RNs rates of unemployment have changed little over the decade while that of other professionals has trebled. These trends suggest that demand for RNs has been strong relative to supply, at least compared with that for other professionals. But the trends do not clearly signal pervasive shortages precisely because the RN to population ratios has been increasing smartly and wages changes have been mostly flat. One could just as well conclude that employers, by offering stable yet higher wages than those of other professions, have successfully attracted new nurses, as well as, retained and attracted back existing nurses.

#### FIGURES 3 & 4

Next consider workforce trends in for nursing, psychiatric, and home aides. Nearly three quarters of these occupations are found in long term care and that is the sector that has experienced the most rapid workforce growth. Figure 5 shows an increase of nearly 180 percent over the decade. These occupations show far less growth in the general care sector, in fact, growth in that sector parallels that of the workforce of other non-healthcare, service occupations. Figure 6, however, complicates the picture. Earnings for all service occupations have been in steep decline since 2000 and the earnings of nursing, psychiatric, and home aides in long term care have declined the most. At the same time, unemployment in these occupations has increased somewhat more than in other, non-healthcare service occupations. In 2010, the 11 percent unemployment rate of nurse and home aids in long term care rivals the 11 percent of other service work occupations. Nurse and home aids in general care have an unemployment rate about half that, nevertheless, that rate is 57 percent greater than it was in the year 2000. It appears that even as the relative

supply of nurse and home aids in long term care has increased, as indicated by the care ratio and smartly growing workforce numbers, their earnings are falling as they are in several other sectors of the U.S. economy. Given these trends it is as difficult to conclude that shortages exist in these occupations, at least in long term care, but if they do exist the market signals are all wrong.

## FIGURES 5 & 6

### SUMMARY OF FINDINGS

This analysis is both too detailed in terms of the challenge of comparing so many occupational classes, yet it is not detailed enough in terms of occupational specialties or regional conditions. It yields, nevertheless, some clear observations.

There is a double bar bell distribution of the healthcare workforce: immigrant women are slightly more likely than natives to be employed in long term care; and immigrants are most concentrated both among professional practitioners and the least skilled direct care, service workers. It is in these segments of the healthcare workforce that immigrant contributions are greatest and which show the greatest disparities.

The rate of growth of the foreign-born workforce has been roughly twice that of the native workforce. The proportional contribution, however, of immigrants to the growth of the total workforce has been only about one-third that of the native contribution. Furthermore, the foreign-born percentage of healthcare occupations has increased only slightly over the decade and, except for practitioners and direct care workers, immigrants are under-represented in most healthcare occupations. So the foreign-born play an important but not a central role in this sector of the national economy.

The foreign born are very similar to natives in terms of their average age, education and the dominance of most occupations by women. They differ in terms of being much more likely than natives to reside in metropolitan areas and in their central cities. This residential variance is similar to that of the native and foreign populations generally, but it has

unexplored implications for the role immigrants play in addressing regional shortages and disparities in healthcare provision.

The foreign born in healthcare earn more than natives and this appears to be both statistically significant and inexplicable by way of differences in experience or education. Consider by way of comparison that immigrants in science and engineering (S&E) also earn more than natives, but after controlling for their completion of more years of schooling, immigrants in S&E tend to earn less than otherwise similar natives. Foreign-born earnings may be higher in healthcare as they work longer hours and more weeks than natives; in turn, that may be correlated with unobserved lower rates of turnover or more employer-specific experience. Of course, the earnings of direct care workers, particularly in long term care, are very low on average (Stone 2011).

Shortage indicators do not paint a clear picture of national shortages in broadly defined healthcare occupations, just the opposite. The ratios of healthcare workers to population have steadily increased over the decade, substantially for nurse and other home, service aides. Notable increases were also seen in the ratios of registered nurses and licensed nurses in long term care. Workforce growth in these occupations, especially in long term care, has outstripped that of comparable occupations which is one indicator of possible shortages. Yet, earnings growth for nurses has been flat since 2004 while their unemployment in long term care is substantial and has increased in parallel with other professions. The earnings of nurse and other home, service aides fell sharply over the decade in line with other service occupations.

## **CONCLUSIONS**

The summary above mostly answers the questions that motivated this analysis. It is perhaps not surprising that long term care has been so dynamic and that immigrants' greatest role is in this lower pay sector. And it has long been known that the foreign born are a substantial percentage of the workforce of both practitioners and direct care workers, and that they are not over represented in the case of nurses. Nor for that matter are the foreign born strongly represented

among technicians or service workers in healthcare. However, there are a couple of implications that can be drawn from these basic factors when coupled with the finding that there do not appear to be national shortages; or at least that this labor market is “soft.”

Most all of the recent Congressional debate over immigration and healthcare has focused on nurses and that concern is focused on shortages in hospital settings. Yet the greatest demand for immigrant nurses, both registered and licensed, appears to be in long term care settings. Of course, most of the nurses admitted into the United States tend to be the more educated registered nurses for whom existing visas are most appropriate. The strong workforce growth in long term care settings is consistent with the observation that the last decade has seen the entry of the large baby boom generation into retirement. That retirement wave will continue, so what role is there in immigration policy to address that challenge? It would seem inappropriate at this time to set aside special visas or to markedly increase the number of nurses because the findings here, and that of others expert on the issue, is that there are no current shortages especially now with the lingering effects of the recession.

