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Nursing and the Great Recession

This article uses data from the Occupational Employment Statistics survey to examine trends in labor market outcomes for registered nurses from 2002 to 2015. Special attention is paid to the 2007–10 period, which encompasses the Great Recession. The analysis reveals that nursing employment and wages increased during the recession, lending support to previous research suggesting that nursing is a recession-proof, countercyclical profession.

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The Great Recession, which began in December 2007 and ended in June 2009, had a devastating effect on the U.S. economy.[1] By October 2009, 10 percent of the American workforce was unemployed. Although the effects of this economic downturn were broad based, influencing employment and wages throughout the national economy, the aim of this article is to examine whether these trends affected job opportunities and pay for registered nurses.

As far back as 1992, a study by the U.S. Bureau of Labor Statistics (BLS) referred to the health care industry as "the real jobs machine."[2] More recently, BLS long-term employment projections have indicated a growth in all jobs of 6.5 percent over the 2014–24 period, with employment for registered nurses expected to increase by 16.0 percent.[3] Thus, the ongoing growth of healthcare-related industries and occupations has been part of our past and is expected to be with us for the foreseeable future.

Although much evidence exists to support the view that nursing is a recession-proof occupation—or even a countercyclical one in which job gains increase faster in recessionary periods than in non-recessionary periods[4]—that view is not universally held.[5] In addition, all previous studies of the effect of the Great Recession on nursing have focused exclusively on employment. However, the effect of the recession on wages has not been examined. Both employment and wages need to be considered to comprehensively assess the effect of the recession on the nursing profession.

This article attempts such an assessment by analyzing employment and wage data for the 2002–15 period, paying special attention to the years from 2007 to 2010, which provide insight into the trends that took place during the recession. Specifically, to achieve analytical detail, the article examines the following three questions, for both periods:

1. What general trends in employment and average wages occurred in both the national economy and the nursing profession? Were any differences in those trends observed?
2. Did specific occupational settings—that is, the industries in which nurses were employed—exert any influence on nursing employment and wages?
3. Did geographic location influence nursing employment and wages differently than it did employment and wages in the general regional economy?

The answers to these three questions should provide insights into how the nursing profession responded to the Great Recession.

Data

Data for this article are drawn from the BLS Occupational Employment Statistics (OES) survey. This semiannual mail survey measures occupational employment and wages for wage and salary workers in nonfarm establishments. OES estimates are constructed from a sample of about 1.2 million establishments throughout the United States, with sample frames set at the state and metropolitan area levels. The OES survey provides the most comprehensive data on occupational wages in the nation. (See technical note.)

OES occupations are classified under the Standard Occupational Classification (SOC) system. The SOC system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. This article focuses on the SOC category of registered nurses, which, until 2012, included not only registered nurses but also three advanced practice nursing occupations—nurse practitioners, nurse midwives, and nurse anesthetists. In 2012, these three categories were broken out into individual SOC codes for publication purposes. (See technical note.) In this article, starting with data for 2012, all four SOC categories (registered nurses, nurse practitioners, nurse midwives, and nurse anesthetists) were combined to maintain data consistency over time. As of 2015, registered nurses accounted for 94 percent of the combined category.

OES estimates are published annually, with May as a reference month. For this article, May 2007 and May 2010 OES estimates are used to cover the period of the Great Recession (December 2007–June 2009). This reference period is also used for metropolitan area analysis, because area definitions for other periods may be different. Although the article presents selected 2002–15 employment comparisons using OES data, these comparisons should be interpreted with caution, because OES data are not designed for making comparisons through time.[6] The OES wage data are based on a 3-year sample composed of six data panels of data collected twice a year). To synchronize wages across the panels, the analysis uses wages that are adjusted, or “aged,” forward to the reference date on the basis of the movements of the BLS Employment Cost Index for a broader group of occupations. The employment data also are based on the moving-average staffing pattern over the 3 years of data collected. For comparisons of the years 2007 and 2010, the 2007 data are based on 2005, 2006, and 2007 data

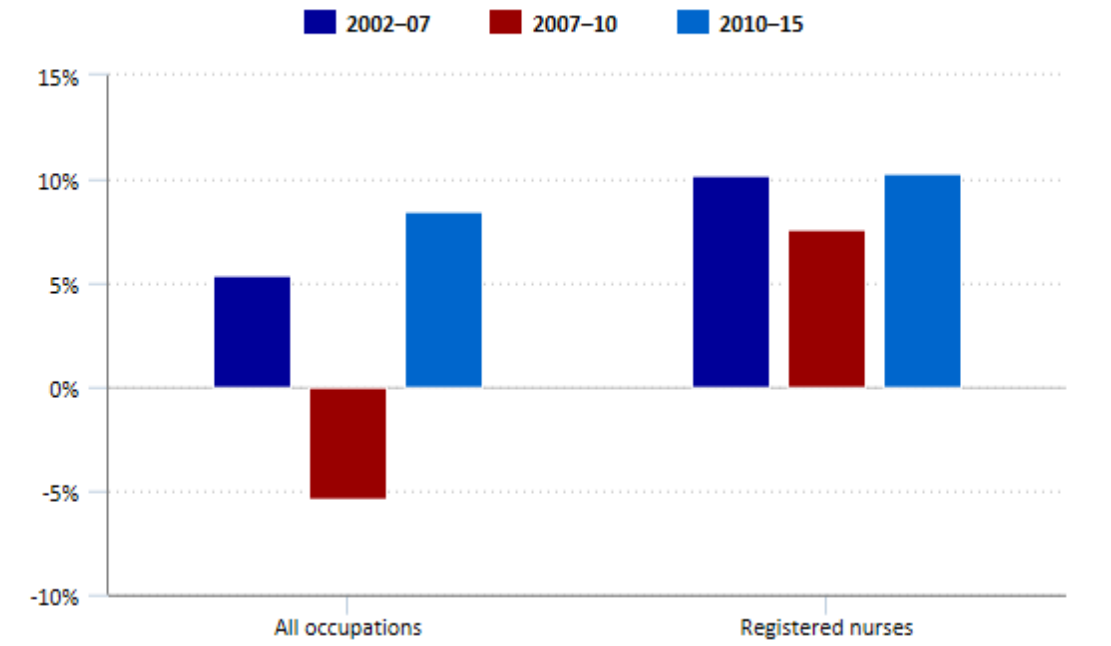
and the 2010 data are based on 2008, 2009, and 2010 data. As a result, the overlap between 3-year samples is minimized.

