Hospital staffing patterns in urban and nonurban areas

Metropolitan hospitals tended to have a higher percentage of professional and technical occupations, while nonmetropolitan hospitals had more paraprofessional occupations related to bedside care, rather than technical treatments

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Hospitals in metropolitan areas are staffed very differently from those in nonmetropolitan areas.[1] Doctors, registered nurses, and other health care professionals hold a smaller share of employment in nonmetropolitan area hospitals than they do in their metropolitan area counterparts, according to data from the 1992 Occupational Employment Statistics survey. These survey data also reveal that occupational staffing patterns vary significantly among hospitals in different States. The relatively smaller size and resource base of nonmetropolitan area hospitals may account for these differences.

This article profiles trends in occupational employment in hospitals between 1989 and 1992, and presents detailed occupational employment data from the 1992 Occupational Employment Statistics survey of hospitals. The article provides, for the first time, data on staffing pattern differences between metropolitan and nonmetropolitan area hospitals and briefly discusses hospital employment differences among States. The data are derived from the 1989 and 1992 Occupational Employment Statistics surveys, which cover all private and State and local government hospitals.[2]

The hospital industry includes general medical and surgical hospitals, psychiatric hospitals, and specialty hospitals such as children's and orthopedic hospitals.[3] These establishments are primarily engaged in providing diagnostic and extensive medical treatment services, including surgical and other hospital services, as well as continuous nursing care. They have organized medical staffs, inpatient beds, and equipment and facilities to provide complete health care.

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Recent trends

Employment in hospitals rose from 4.3 million in 1989 to 4.7 million in 1992. This increase of nearly 10 percent continued a growth trend in overall hospital employment that began in the mid-1980's. National staffing pattern trends, identified during the 1980's, continued through 1992, as many of the same factors that affected hospitals in the earlier part of the 1980's continued to influence occupational staffing patterns in the industry.[4]

In an effort to decrease costs, hospitals use numerous strategies, including shortening the length of inpatient stays through expanded outpatient services and increasing the use of hospitality contract management firms to provide services such as housekeeping, laundry, and food service.[5] Hospital executives expected these contracted firms to reduce costs, improve quality, and provide specialized expertise.[6] In 1991 alone, the number of these hospital contracts rose 10.4 percent, leading to a decrease in the proportion of hospitals employing workers in certain ser-

vice occupations, such as maids and housekeeping cleaners, institution and cafeteria cooks, and other service workers.[7] Furthermore, hospitals, like large firms in other industries, have begun setting total quality management goals to better adapt to greater competition.[8] This has led to the evolution of some new occupations in this area.

Another trend influencing occupational employment in hospitals has been an increase in the use of nonphysician health professionals such as nurse practitioners and nurse midwives. Several factors influenced this increase, including the need to reduce health care costs and improve access to care for the poor and residents of rural areas. In 1990, medicare and medicaid began reimbursing certain nonphysician health professionals for the care they deliver,[9] allowing them to expand their roles and perform functions previously performed by physicians.[10]

Occupational profile

Employment growth varied among the major groups of occupations within hospitals between 1989 and 1992. Occupations requiring higher educational attainment and a higher level of skill, such as managers and professionals, increased not only in absolute employment, but also as a percentage of industry employment. Many occupations that require less education and fewer skills, such as service occupations, decreased as a share of industry employment.

Managerial and administrative occupations continued to account for an increasing share of hospital employment, from 4.3 percent to 4.6 percent, while employment rose by 17.8 percent, or 184,710 to 217,650 between 1989 and 1992. Employment of professional, paraprofessional, and technical occupations also continued to rise, from 2.3 million in 1989 to 2.5 million in 1992—an 11.8-percent increase. The share of industry employment for these occupations rose from 53.1 percent to 54.1 percent.

Despite the 6.7-percent increase in employment for service workers (from 949,280 in 1989 to 1.0 million in 1992), their share of industry employment declined from 21.9 percent to 21.3 percent. In fact, all the remaining major groups of occupations experienced declining shares of industry employment, except for sales and related occupations.These groups—clerical and administrative support occupations; production, construction, operating, maintenance, and material handling occupations; and agricultural and related occupations–together constituted 19.7 percent of industry employment in 1992. (See table 1 for 1992 hospital occupational employment estimates, by major occupational group, as well as detailed occupations.)