In the case of direct long-term care, i.e., nursing, psychiatric and home aides; and personal care service and aides, the exceptionally fast growth of these occupations makes an understanding of these front-line workers of great importance. There is a lack of existing visas that target such workers. It has been the case historically that the U.S. has opted to not import lesser skilled workers for the purpose of employment because such workers directly compete with low-wage, vulnerable domestic workers. If there is, of course, a looming shortage of direct care workers in the future then it might be prudent to fashion a pathway to admission. Should such visas be temporary, as is the case for seasonal agricultural and non-agricultural workers? Or should permanent visas be readily available? Because of the nature of long term care, it may seem that temporary visas are not in the best interest of elderly patients. Yet, one or even two year visas might be appropriate in settings such as nursing homes with their dedicated staff. A temporary work visa for immigrants in homes would seem to be inappropriate unless it permitted extensions of stay or a transition to permanency. Mostly it would seem unnecessary to set aside special visas because it must be the case that the bulk of immigrants are supplied via visas for family



reunification. Future flows of family immigrants will remain strong and, that being the case, visas for direct care workers would compete head to head with newly admitted family migrants.

## REFERENCES

American Heart Association, 2011. “Heart Disease and Stroke Statistics—2011 Update,” *Circulation*, 123: e18-e209.

Ariel Ducey, 2008. *Never Good Enough: Health Care Workers and the False Promise of Job Training*, Cornell University Press.

American Association of Colleges of Nursing, 2011. “Joint Statement from the Tri-Council on Recent Registered Nurse Supply and Demand Projections,” [www.acn.nche.edu/media-relations/fact-sheets](http://www.acn.nche.edu/media-relations/fact-sheets).

Auerbach, David I., Peter I. Buerhaus and Douglas O. Staiger, 2011 “Registered Nurse Supply Grows Faster Than Projected Amid Surge in New Entrants Ages 23–26,” *Health Affairs*, 30(12): 2286-2292.

Auerbach, David I., Peter I. Buerhaus and Douglas O. Staiger, 2012. “Registered Nurse Labor Supply and the Recession—Are We in A Bubble?” *The New England Journal of Medicine*, 366(16): 1463-1465.

Bakhtiari , Elyas, 2009. “What Physician Shortage?” *Health Leaders Media*, May 28.

Bureau of Health Professions, 2006. *Physician Supply and Demand: Projections in 2020*. Washington, D.C.: Health Resources and Services Administration.

Buerhaus, Peter I., Douglas O. Staiger and David I. Auerbach, 2000. “Implications of an Aging Registered Nurse Workforce,” *JAMA*, 283(22):2948-2954.

Buerhaus, Peter I., Douglas O. Staiger and David I. Auerbach, 2003. “Is the Current Shortage of Hospital Nurses Ending?” *Health Affairs*, 22(6): 191-198.

Buerhaus, Peter I., Douglas O. Staiger and David I. Auerbach, 2009. “The Recent Surge in Nurse Employment: Causes and Implications,” *Health Affairs* (Web Exclusive June 12, 2009, w657-668).

Committee on the Future Health Care Workforce for Older Americans, Institute of Medicine, 2008. *Retooling for an Aging America: Building the Health Care Workforce*, Washington, DC: National Academy of Sciences.

- Grumbach, Kevin, Michael Ash, Jean Ann Seago, Joanne Spetz, Janet Coffman, 2001. "Measuring Shortages of Hospital Nurses: How do You Know a Hospital with a Nursing Shortage When You See One?" *Medical Care Research Review*, 58(4): 387-403.
- Grumbach, Kevin, 2002. Fighting hand to hand over physician workforce policy. *Health Affairs*, 21(5): 13-27.
- IOM (Institute of Medicine), 2008. *Retooling for an Aging America: Building the Health Care Workforce*, National Academy of Sciences, <http://www.nap.edu/catalog/12089.html>
- Johnson, Toni, 2012. "Healthcare Costs and U.S. Competitiveness," Council on Foreign Relations, <http://www.cfr.org/health-science-and-technology/healthcare-costs-us-competitiveness/p13325>.
- Lowell, B. Lindsay and Sefka Gerova, 2004. "Immigrants and the Healthcare Workforce: Profiles and Shortages," *Work and Occupations*, 34- (4): 478-498.
- Lowell, B. Lindsay, Susan Martin, Robyn Stone, 2010. "Ageing and Care Giving in America: Policy Contexts and the Immigrant Workforce," *Journal of Population Aging*, 3 (1): 59-82.
- Millonig, Virginia Laying, 1988. "The Nursing Shortage: Is There a Solution?" *Journal of Pediatric Health Care*, 2(4): 189-194.
- Passel, Jeffrey and D'Vera Cohn, 2011. "Unauthorized Immigrant Population: National and State Trends, 2010," Pew Hispanic Center, <http://www.pewhispanic.org/files/reports/133.pdf>.
- Passel, Jeffrey and D'Vera Cohn, 2009. "A Portrait of Unauthorized Immigrants in the United States," Pew Hispanic Center, <http://www.pewhispanic.org/files/reports/107.pdf>.
- Pew Health Professions Commission, 1995. *Critical challenges: Revitalizing the health professions for the twenty-first century*. San Francisco, CA: University of California at San Francisco, Center for the Health Professions.
- Prescott, P., 2000. The Enigmatic Nursing Workforce, *Journal of Nursing Administration*, 30 (2): 59-65.
- Spencer, Sarah; Susan Martin, Ivy Lynn Bourgeault and Eamon O'Shea, 2010. *The Role of Migrant Care Workers in Ageing Societies: Report on Research Findings in the United Kingdom, Ireland, Canada and the United States*, Geneva: International Organization for Migration, Migration Research Series No. 41, <http://publications.iom.int/bookstore/free/MRS41.pdf>
- Spetz, Joanne, 2004. "Hospital Nurse Wages and Staffing, 1977 to 2002: Cycles of Shortage and Surplus," *Journal of Nursing Administration*, 34(9): 415-422.
- Stone, Robyn I., 2011. "Foreign-Born Direct Care Workers in the United States:

Lessons for Japan,” Pages 114 to 129 in Global Policy Initiative (ed.) *Implications of Global Aging and Health for Immigration: Toward Accepting Immigrants and Foreign Workers Better-Cases of the U.S. and Japan*, <http://www.gpi-japan.net/project/373/>.

Ulrich, Beth, Peter I. Buerhaus, Karen Donelan, Linda Norma, Robert Dittus, 2005. “How RNs View the Work Environment: Results of a National Survey of Registered Nurses.” *Journal of Nursing Administration*, 35(9): 389-396.

U.S. Census Bureau, n.d. Current Population Survey Data on the Foreign-Born Population, <http://www.census.gov/population/foreign/data/cps.html>.

Zywia, Walt, 2010. U.S. “Healthcare Workforce Shortages: HIT Staff,” Global Institute for Emerging Healthcare Practices.

**Table 1. The size, percentage distribution and growth of healthcare occupations by nativity, 2001 to 2009**

Workforce by nativity	Occupation								
	Total	Health practi- tioners	Regis- tered nurses	Licensed nurses	Therapist & other treating	Techs & other diagnos- ing & treating	Health support therapists , assistants	Nursing, psyc., & home aides	Personal care service & aides
Workforce									
2001	7,675,362	1,081,298	1,968,555	532,080	372,574	532,080	372,574	1,666,426	310,684
Natives %	85.7	79.9	88.0	91.1	89.8	91.1	89.8	81.4	78.8
Foreign %	14.3	20.1	12.0	8.9	10.2	8.9	10.2	18.6	21.2
Workforce									
2009	10,489,682	1,310,397	2,538,638	621,825	547,232	621,825	547,232	2,199,707	911,075
Natives %	83.0	77.3	85.4	88.4	88.6	88.4	88.6	79.2	76.0
Foreign %	17.0	22.7	14.6	11.6	11.4	11.6	11.4	20.8	24.0
Growth of native- and foreign-born workforce 2001-2009 %									
Native born	32.4	17.3	25.1	13.4	44.9	27.8	37.7	28.6	183.0
Foreign born	62.0	36.7	57.2	52.7	64.3	59.0	71.4	47.0	231.3
Contribution to total growth by nativity 2001-2009%									
Native born	75.8	65.1	76.3	72.2	86.0	80.9	81.1	72.6	74.6
Foreign born	24.2	34.9	23.7	27.8	14.0	19.1	18.9	27.4	25.4

Source: Author's tabulations of U.S. Census data, see methods section and Ruggles et al. 2010.

Note: Three years of data are averaged, so results are centered on "2001" and "2009."

**Table 2. Distribution of occupations by industry and nativity and the foreign-born share of the occupation-industry workforce, 2009**

Occupation	General care			Long term care			
	Total	Hos- pitals	Practi- tioners & Out- patient	Nurs- ing care	Resi- dential care, no nurses	Home & other health- care service	Family & house- holds
Foreign-born distribution across industries, %							
<b>Native born</b>	<b>100</b>	<b>39.7</b>	<b>23.7</b>	<b>13.1</b>	<b>2.9</b>	<b>15.9</b>	<b>4.8</b>
Health practitioners	100	36.7	56.6	1.2	0.2	4.9	0.3
Registered nurses	100	69.4	11.6	7.8	0.4	10.1	0.6
Licensed nurses	100	32.4	17.1	33.3	1.4	14.6	1.2
Therapist & other treating	100	41.1	34.3	6.1	3.3	11.0	4.1
Techs & other diagnosing &	100	50.9	28.1	1.5	0.5	18.8	0.2
Health support therapists,	100	22.3	59.8	6.8	1.4	9.3	0.4
Nursing, psyc., & home aides	100	23.3	5.4	36.0	4.2	27.3	3.8
Personal care service & aides	100	--	--	5.9	18.4	29.2	43.1
<b>Foreign born</b>	<b>100</b>	<b>37.8</b>	<b>18.6</b>	<b>13.0</b>	<b>2.6</b>	<b>19.4</b>	<b>8.6</b>
Health practitioners	100	44.7	48.5	0.7	0.3	5.6	0.2
Registered nurses	100	72.9	6.1	9.5	0.4	10.3	0.7
Licensed nurses	100	33.9	9.0	38.9	1.4	15.2	1.5
Therapist & other treating	100	36.7	35.1	7.5	4.4	14.1	2.2
Techs & other diagnosing &	100	58.2	20.4	1.5	0.5	19.3	0.1
Health support therapists,	100	21.6	62.4	5.2	1.2	9.2	0.4
Nursing, psyc., & home aides	100	20.9	3.1	30.0	2.6	36.6	6.8
Personal care service & aides	100	--	--	6.2	11.6	27.6	52.7
Foreign-born share within occupation-industry, %							
<b>Foreign born</b>	<b>17.0</b>	<b>16.3</b>	<b>13.8</b>	<b>16.8</b>	<b>15.2</b>	<b>20.0</b>	<b>27.0</b>
Health practitioners	22.7	26.4	20.1	14.5	24.0	25.3	15.4
Registered nurses	14.6	15.3	8.3	17.3	13.9	14.8	17.9
Licensed nurses	11.6	12.1	6.5	13.4	11.9	12.1	13.7
Therapist & other treating	11.4	10.3	11.7	13.6	14.4	14.2	6.6
Techs & other diagnosing &	12.2	13.7	9.2	12.6	10.9	12.5	6.7
Health support therapists,	13.2	12.9	13.7	10.5	11.3	13.2	12.8
Nursing, psyc., & home aides	20.8	19.0	13.2	17.9	13.8	26.0	31.8
Personal care service & aides	24.0	--	--	25.1	16.6	23.0	27.8