Nursing employment in the United States

During the 2002–15 period, employment of registered nurses across the nation increased by 689,280, or 30.8 percent. By contrast, over the same timeframe, the nation's economy added 10,372,900 jobs—a growth rate of 8.1 percent. Thus, during this 13-year period, 6.6 percent of net national job growth (about 1 out of every 15 new jobs) was due to the increase in registered nursing employment.

In the national economy, however, job growth was anything but steady. National employment increased by 6,830,490 (5.4 percent) between 2002 and 2007, decreased by 7,257,090 (−5.4 percent) between 2007 and 2010, and increased by 10,799,500 (8.5 percent) between 2010 and 2015. (See figure 1.)

Figure 1. Percent change in employment before, during, and after the Great Recession, registered nurses and all occupations, 2002–07, 2007–10, and 2010–15



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

In contrast to the uneven national job picture, employment growth among registered nurses was steady, averaging more than 50,000 new jobs each year between 2002 and 2015. This increase, coupled with the marked fluctuation in national employment, affected the national job picture. In 2002, jobs for registered nurses represented 1.8 percent of the national job base. By 2015, this percentage had reached more than 2 percent, meaning that about 2 out of every 100 jobs in the country were in registered nursing.

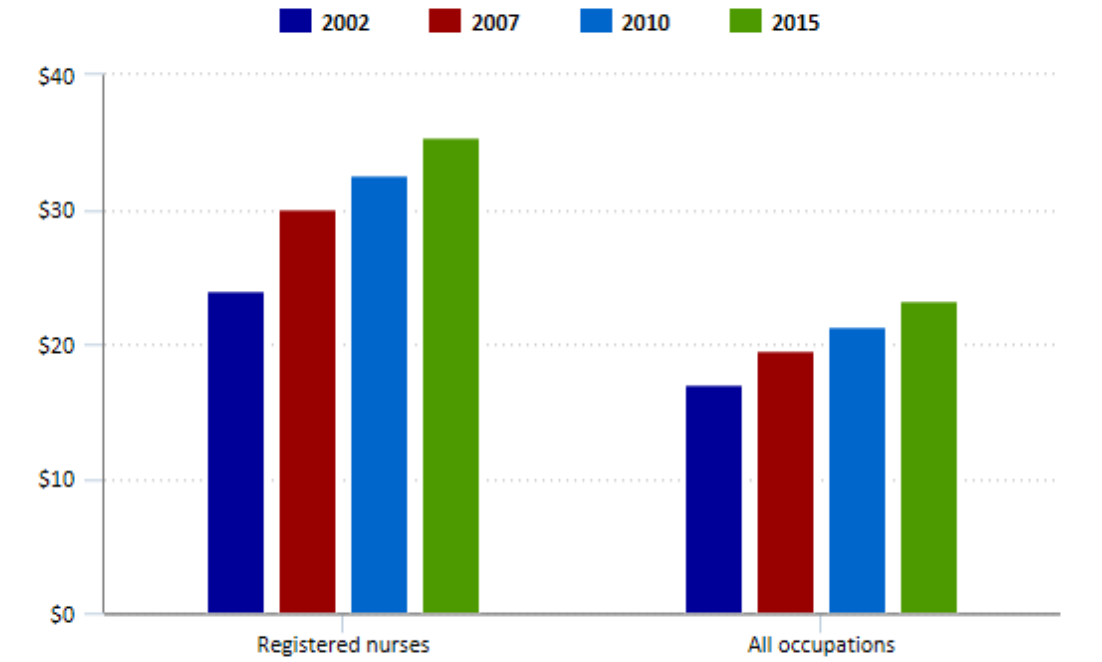
As noted earlier, focusing only on the recessionary years between 2007 and 2010, which encompasses the Great Recession, suggests that the national economy lost 7,257,090 million jobs—an employment decline of 5.4 percent.

By contrast, employment of registered nurses moved in the opposite direction, increasing by 186,680, or 7.6 percent, over the same period.

Nursing wages in the United States

A look at employment reveals only a partial picture of labor market outcomes, because it sidelines the impact of the recession on overall wages. During the 2002–15 period, average wages increased both in the nursing profession and in the national economy. (See figure 2.)

Figure 2. Average hourly wages, registered nurses and all occupations, 2002, 2007, 2010, and 2015



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

In 2002, the mean wage for registered nurses was $23.97 hourly ($49,858 yearly). By 2015, this wage had increased by 47.8 percent, to $35.42 hourly ($73,674 yearly). Over the same period, mean wages for all occupations increased by 35.8 percent, from $17.10 to $23.23 hourly and from $35,568 to $48,318 yearly. It should be noted that, in 2002, the average yearly wage for registered nurses in the nation was 40.2 percent higher than the average wage in the general economy. By 2015, this difference had increased to 52.5 percent.

Examining the effect of the recessionary years on average wages suggests that wage increases took place both in the national economy and in registered nursing. For nursing, the average wage in 2007 ($30.04 hourly, $62,483 yearly) increased 8.4 percent by 2010 ($32.56 hourly, $67,725 yearly). For the nation as a whole, the wage increase during the same period was 9.2 percent—from $19.56 hourly ($40,685 yearly) to $21.35 hourly ($44,408 yearly).

Thus, at the beginning of the Great Recession in 2007, wages for the average registered nurse were 53.6 percent higher than the wages for the average American worker. By 2010, this difference had remained largely unchanged, at 52.5 percent.

Occupational settings for registered nurses: industries

To gain a more refined perspective of the effect of the Great Recession on registered nursing, the analysis in this section examines, in detail, the aforementioned trends as they relate to the specific occupational settings, or industries, in which registered nurses were employed. Focusing on these industries aims to reveal what changes occurred in nursing employment and wages during the 2002–15 and 2007–10 periods.

In 2002, the number of registered nurses employed in the nation was 2,239,530. As noted earlier, by 2015, this number had increased by 30.8 percent, to 2,928,810. In 2002, five distinct industries—general medical and surgical hospitals, offices of physicians, nursing care facilities, home health care services, and employment services[7]—provided employment for 79.9 percent of all registered nurses in the nation, with general medical and surgical hospitals accounting for 57.1 percent of these positions. By 2015, the employment contribution of the five industries had remained roughly unchanged, at 78.5 percent, with nursing employment in general medical and surgical hospitals also remaining steady, at 55.8 percent. However, as discussed below, employment opportunities and wages for registered nurses both increased notably. (See table 1 and figures 3, 4, and 5.)