The five occupations with the highest employment levels in hospitals constituted more than 40 percent of industry employment in 1992. The nearly 1.2 million registered nurses accounted for 24.8 percent of the industry total, the largest of the hospital industry's occupations. Nursing aides, orderlies, and attendants held the second highest proportion of employment, with 6.3 percent, and licensed practical nurses held the third highest proportion with 5.4 percent. General office clerks were the fourth most reported occupation, representing 3.3 percent of employment in hospitals; maids and housekeeping cleaners were fifth, accounting for 2.8 percent.

Managerial and administrative occupations. Medicine and health services managers posted the largest change among managerial and administrative occupations, increasing from 64,570 in 1989 to 80,390 in 1992, or 24.5 percent. As a result, their share of industry employment increased from 1.5 percent to 1.7 percent. The "All other managers" category significantly increased in employment from 42,760 to 53,560, or 25.5 percent. Included in this category are emerging occupations such as utilization review coordinators, who monitor physician utilization and appropriateness of care, and managers in the areas of quality assurance. The emergence of these types of managers underscores the attempts by hospitals to boost efficiency and quality.

Professional, paraprofessional, and technical occupations. Most occupations in this major group showed increased employment in the 1989–92 period. One major exception was physicians and surgeons, whose employment dropped substantially, from 102,260 to 97,050, or 5.1 percent. The share of industry employment held by physicians and surgeons also dropped, from 2.4 percent to 2.0 percent. Several factors influencing the hospital industry may have contributed to this decline. These include the emergence of nonphysicians performing tasks formerly conducted by physicians,[11] contracting out by hospitals for certain medical procedures,[12] and a decrease in inpatient admissions.[13]

Registered nurses continue to be the largest occupation in hospitals, accounting for nearly one-quarter of hospital employment in 1992. Employment in this occupation, which includes nurse practitioners and nurse midwives, grew 13.0 percent, from 1.0 million to 1.2 million, between 1989 and 1992.[14] In addition, registered nurses' share of hospital employment increased from 24.1 percent to 24.8 percent. Again, this may be because hospitals employ more highly trained nurses to perform some of the functions

(Text continues on page 29.)

Table 1. **Employment in hospitals, relative error, and percent of establishments reporting selected occupations, April 1992**

Occupation	Employment[1]	Percent of total employment	Relative error (in percentage)[2]	Percent of establishments reporting the occupation
Total	4,757,720	100.00	—	—
Managerial and administrative occupations	217,650	4.57	—	—
Financial managers	11,040	.23	(3)	69
Personnel, training, and labor relations managers	9,420	.20	(3)	61
Purchasing managers	5,210	.11	0	53
Marketing, advertising, and public relations managers	7,440	.16	(3)	50
Administrative services managers	6,590	.14	(3)	28
Engineering, mathematical, and natural sciences managers	6,180	.13	0	31
Medicine and health services managers	80,390	1.69	(3)	82
Food service and lodging managers	7,500	.16	(3)	57
General managers and top executives	30,320	.64	(3)	80
All other managers and administrators	53,560	1.13	—	—
Professional, paraprofessional, and technical occupations	2,574,110	54.10	—	—
Management support workers	68,280	1.43	—	—
Accountants, auditors, and other financial specialists	21,360	.45	—	—
Accountants and auditors	12,100	.25	(3)	46
Budget analysts	2,800	.06	0	19
Other financial specialists	6,460	.14	—	—
Purchasing agents	6,890	.14	(3)	41
Personnel, training, and labor relations specialists	10,940	.23	0	40
Compliance officers, except construction	5,620	.12	(3)	15
All other management support workers	23,470	.49	—	—
Engineers	7,900	.17	—	—
Civil engineers, including traffic	500	.01	0	3
Electrical and electronic engineers	670	.01	0	4
Computer engineers	1,300	.03	0	6
Industrial engineers, except safety	660	.01	0	4
Mechanical engineers	1,990	.04	0	8
Other engineers	2,780	.06	—	—
Engineering and related technicians and technologists	4,060	.09	—	—
Electrical and electronic engineering technicians and technologists	1,560	.03	0	5
Other engineering and related technicians	2,500	.05	—	—
Physical scientists	770	.02	0	3
Life scientists	8,340	.18	—	—
Biological scientists	3,720	.08	0	6
Medical scientists	3,600	.08	0	6
All other life scientists	1,020	.02	—	—
Physical and life science technicians and technologists	5,090	.11	—	—
Biological, agricultural, and food technicians and technologists	1,300	.03	0	1
Chemical technicians and technologists, except health	1,310	.03	0	2
Other physical and life science technicians and technologists	2,480	.05	—	—
Computer scientists and related workers	23,560	.50	—	—
Systems analysts	10,930	.23	0	23
Computer programmers	5,560	.12	0	20
Computer programmer aides	4,440	.09	(3)	13
Other computer scientists and related workers	2,630	.06	—	—
Social scientists, including urban and regional planners	13,470	.28	—	—
Psychologists	11,140	.23	(3)	20
Other social scientists	2,330	.05	—	—
Social workers, medical and psychiatric	54,020	1.14	(3)	63
Social workers, except medical and psychiatric	11,740	.25	(3)	21
Human service workers	9,050	.19	(3)	16
Clergy	5,160	.11	(3)	24
Nursing instructors	10,310	.22	(3)	23
Teachers and instructors	20,130	.43	—	—