Source: Author's tabulations of U.S. Census data, see methods section and Ruggles et al. 2010.

Note: Three years of data are averaged, so results are centered "2009." Figures for small cell size counts are not shown (marked --).

**Table 3. Demographic characteristics of healthcare workers by nativity and sector, 2009**

Occupations by industry and nativity	Age, (mean)	Years of Education (mean)	Female, %	Metro residence, %	Central city residence, %	Speaks English only or very well, %	Naturalized Citizen, %	Immigrated last 10 years, %
General care								
<b>Native born</b>	<b>41.2</b>	<b>14.6</b>	<b>75.6</b>	<b>80.9</b>	<b>16.3</b>	<b>99.0</b>	--	--
Health practitioners	41.2	17.6	37.5	88.6	18.2	99.1	--	--
Registered nurses	43.5	15.2	91.5	82.9	11.8	99.4	--	--
Licensed nurses	43.6	13.0	93.9	72.2	11.9	99.3	--	--
Therapist & other treating	41.2	16.3	75.1	86.3	15.0	99.4	--	--
Nursing, psyc., & home aide	38.0	12.8	82.1	80.1	19.0	98.7	--	--
Personal care service & aides	39.8	12.8	73.4	75.3	21.8	98.5	--	--
<b>Foreign born</b>	<b>43.9</b>	<b>14.6</b>	<b>70.8</b>	<b>96.5</b>	<b>25.8</b>	<b>75.3</b>	<b>65.0</b>	<b>24.1</b>
Health practitioners	45.2	17.7	40.4	95.4	23.1	87.6	72.3	20.7
Registered nurses	44.0	15.6	87.4	97.2	22.5	84.1	71.7	24.4
Licensed nurses	44.1	13.1	87.0	96.1	27.6	78.7	68.7	23.3
Therapist & other treating	42.5	16.1	62.7	96.5	24.0	79.7	64.7	23.4
Nursing, psyc., & home aide	43.2	12.8	79.6	97.1	30.2	64.4	64.1	26.5
Personal care service & aides	44.1	12.5	67.9	96.8	27.6	57.3	48.6	26.5
Long term care								
<b>Native born</b>	<b>43.0</b>	<b>14.3</b>	<b>82.5</b>	<b>78.5</b>	<b>15.2</b>	<b>98.9</b>	--	--
Health practitioners	45.3	16.8	53.5	87.5	16.1	98.6	--	--
Registered nurses	46.6	15.0	91.5	78.7	11.4	99.4	--	--
Licensed nurses	43.1	12.9	93.5	72.0	13.2	99.4	--	--
Therapist & other treating	41.5	16.3	79.3	86.4	14.6	99.4	--	--
Nursing, psyc., & home aide	39.0	12.2	91.3	71.6	18.4	98.4	--	--
Personal care service & aides	42.6	12.3	86.0	75.0	17.7	98.0	--	--
<b>Foreign born</b>	<b>44.2</b>	<b>14.2</b>	<b>77.4</b>	<b>96.7</b>	<b>27.3</b>	<b>70.0</b>	<b>60.0</b>	<b>27.6</b>
Health practitioners	44.8	17.1	49.3	96.4	22.6	84.6	72.0	19.2
Registered nurses	45.1	15.4	85.1	97.7	23.2	78.4	65.1	27.8
Licensed nurses	42.6	13.2	84.4	96.8	23.9	76.0	64.5	26.7
Therapist & other treating	40.5	16.1	69.5	96.8	20.3	85.8	61.1	27.8
Nursing, psyc., & home aide	45.4	11.8	90.1	96.6	41.9	52.8	50.8	31.9
Personal care service & aides	46.7	11.4	86.1	96.2	32.1	42.5	46.5	32.3

Source: Author's tabulations of U.S. Census data, see methods section and Ruggles et al. 2010.