Table 1. Employment and wages of registered nurses (RNs), and total employment, by industry, 2002–15

Year	All industries	General medical and surgical hospitals	Offices of physicians	Home health care services	Nursing care facilities	Employment services
Employment of RNs						
2002	2,239,530	1,278,460	201,580	114,950	126,920	67,020
2003	2,246,430	1,295,870	194,230	114,430	121,000	70,400
2004	2,311,970	1,325,550	205,300	114,870	119,860	75,430
2005	2,368,070	1,354,020	202,790	117,050	120,200	93,500
2006	2,417,150	1,373,610	209,260	124,470	122,990	95,490
2007	2,468,340	1,409,220	209,870	127,230	123,480	96,550
2008	2,542,760	1,458,520	218,110	130,860	124,590	91,980
2009	2,583,770	1,492,000	223,970	134,420	128,420	73,700
2010	2,655,020	1,521,400	232,000	146,380	134,460	70,400
2011	2,724,570	1,556,930	235,710	156,730	138,080	67,610
2012	2,779,650	1,584,420	247,840	165,230	141,150	59,990
2013	2,816,150	1,595,110	254,050	169,850	143,830	54,550
2014	2,850,060	1,604,800	264,150	172,060	150,240	50,710
2015	2,928,810	1,634,000	281,610	176,980	155,530	49,970
Mean hourly wages of RNs						
2002	$23.97	$24.31	$23.66	$23.38	$21.54	$27.66
2003	$24.63	$25.02	$23.93	$23.86	$22.44	$28.25
2004	$26.06	$26.54	$25.25	$24.91	$23.70	$30.55
2005	$27.35	$27.80	$27.03	$26.23	$24.76	$31.12
2006	$28.71	$29.31	$28.45	$27.31	$25.81	$31.36
2007	$30.04	$30.69	$29.68	$28.43	$27.12	$32.49

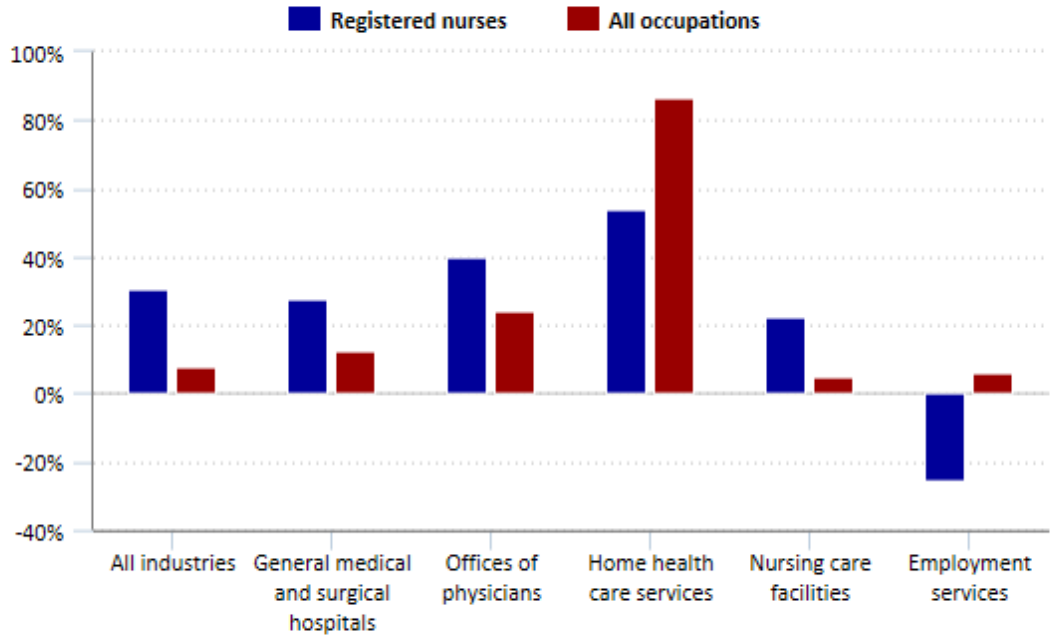
See footnotes at end of table.

Table 1. Employment and wages of registered nurses (RNs), and total employment, by industry, 2002–15

Year	All industries	General medical and surgical hospitals	Offices of physicians	Home health care services	Nursing care facilities	Employment services
2008	$31.31	$31.97	$31.28	$29.56	$28.06	$33.23
2009	$31.99	$32.57	$32.35	$30.43	$28.52	$33.71
2010	$32.56	$32.99	$33.91	$30.70	$28.84	$33.54
2011	$33.23	$33.56	$35.04	$31.31	$29.25	$34.01
2012	$33.62	$33.92	$36.10	$31.67	$29.50	$34.07
2013	$34.20	$34.51	$36.99	$32.38	$29.87	$34.43
2014	$34.68	$35.06	$37.82	$32.87	$30.08	$34.79
2015	$35.42	$35.76	$38.69	$33.24	$30.61	$34.94
Total employment						
2002	127,523,760	4,689,160	2,017,430	697,050	1,574,060	3,383,840
2003	127,567,910	4,714,720	1,994,670	711,360	1,564,540	3,298,700
2004	128,127,360	4,768,710	2,036,520	756,400	1,568,820	3,412,500
2005	130,307,840	4,826,410	2,079,650	806,460	1,576,680	3,537,170
2006	132,604,980	4,887,130	2,128,760	853,480	1,576,160	3,657,860
2007	134,354,250	4,973,020	2,178,920	906,360	1,594,500	3,662,860
2008	135,185,230	5,096,190	2,237,800	946,930	1,612,660	3,408,230
2009	130,647,610	5,174,240	2,272,040	1,007,670	1,637,750	2,686,190
2010	127,097,160	5,159,860	2,310,860	1,071,960	1,656,810	2,667,200
2011	128,278,550	5,193,650	2,344,170	1,125,670	1,669,140	2,950,610
2012	130,287,700	5,236,960	2,375,780	1,178,150	1,662,910	3,115,190
2013	132,588,810	5,271,310	2,420,040	1,212,360	1,656,760	3,277,580
2014	135,128,260	5,247,530	2,456,610	1,255,410	1,656,890	3,454,350
2015	137,896,660	5,275,360	2,509,450	1,298,940	1,653,320	3,580,700

Source: U.S. Bureau of Labor Statistics.