See footnotes at end of table.

Table 1. **Continued—Employment in hospitals, relative error, and percent of establishments reporting selected occupations, April 1992**

Occupation	Employment[1]	Percent of total employment	Relative error (in percentage)[2]	Percent of establishments reporting the occupation
Instructors, vocational	6,440	.14	(3)	13
Other teachers and instructors	13,690	.29	—	—
Librarians, professional	2,400	.05	0	20
Technical assistants, library	1,720	.04	0	10
Health practitioners, technicians, and technologists	2,297,240	48.28	—	—
Health diagnosing and treating practitioners	101,160	2.13	—	—
Physicians and surgeons	97,050	2.04	(3)	36
Dentists	1,780	.04	0	6
Other health diagnosing and treating practitioners	2,330	.05	—	—
Therapists	141,110	2.96	—	—
Respiratory therapists	66,300	1.39	(3)	60
Occupational therapists	16,580	.35	(3)	35
Physical therapists	29,020	.61	(3)	52
Corrective and manual arts therapists	950	.02	0	4
Speech pathologists and audiologists	8,220	.17	(3)	24
Recreational therapists	12,280	.26	(3)	35
Other therapists	7,760	.16	—	—
Health care maintenance and treatment workers	1,544,990	32.47	—	—
Registered nurses	1,178,950	24.78	(3)	93
Licensed practical nurses	256,960	5.40	(3)	87
Emergency medical technicians	28,300	.59	(3)	26
Physicians assistants	8,680	.18	(3)	16
Pharmacists	44,920	.94	(3)	67
Dietitians and nutritionists	15,980	.34	0	57
Dietetic technicians	11,200	.24	0	35
Other health professionals, paraprofessionals and technicians	509,980	10.73	—	—
Medical and clinical laboratory technologists	97,380	2.05	0	64
Medical and clinical laboratory technicians	49,800	1.05	(3)	60
Dental hygienists	940	.02	0	5
Medical records technicians and technologists	34,730	.73	(3)	71
Nuclear medicine technologists	10,900	.23	(3)	38
Radiologic technologists	57,430	1.21	(3)	59
Radiologic technicians	35,870	.75	(3)	51
Electroencephalograph technologists	5,250	.11	(3)	25
Cardiology technologists	13,960	.29	(3)	29
Electrocardiography technicians	13,790	.29	0	33
Surgical technicians	40,220	.85	(3)	52
Psychiatric technicians	58,520	1.23	(3)	19
Other health professionals, paraprofessionals and technicians	91,190	1.92	—	—
Public relations specialists and publicity writers	5,090	.11	(3)	30
Photographers	1,070	.02	0	6
All other professional, paraprofessional, and technical workers	24,710	.52	—	—
Sales and related occupations	16,920	.36	—	—
Cashiers	14,100	.30	(3)	42
All other sales and related workers	2,820	.06	—	—
Clerical and administrative support occupations	793,360	16.68	—	—
First-line supervisors, clerical and administrative	46,800	.98	(3)	66
Adjustment clerks	10,230	.22	(3)	19
Medical secretaries	52,130	1.10	(3)	59
Secretaries, except legal and medical	93,550	1.97	(3)	71
Stenographers	25,740	.54	(3)	42
Receptionists and information clerks	37,540	.79	(3)	53
Typists, including word processing	31,090	.65	(3)	34
Personnel clerks, except payroll and timekeeping	7,000	.15	0	41

See footnotes at end of table.