Note: Three years of data are averaged, so results are centered on "2009." These data exclude central city residence "unknown," but otherwise reliably reflect differences across demographic groups in terms of central city residence.

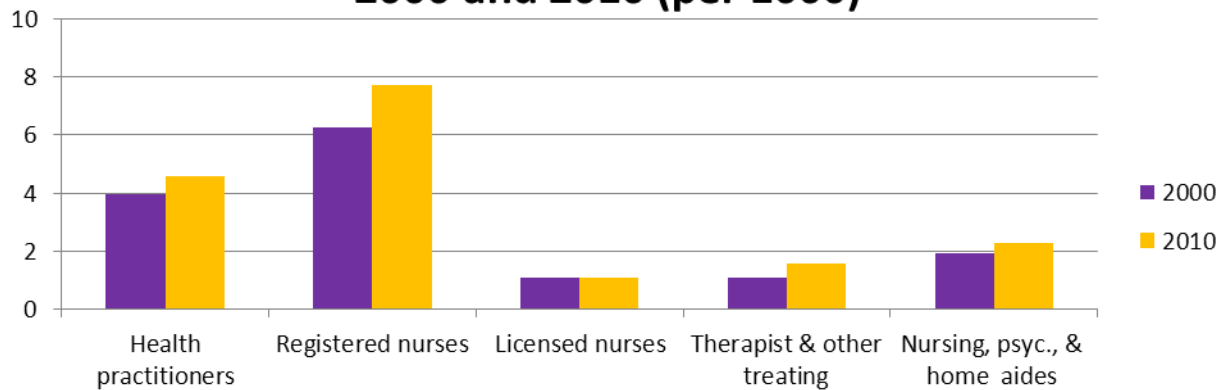
**Table 4. Labor force characteristics of healthcare workers by nativity and sector, 2009**

Occupations by sector and nativity	Weekly earnings, (mean)	Unem-ployed, %	Usual hours worked per week, (mean)	Full time hours (>=35), %	Weeks worked, (mean)	Health-care insured by employer or union, %	Self-employ-ed, %
General care							
<b>Native born</b>	<b>1167.7</b>	<b>2.9</b>	<b>37.9</b>	<b>75.7</b>	<b>47.8</b>	<b>78.7</b>	<b>8.4</b>
Health practitioners	3,059	0.8	46.2	83.3	49.1	76.4	33.8
Registered nurses	1,158	1.1	36.8	75.5	48.9	92.0	0.1
Licensed nurses	731	2.7	37.3	79.6	48.6	84.2	0.0
Therapist & other treating	1,069	1.3	36.5	72.7	48.2	84.6	13.8
Nursing, psyc., & home aide	529	5.2	35.6	73.1	46.9	75.2	0.0
Personal care service & aides	459	6.4	35.3	69.7	45.6	59.7	2.9
<b>Foreign born</b>	<b>1302.3</b>	<b>2.4</b>	<b>39.5</b>	<b>82.1</b>	<b>48.3</b>	<b>78.5</b>	<b>8.5</b>
Health practitioners	3,134	1.0	48.6	88.9	49.1	78.5	29.1
Registered nurses	1,428	1.0	38.8	85.1	49.0	92.1	0.0
Licensed nurses	905	1.6	39.0	86.8	49.0	80.6	0.0
Therapist & other treating	1,227	1.5	37.8	77.8	47.7	77.0	19.4
Nursing, psyc., & home aide	643	3.0	37.9	82.2	48.1	79.2	0.0
Personal care service & aides	478	6.1	34.7	71.7	47.0	63.5	2.7
Long term care							
<b>Native born</b>	<b>1020.7</b>	<b>4.9</b>	<b>36.8</b>	<b>70.3</b>	<b>46.7</b>	<b>67.0</b>	<b>5.8</b>
Health practitioners	2,519	1.4	42.8	81.1	48.5	82.6	12.6
Registered nurses	1,053	2.8	38.0	76.1	47.7	82.3	0.1
Licensed nurses	730	4.2	37.1	74.4	47.3	69.6	0.0
Therapist & other treating	1,053	1.6	36.4	71.5	48.0	82.2	7.3
Nursing, psyc., & home aide	418	9.6	34.2	64.8	44.9	46.5	3.9
Personal care service & aides	351	10.0	32.4	54.2	43.9	38.6	11.2
<b>Foreign born</b>	<b>1179.9</b>	<b>3.5</b>	<b>38.8</b>	<b>76.6</b>	<b>47.3</b>	<b>66.8</b>	<b>6.1</b>
Health practitioners	2,892	1.9	45.1	88.9	48.6	85.1	10.9
Registered nurses	1,206	2.3	39.1	82.8	47.9	78.9	0.0
Licensed nurses	848	2.2	38.6	78.5	47.6	70.8	0.0
Therapist & other treating	1,257	0.8	39.0	79.1	48.2	78.3	8.5
Nursing, psyc., & home aide	495	5.6	36.8	72.8	46.3	52.1	4.6
Personal care service & aides	381	8.3	34.1	57.7	45.0	35.7	12.6