Figure 3. Percent change in employment, registered nurses and all occupations, by industry, 2002–15



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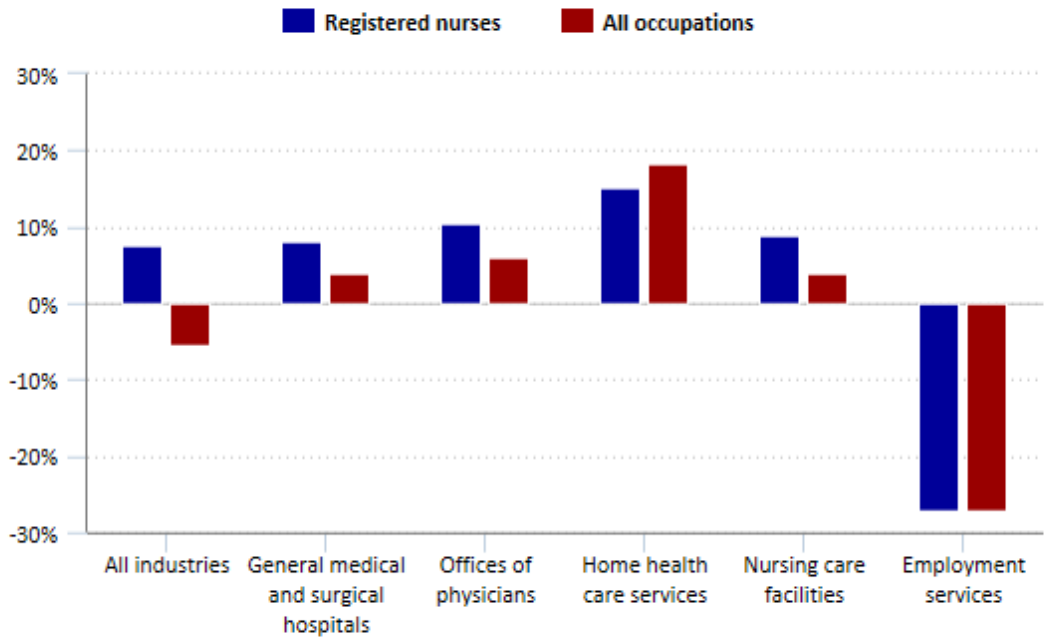
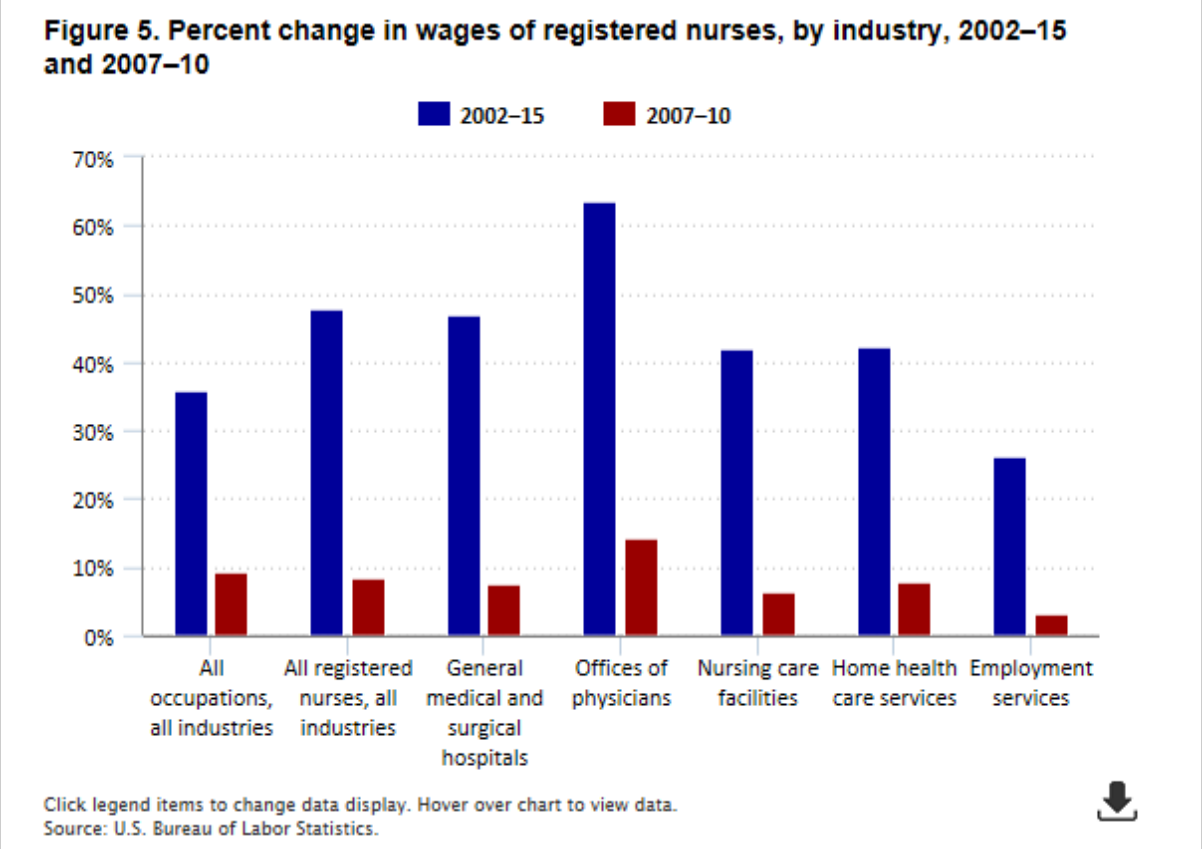
Source: U.S. Bureau of Labor Statistics.

Figure 4. Percent change in employment, registered nurses and all occupations, by industry, 2007–10



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.



General medical and surgical hospitals

Between 2002 and 2015, the number of employment opportunities for registered nurses in general medical and surgical hospitals—an industry including private hospitals and state and local government hospitals—increased by 355,540, from 1,278,460 to 1,634,000. This rise of 27.8 percent compares with a 12.5-percent increase in total general medical and surgical hospital employment over the same period. (See figure 3.) Benchmarking this increase to all registered nurses employment, this increase in hospital employment represented more than half (51.6 percent) of the total net increase in registered nursing employment during the 13-year period. (Net increases are used because employment rises in some industries and falls in others.)

Between 2007 and 2010, employment of registered nurses in the general medical and surgical hospitals sector increased by 112,180, from 1,409,220 to 1,521,400, a rise of 8.0 percent. (See figure 4.) These job increases accounted for 60.1 percent of all job increases in registered nursing during the recession.