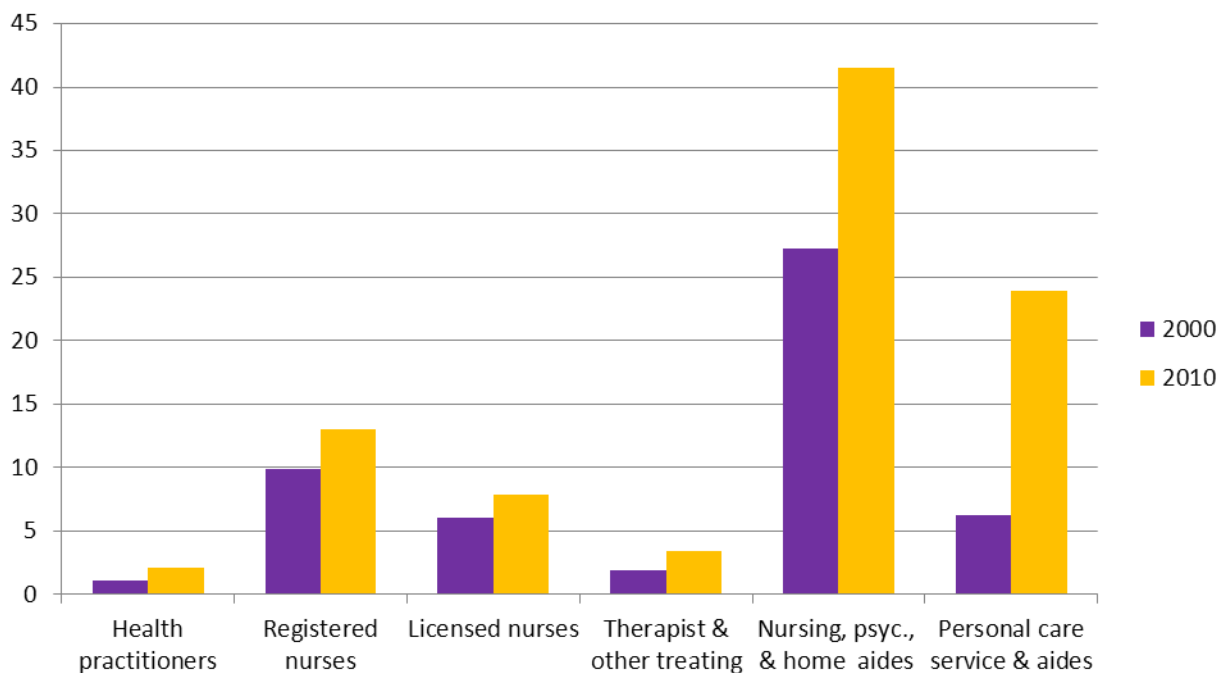
Source: Author's tabulations of U.S. Census data, see methods section and Ruggles et al. 2010.

Note: There years of data are averaged, so results are centered on "2009."

**Figure 1. Ratio of workforce in general healthcare to the population 1 to 64 years of age, 2000 and 2010 (per 1000)**

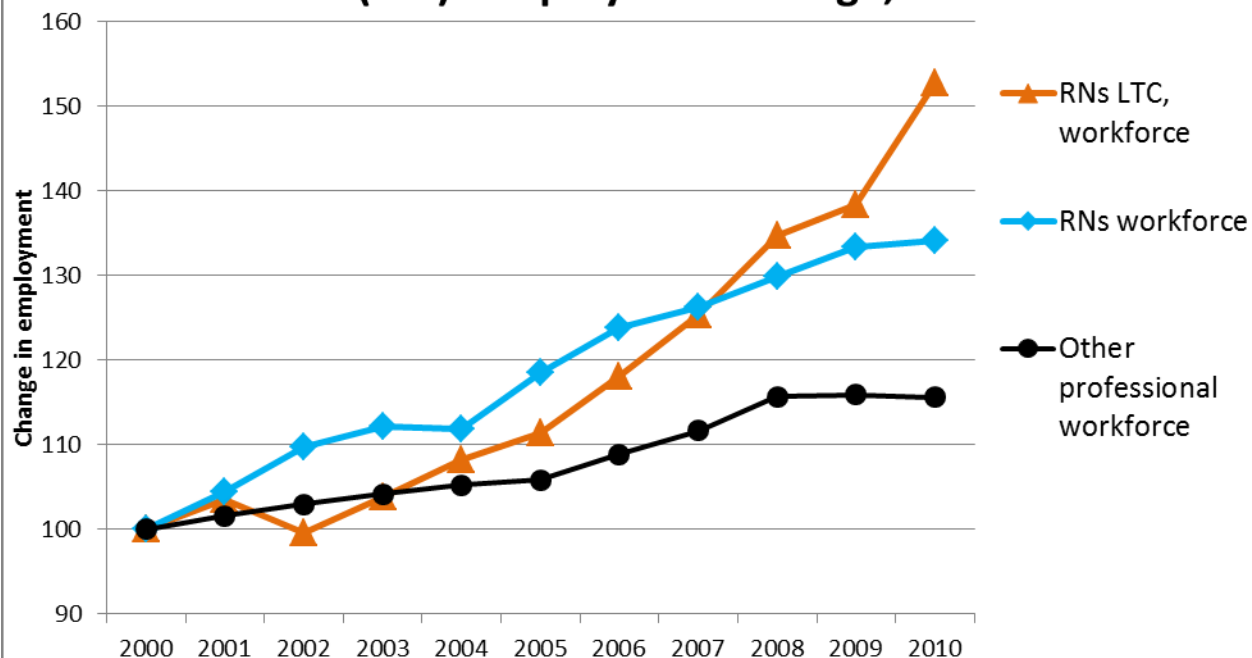


**Figure 2. Ratio of workforce in long term healthcare to the population 65 years and older, 2000 and 2010 (per 1000)**

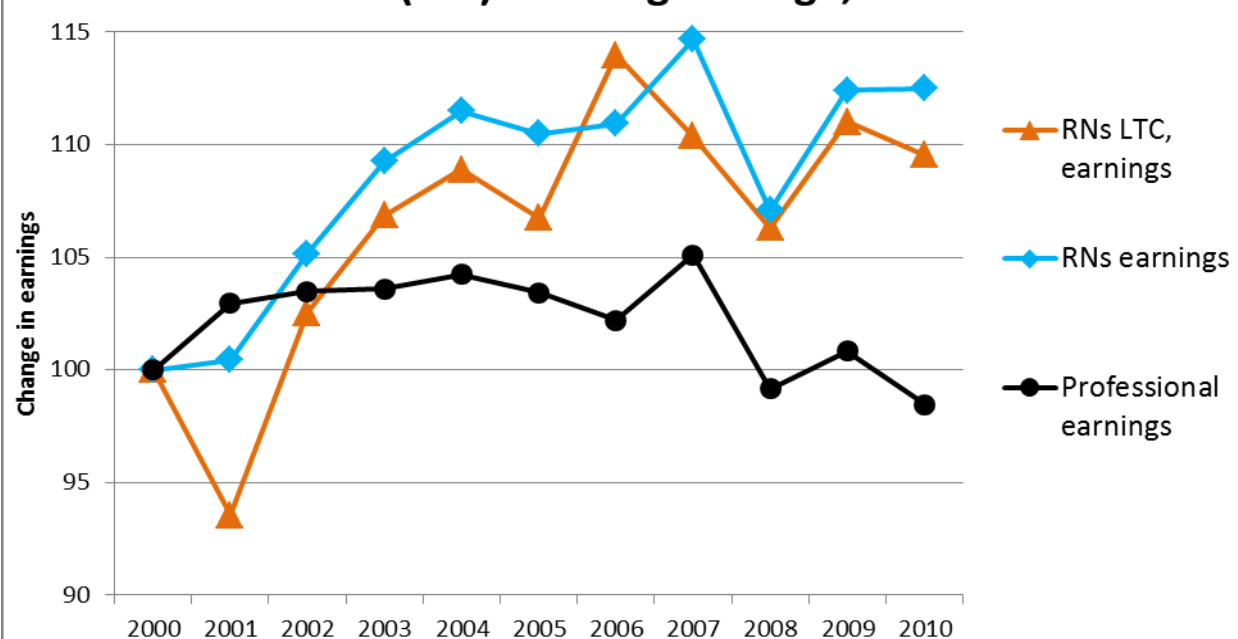




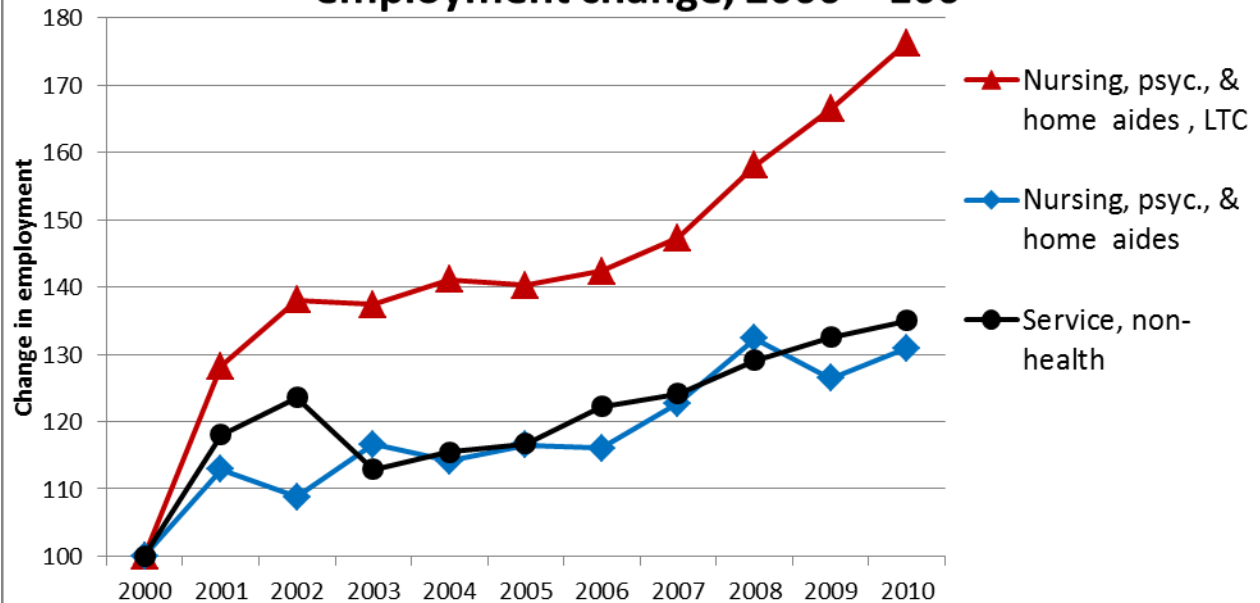
**Figure 3. Registered nurses in general and long-term care (LTC): employment change, 2000 = 100**