Over the 2002–15 timeframe, average wages for registered nurses employed in general medical and surgical hospitals increased by 47.1 percent, from $24.31 hourly ($50,565 annually) to $35.76 hourly ($74,381 annually). (See figure 5.) This percent increase was comparable to the 47.8-percent wage increase noted for all registered nurses.

During the 2007−10 recessionary period, nursing wages in hospitals increased by 7.5 percent, from $30.69 hourly ($63,835 yearly) to $32.99 hourly ($68,619 yearly). In comparison, wages for registered nurses in all industries increased by 8.4 percent over the same period.

Offices of physicians

In terms of employment, the second-largest industry for registered nurses in 2002 was offices of physicians, which accounted for 9.0 percent of all registered nurses employment in that year. From 2002 to 2015, the number of jobs for registered nurses in the industry increased by 39.7 percent, rising from 201,580 to 281,610.

During the 2007−10 period, employment of registered nurses in offices of physicians continued to increase, rising 10.5 percent, from 209,870 to 232,000. The industry share of total registered nursing employment remained largely unchanged over the period—8.5 percent in 2007 and 8.7 percent in 2010.

From 2002 to 2015, wages for registered nurses in offices of physicians rose 63.5 percent, from $23.66 hourly ($49,213 yearly) to $38.69 hourly ($80,482 yearly). This percent increase exceeded the 47.1-percent increase for registered nurses in general medical and surgical hospitals and the 47.8-percent increase for all registered nurses.

Between 2007 and 2010, average wages for registered nurses in offices of physicians rose 14.3 percent, from $29.68 hourly ($61,734 yearly) to $33.91 hourly ($70,533 yearly). This percentage compares with 7.5 percent for registered nurses in general medical and surgical hospitals and 8.4 percent for all registered nurses.

Nursing care facilities

In 2002, the third-largest industry employing registered nurses was nursing care facilities, with 5.7 percent (126,920) of all nurses working in those facilities. By 2015, this share had dropped to 5.3 percent, but the number of nursing positions had increased by 28,610, to 155,530. Over the same 13-year period, employment for registered nurses in nursing care facilities increased by 22.5 percent, compared with a 5.0-percent increase in total employment for the industry.

During the 2007–10 period, the share of registered nurses employed in the industry remained roughly unchanged —5.0 percent (123,480 jobs) in 2007 and 5.1 percent (134,460 jobs) in 2010. However, the number of nursing positions increased by almost 11,000, or 8.9 percent, during the recession.

Wages for registered nurses in nursing care facilities rose 42.1 percent between 2002 and 2015, from $21.54 hourly ($44,803 yearly) to $30.61 hourly ($63,669 yearly).Over the 2007–10 period, nursing salaries in the industry increased 6.3 percent, from $27.12 hourly ($56,410 yearly) to $28.84 hourly ($59,987 yearly).

Home health care services

The home health care services industry accounted for 5.1 percent of all jobs for registered nurses in 2002 (114,950 jobs) and experienced notable growth between 2002 and 2015. During this 13-year period, employment of registered nurses in the industry increased by 54.0 percent, to 176,980. In effect, of total net job increases in registered nursing over the period, 9.0 percent (about 1 out of every 10 jobs) were in the home health care services industry.

Between 2007 and 2010, nursing employment in home health care services increased by 19,159, or 15.1 percent, with the share of nurses working in the industry rising from 5.2 percent to 5.5 percent. Total employment for all occupations in the industry rose 18.3 percent over the period.

Between 2002 and 2015, nursing wages in home health care services rose 42.2 percent, from $23.38 hourly ($48,630 yearly) to $33.24 hourly ($69,139 yearly). This percent increase was similar to the average percent increases recorded for the other nurse-employing industries over the 13-year timeframe.

During the 2007–10 period, nursing wages in the industry increased 8.0 percent, from $28.43 hourly ($59,134 yearly) to 30.70 hourly ($63,856 yearly).

Employment services

In 2002, 3.0 percent (67,020) of all registered nurses were employed by employment services agencies. By 2015, this share had fallen to 1.7 percent, to an employment base of 49,970, representing a decline of 17,050 nursing positions, or 25.4 percent. Total employment in the industry increased by 5.8 percent over the same 13-year period. One reason for the drop in nursing employment may be the cyclical nature of employment services, whose employment tends to rise during expansions and fall during contractions. Employers use employment services firms to meet immediate staffing needs when demand for labor is increasing.[8]

Over the 6-year period from 2002 to the beginning of the recession in 2007, employment services experienced strong job growth. The number of registered nurses employed in the industry rose to 96,550, an increase of 29,530, or 44.1 percent. However, by 2010, a steep decline in employment was noted. Nursing employment in the industry had fallen to 70,400, a decrease of 27.1 percent (26,150), consistent with the cyclical nature of employment services (total employment in the industry fell 27.2 percent from 2007 to 2010). While 3.9 percent of all registered nurses worked in employment services in 2007, only 2.7 percent did in 2010.

Although employment opportunities for registered nurses in the industry decreased between 2002 and 2015, a different picture emerged for wages. In 2002, these workers were paid $27.66 hourly ($57,533 annually); by 2015, this wage had risen to $34.94 hourly ($72,675 annually), an increase of 26.3 percent.

During the 2007–10 period, nursing wages in employment services increased 3.2 percent, from $32.49 hourly ($67,579 yearly) to $33.54 hourly ($69,763 yearly).

Nursing in metropolitan areas

To complete the picture of the effects of the recession on registered nursing, this section looks at how nursing employment and wages changed in different metropolitan areas over the 2007–10 period. Five metropolitan statistical areas that employ the most registered nurses were selected for analysis: New York, Los Angeles, Chicago, Philadelphia, and Boston.[9] (See table 2 and figure 6.)