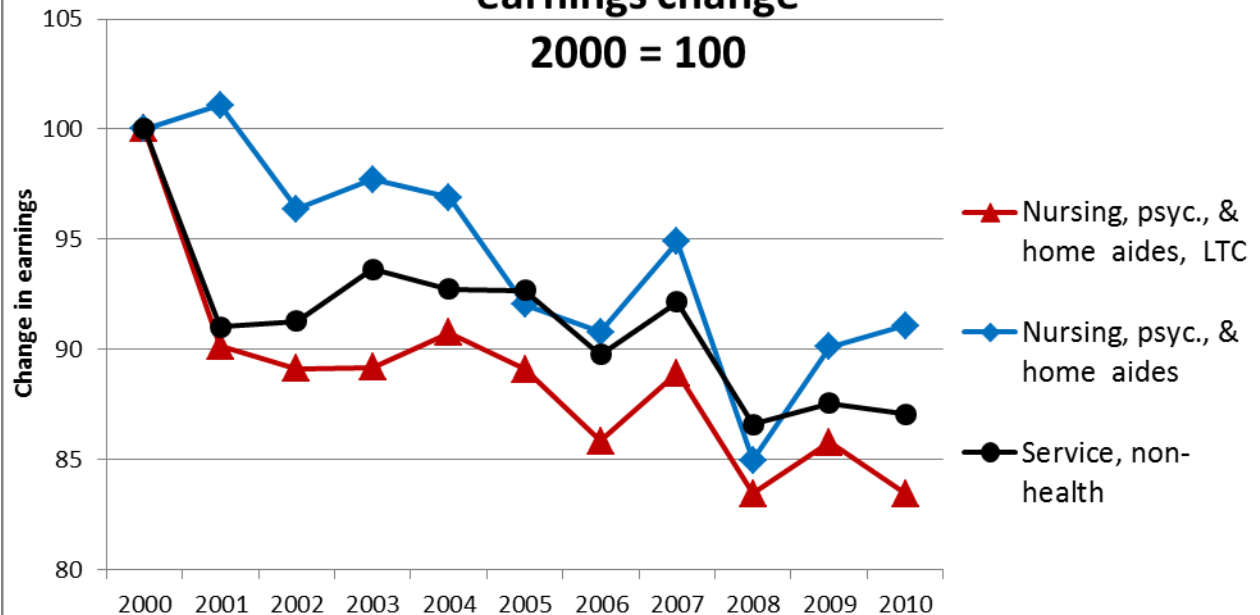
**Figure 4. Registered nurses in general and long-term care (LTC): earnings change, 2000 = 100**



**Figure 5. Nursing, psychiatric, and home health aides in general and long-term care (LTC): employment change, 2000 = 100**



**Figure 6. Nursing, psychiatric, and home health aides in general and long-term care (LTC): earnings change 2000 = 100**



**Appendix Table 1. Ratio of all healthcare providers to population 2000 to 2010 (1000s)**

Occupations by sector	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>General healthcare, workers and population 1 to 64 years of age</b>											
Health practitioners	4.0	4.3	4.4	4.6	4.5	4.6	4.5	4.5	4.6	4.6	4.6
Registered nurses	6.3	6.6	6.9	7.0	6.9	7.2	7.3	7.4	7.6	7.7	7.7
Licensed nurses	1.1	1.3	1.3	1.4	1.2	1.2	1.2	1.2	1.2	1.1	1.1
Therapist & other treating	1.1	1.2	1.3	1.4	1.5	1.5	1.4	1.5	1.5	1.5	1.6
Nursing, psyc., & home aides	1.9	2.2	2.1	2.2	2.1	2.2	2.1	2.2	2.3	2.2	2.3
Personal care service & aides	--	--	--	--	--	--	--	--	--	--	--
<b>Long term care, workers and population 65 years of age and older</b>											
Health practitioners	1.1	1.7	1.3	1.6	1.7	1.8	1.7	2.0	2.3	2.3	2.1
Registered nurses	9.9	10.7	10.2	10.5	10.9	11.0	10.9	11.4	12.0	12.1	13.0
Licensed nurses	6.1	6.9	7.4	7.9	7.9	8.2	7.9	8.0	8.1	8.1	7.9
Therapist & other treating	1.9	2.2	2.3	2.8	2.7	3.0	2.6	3.2	3.5	3.4	3.4
Nursing, psyc., & home aides	27.2	36.7	39.2	38.6	39.2	38.5	36.4	37.1	38.8	40.1	41.5
Personal care service & aides	6.3	9.5	10.4	13.8	15.0	16.8	18.7	18.7	20.3	22.7	23.9

Source: Author's tabulations of U.S. Census data, see methods section and Ruggles et al. 2010.