Table 2. Employment and wages of registered nurses (RNs), by metropolitan area, 2007–10

Metropolitan area	Variable	2007	2008	2009	2010	2007–10 percent change
Employment of RNs						
U.S. average	RN employment	2,468,340	2,542,760	2,583,770	2,655,020	7.6
	Total employment	134,354,250	135,185,230	130,647,610	127,097,160	-5.4

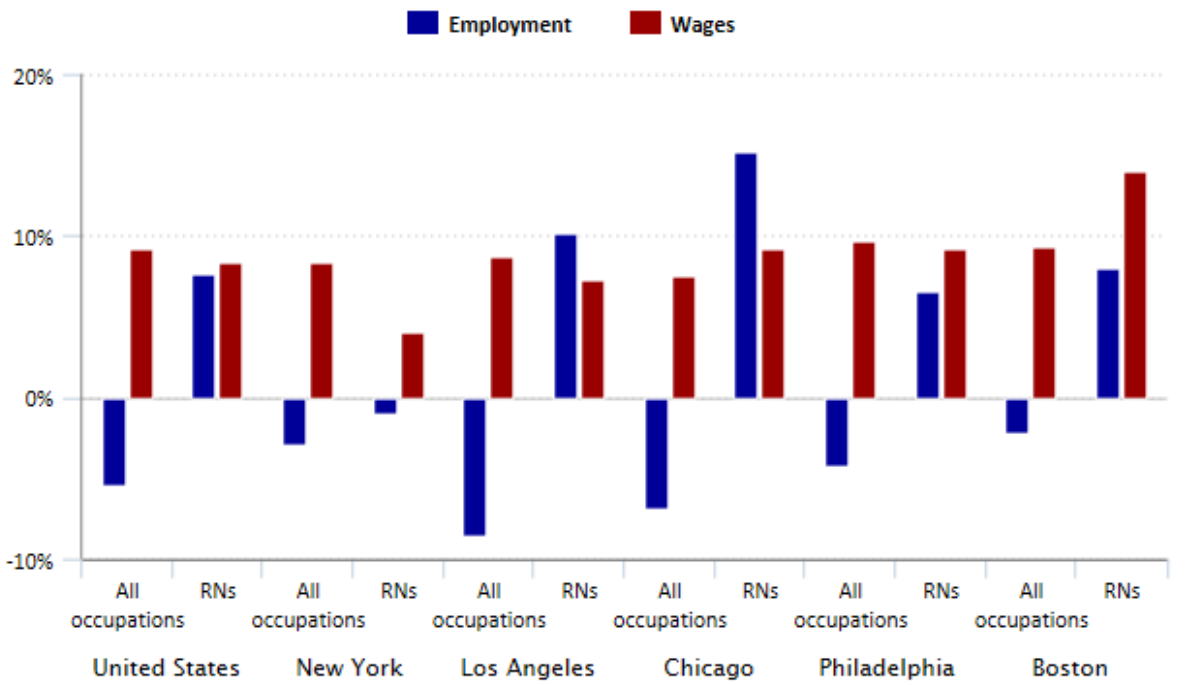
See footnotes at end of table.

Table 2. Employment and wages of registered nurses (RNs), by metropolitan area, 2007–10

Metropolitan area	Variable	2007	2008	2009	2010	2007–10 percent change
New York–Northern New Jersey–Long Island, NY–NJ–PA	RN employment	162,070	162,370	157,330	160,530	-1.0
	Total employment	8,340,640	8,455,130	8,245,760	8,101,890	-2.9
Los Angeles–Long Beach–Santa Ana, CA	RN employment	80,480	86,320	81,440	87,470	8.7
	Total employment	5,682,670	5,686,130	5,395,280	5,191,880	-8.6
Chicago–Naperville–Joilet, IL–IN–WI	RN employment	78,060	82,570	86,860	89,890	15.2
	Total employment	4,477,610	4,493,330	4,319,720	4,169,840	-6.9
Philadelphia–Camden–Wilmington, PA–NJ–DE–MD	RN employment	60,830	61,180	62,870	64,870	6.6
	Total employment	2,733,960	2,749,160	2,672,070	2,619,360	-4.2
Boston–Cambridge–Quincy, MA–NH	RN employment	59,660	61,220	62,930	64,460	8.0
	Total employment	2,468,720	2,503,720	2,457,180	2,413,780	-2.2
Mean hourly wages of RNs						
U.S. average	RN wages	$30.04	$31.31	$31.99	$32.56	8.4
	Wages, all occupations	$19.56	$20.32	$20.90	$21.35	9.2
New York–Northern New Jersey–Long Island, NY–NJ–PA	RN wages	$36.73	$38.16	$38.14	$38.23	4.1
	Wages, all occupations	$24.43	$25.39	$26.08	$26.48	8.4
Los Angeles–Long Beach–Santa Ana, CA	RN wages	$36.41	$37.86	$38.43	$39.06	7.3
	Wages, all occupations	$21.88	$22.90	$23.55	$24.10	10.1
Chicago–Naperville–Joilet, IL–IN–WI	RN wages	$31.01	$32.36	$33.17	$33.86	9.2
	Wages, all occupations	$21.69	$22.65	$23.16	$23.32	7.5
Philadelphia–Camden–Wilmington, PA–NJ–DE–MD	RN wages	$31.90	$32.98	$34.47	$34.85	9.2
	Wages, all occupations	$21.40	$22.31	$23.07	$23.47	9.7
Boston–Cambridge–Quincy, MA–NH	RN wages	$36.95	$39.16	$40.46	$42.13	14.0
	Wages, all occupations	$24.87	$25.81	$26.74	$27.19	9.3

Source: U.S. Bureau of Labor Statistics.

Figure 6. Percent change in employment and wages, all occupations and registered nurses (RNs), by metropolitan area, 2007–10



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Source: U.S. Bureau of Labor Statistics.

New York

In 2007, the New York region had a total of 8,340,640 jobs, 1.9 percent (162,070) of which were in registered nursing. By 2010, total employment in the region had fallen by 238,750, or 2.9 percent. Employment of registered nurses had decreased by 1,540, a statistically insignificant decline. By 2010, registered nurses accounted for 2.0 percent of all jobs in the region.

In 2007, the average wage for registered nurses in New York was $36.73 hourly ($76,398 yearly). This wage was 50.3 percent higher than the average wage for all occupations in the region ($24.43 hourly, $50,814 yearly) and 22.3 percent higher than the average wage for registered nurses in the nation ($30.04 hourly, $62,483 yearly). By 2010, the average nursing wage in New York had increased by 4.1 percent, to $38.23 hourly ($79,518 yearly). This wage was 44.4 percent higher than the overall average wage in the region ($26.48 hourly, $55,078 yearly) and 17.4 percent higher than the average wage for registered nurses in the nation ($32.56 hourly, $67,725 yearly).

During the 2007–10 period, overall average wages in New York increased by 8.4 percent, whereas average wages for registered nurses in the region increased by just 4.1 percent.

Los Angeles

In 2007, the Los Angeles region had a total of 5,682,670 jobs, 1.4 percent (80,480) of which were in registered nursing—a lower proportion than for the New York region. By 2010, overall employment in the region had fallen to

5,191,880, a decline of 490,790 jobs, or 8.6 percent. Meanwhile, employment of registered nurses climbed to 87,470, an increase of 8.7 percent. By 2010, 1.7 percent of all regional jobs were in registered nursing.

In 2007, the average wage for registered nurses in Los Angeles was $36.41 hourly ($75,733 yearly). This wage was 66.4 percent higher than the overall average wage in the region ($21.88 hourly, $45,510 yearly). By 2010, nursing wages in Los Angeles had increased by 7.3 percent, to $39.06 hourly ($81,245 yearly). Meanwhile, overall average wages in the region increased 10.1 percent, to $24.10 hourly ($50,128 yearly).

Chicago

In 2007, the Chicago region had a total of 4,477,610 jobs, 1.7 percent (78,060) of which were in registered nursing. This percentage was lower than that for New York but higher than that for Los Angeles. By 2010, total employment in the region had decreased by 307,770, or 6.9 percent, down to a level of 4,169,840. During the same period, employment for registered nurses increased by 15.2 percent (11,830), accounting for 2.2 percent of all regional jobs in 2010. In effect, the impact of registered nursing on the region's employment exceeded that noted for New York and Los Angeles.

In 2007, the average wage in Chicago was $21.69 hourly ($45,115 yearly), lower than the average wage for registered nurses in the region ($31.01 hourly, $64,500 yearly). By 2010, the average regional wage was $23.32 hourly ($48,506 yearly), still lower than the average regional nursing wage of $33.86 hourly ($70,429 yearly).

During the 2007–10 period, average wages for registered nurses in Chicago increased by 9.2 percent, whereas overall average wages in region increased by 7.5 percent.

Philadelphia

In 2007, the Philadelphia region had a total of 2,733,960 jobs, 2.2 percent (60,830) of which were in registered nursing. By 2010, regional employment had decreased by 114,600, or 4.2 percent, down to a level of 2,619,360. Meanwhile, employment in registered nursing rose by 4,040, or 6.6 percent, reaching a level of 64,870. By 2010, 2.5 percent of all regional jobs were in registered nursing.

In 2007, the overall average wage for all occupations in Philadelphia was $21.40 hourly ($44,512 yearly). By 2010, this wage had grown to $23.47 hourly ($48,818 yearly), an increase of 9.7 percent. In 2007, the average wage for registered nurses in the region was $31.90 hourly ($66,352 yearly), which was 49.1 percent higher than the average regional wage. By 2010, average nursing wages had climbed to $34.85 hourly ($72,488 yearly), an increase of 9.2 percent.

Boston

In 2007, the Boston region had 2,468,720 jobs, 2.4 percent (59,660) of which were in registered nursing. By 2010, regional employment had declined by 54,940, or 2.2 percent, down to a level of 2,413,780. Over the same period, nursing employment increased by 4,800, or 8.0 percent. By 2010 after the end of the recession, 2.7 percent of all jobs in the region were in registered nursing.

In 2007, the overall average wage in Boston was $24.87 hourly ($51,730 yearly). By 2010, this wage had increased to $27.19 hourly ($56,555 yearly), a rise of 9.3 percent. The average wage for registered nurses in the region increased by 14.0 percent, from $36.95 hourly ($76,856 yearly) to $42.13 hourly ($87,630 yearly).

Discussion

The results of the preceding analysis clearly show that the Great Recession had little, if any, negative labor market effect on registered nursing. Employment in the nursing profession, unlike that in the national economy, experienced steady and notable growth. Between 2007 and 2010, national employment decreased by more than 7 million, or 5.4 percent. By contrast, over the same period, nursing employment increased by nearly 187,000, or 7.6 percent.

A different picture emerges when wages are considered. During the recession, average wages increased both in the national economy and in registered nursing—by 9.2 percent and 8.4 percent, respectively. Apparently, continued growth in the demand for healthcare services had a positive effect on professional nursing employment and wages. In the national economy, layoffs may have produced a smaller, qualitatively different workforce, allowing higher skilled workers remaining in their jobs to demand higher wages or compelling employers to provide higher compensation to maintain productivity.

As mentioned earlier, registered nurses worked in a variety of professional settings, or industries, with five of those —general medical and surgical hospitals, offices of physicians, nursing care facilities, home health care services, and employment services—providing about 80 percent of all nursing employment. During the recession, the nursing profession added about 187,000 jobs. Of these, about 6 out of 10 were added in the general medical and surgical hospital sector—the driving force behind nursing employment.

Although the analysis suggests that nursing wages during the recession increased in each of the five occupational settings, it also yields a notable finding regarding job growth in the employment services sector. Whereas nursing positions increased in hospitals, offices of physicians, nursing homes, and home health care services, they declined in employment services. Between 2007 and 2010, more than 25,000 nursing jobs were lost in employment services (a decline of 27.1 percent), possibly because of the intrinsic cyclical nature of the industry. By contrast, the job growth in the other four industries provides support to previous studies indicating that nursing employment is countercyclical, increasing during economic downturns.

Factoring the geographical setting into the analysis completes the picture. Given that the national economy is an aggregation of regional economies, an examination of the effect of the Great Recession on nursing employment and wages in the five distinct geographical regions presented earlier is helpful in assessing the overall findings. Although the general trends were similar across the five regions, there was some notable variability.

While overall employment declined in each region during the recession, registered nursing employment increased in four of the five areas—Los Angeles, Chicago, Philadelphia, and Boston—and did not change significantly in New York. Between 2007 and 2010, nursing job growth in the national economy was 7.6 percent, which compares with 15.2 percent for Chicago, 8.7 percent for Los Angeles, 8.0 percent for Boston, and 6.6 percent for Philadelphia..

After the recession, in 2010, nursing wages in all five regions exceeded the national nursing wage of $67,725. These wages were $87,630 in Boston, $81,245 in Los Angeles, $79,518 in New York, $72,488 in Philadelphia, and $70,429 in Chicago. In 2010, 2.1 percent of all jobs in the nation were in registered nursing. By comparison, in New York, 2.0 percent of all jobs were in nursing; in Los Angeles, 1.7 percent; in Chicago, 2.2 percent; in Philadelphia, 2.5 percent; and in Boston, 2.7 percent. The economic importance of the nursing profession to the Boston regional economy may help explain the wage differential recorded for that region.

Conclusions

This article showed that, during the Great Recession, registered nursing was effectively a recession-proof profession. While overall employment declined substantially at both the national and regional levels, employment in registered nursing saw a steady and robust growth.

The question is whether this pattern will continue into the future, where, if history is a guide, further economic downturns can be expected. Demographic changes driven by an aging population, along with new medical treatment modalities and breakthrough pharmaceuticals, should increase the demand for healthcare services, thereby increasing the demand for registered nurses.

Notwithstanding the different estimates, demands to control rising healthcare costs have focused attention on the cost measurement and reimbursement mechanisms currently employed to pay for healthcare services throughout the nation.[10] In reaction to, and in anticipation of, changes to government policies regarding healthcare, the provider and payer communities are undergoing notable changes. Whether these changes will alter the employment and wage trends for registered nurses remains to be seen.

Technical note

Scope of the survey. The Occupational Employment Statistics (OES) survey is a semiannual mail survey measuring occupational employment and wage rates for wage and salary workers in nonfarm establishments in the United States. OES data available from BLS include cross-industry occupational employment and wage estimates for the nation and nearly 650 geographic areas, including states and the District of Columbia, metropolitan statistical areas, metropolitan divisions, nonmetropolitan areas, and U.S. territories; national industry-specific estimates by North American Industry Classification System (NAICS) sector and 3-digit, 4-digit, and selected 5- and 6-digit industry groups; and national estimates by ownership across all industries and for schools and hospitals.

The OES survey is a cooperative effort between BLS and state workforce agencies (SWAs). BLS funds the survey and provides the procedures and technical support for data collection, whereas SWAs collect most of the data. OES estimates are constructed from a sample of about 1.2 million establishments.

Employment. Occupational employment is an estimate of total wage and salary employment in an occupation and is based on a rolling 3-year survey collection cycle. The OES survey defines employment as the number of workers who can be classified as full- or part-time employees, including workers on paid vacations or other types of paid leave; workers on unpaid short-term absences; salaried officers, executives, and staff members of incorporated firms; employees temporarily assigned to other units; and employees for whom the reporting unit is their permanent duty station, regardless of whether that unit prepares their paycheck. The survey does not include the self-employed, owners and partners in unincorporated firms, household workers, or unpaid family workers.

Wages. Wages for the OES survey are straight-time gross pay, exclusive of premium pay. Base pay rates; cost-of-living allowances; guaranteed pay; hazardous-duty pay; incentive pay, including commissions and production bonuses; and tips are included. Excluded are overtime pay, severance pay, shift differentials, nonproduction bonuses, employer costs for supplementary benefits, and tuition reimbursements.

Data timeframe for this article. In 2002, the OES survey changed its method for classifying industries, switching from the Standard Industrial Classification system to the 2002 NAICS. As a result, there were changes in many industry definitions. Other changes in survey methodology also began in 2002. To preserve data consistency, the analysis for this article did not use data for the pre-2002 period. Although the OES program switched from the 2002 NAICS to the 2007 NAICS in 2008, the industry definitions employed here did not change. At the time this research was conducted, 2015 data were the most recent OES published data available.

Changes to the definition of "registered nurses" in 2012. From 2002 to 2011, occupational data in the OES survey were based on the 2000 Standard Occupational Classification (SOC) system. During those years, the SOC definition of "registered nurses" included not only registered nurses but also nurse practitioners, nurse midwives, and nurse anesthetists. In 2012, OES began using the 2010 SOC system, in which the latter three categories were separated into individual SOC codes. For this article, and to preserve consistency over time, all four SOC codes (registered nurses, nurse practitioners, nurse midwives, and nurse anesthetists) were combined with the use of a weighted average, starting with data for 2012.

SUGGESTED CITATION

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NOTES

[1] The National Bureau of Economic Research is the official arbiter of recessionary periods in the United States.

[2] David R. H. Hiles, "Health services: the real jobs machine," *Monthly Labor Review*, November 1992, https://www.bls.gov/opub/mlr/1992/11/art1full.pdf.

[3] Andrew Hogan and Brian Roberts, "Occupational employment projections to 2024," *Monthly Labor Review*, December 2015, https://www.bls.gov/opub/mlr/2015/article/occupational-employment-projections-to-2024.htm.

[4] Douglas O. Staiger, David I. Auerbach, and Peter I. Buerhaus, "Registered nurse supply and the recession: are we in a bubble?" *New England Journal of Medicine*, vol. 366, no. 16, April 2012, pp. 1463–1465; and Carol S. Brewer, Christine T. Kovner, Siritorn Yingrengeung, and Maja Djukic, "New nurses: has the recession increased their commitment to their jobs?" *American Journal of Nursing*, vol. 112, no. 3, March 2012, pp. 34–44.

[5] Jill Bernstein, "Impact of the economy on health care" (Robert Wood Johnson Foundation, August 2009); and Kathleen Gallo, "Is nursing recession proof?" *American Journal of Maternal Child Nursing*, vol. 34, no. 5, September–October 2009, p. 274.

[6] For more information on OES data and time-series analysis, see question F.1 in "Frequently asked questions," Occupational Employment Statistics (U.S. Bureau of Labor Statistics), https://www.bls.gov/oes/oes_ques.htm.

[7] The employment services industry includes employment placement agencies and executive search services, temporary help services, and professional employer organizations.

[8] See Tian Luo, Amar Mann, and Richard Holden, "The expanding role of temporary help services from 1990 to 2008," *Monthly Labor Review*, August 2010, https://www.bls.gov/opub/mlr/2010/08/art1full.pdf.

[9] The complete titles of the metropolitan statistical areas are New York–Northern New Jersey–Long Island, NY–NJ–PA; Los Angeles–Long Beach–Santa Ana, CA; Chicago–Naperville–Joliet, IL–IN–WI; Philadelphia–Camden–Wilmington, PA–NJ–DE–MD; Boston–Cambridge–Quincy, MA–NH. For a complete description of these areas, which are based on standardized definitions issued by the

Office of Management and Budget, see “May 2010 metropolitan and nonmetropolitan area definitions,” Occupational Employment Statistics (U.S. Bureau of Labor Statistics), www.bls.gov/oes/msa_def_10.htm.

[10] Michael E. Porter, and Robert S. Kaplan, “How to pay for health care,” *Harvard Business Review*, vol. 94, nos. 7–8, July–August 2016, pp. 88–100. See also Kaplan and Porter, “The big idea: how to solve the cost crisis in health care,” *Harvard Business Review*, vol. 89, no. 9, September 2011, pp. 47–64.

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