Table 1. **Continued—Employment in hospitals, relative error, and percent of establishments reporting selected occupations, April 1992**

Occupation	Employment[1]	Percent of total employment	Relative error (in percentage)[2]	Percent of establishments reporting the occupation
File clerks	18,720	.39	0	36
Order clerks, material, merchandise, and service	5,290	.11	0	16
Procurement clerks	4,560	.10	0	29
Statistical clerks	19,800	.42	0	33
Interviewing clerks, except personnel and welfare	53,240	1.12	0	43
Bookkeeping, accounting, and auditing clerks	27,750	.58	(3)	65
Payroll and timekeeping clerks	8,080	.17	0	54
Billing, cost, and rate clerks	43,820	.92	(3)	65
General office clerks	151,510	3.18	(3)	72
Office machine operators and data processing	30,380	.64	—	—
Billing, posting, and calculating machine operators	4,020	.08	0	12
Computer operators, except peripheral equipment	10,850	.23	(3)	31
Data entry keyers, except composing	12,980	.27	(3)	43
Other office machine operators	2,530	.05	—	—
Switchboard operators	32,120	.68	0	66
Material recording, scheduling, dispatching, and distributing workers	47,000	.99	—	—
Dispatchers, police, fire, and ambulance	2,100	.04	0	5
Stock clerks, stockroom, warehouse, or storage yard	32,940	.69	0	55
Traffic, shipping, and receiving clerks	6,210	.13	0	25
Other material recording, scheduling, and distributing workers	5,750	.12	—	—
All other clerical and administrative support workers	47,010	.99	—	—
Service occupations	1,012,770	21.29	—	—
Housekeepers	37,500	.79	(3)	68
Other service supervisors, and manager/supervisors	18,130	.38	—	—
Guards and watch guards	35,200	.74	(3)	35
Food, beverage preparation and service workers	193,520	4.07	—	—
Waiters and waitresses	2,390	.05	0	3
Food servers, outside	43,890	.92	0	29
Dining room and cafeteria attendants, and bartender helpers	13,480	.28	0	17
Counter attendants, lunchroom, coffee shop, or cafeteria	6,060	.13	0	13
Bakers, bread and pastry	2,100	.04	0	14
Cooks, institution or cafeteria	32,940	.69	0	75
Cooks, short order	2,390	.05	0	9
Food preparation workers	62,350	1.31	0	54
Other food service workers	27,920	.59	—	—
Health service and related workers	529,630	11.13	—	—
Dental assistants	2,210	.05	0	6
Medical assistants	12,030	.25	(3)	13
Nursing aides, orderlies, and attendants	299,850	6.30	0	76
Home health aides	18,900	.40	(3)	20
Psychiatric aides	55,240	1.16	(3)	11
Physical and corrective therapy assistants and aides	18,970	.40	(3)	44
Occupational therapy assistants and aides	6,060	.13	0	19
Ambulance drivers and attendants	2,540	.05	(3)	5
Pharmacy assistants	37,870	.80	(3)	57
Other health service workers	75,960	1.60	—	—
Cleaning and building service workers	177,520	3.73	—	—
Maids and housekeeping cleaners	131,490	2.76	0	66
Janitors and cleaners	39,580	.83	(3)	42
Other cleaning and building service workers, except private households	6,450	.14	—	—
Personal service workers	10,550	.22	—	—
Personal and home care aides	2,890	.06	(3)	3
Child care workers	7,660	.16	(3)	7
All other service workers	10,720	.23	—	—

See footnotes at end of table.

Table 1. **Continued—Employment of hospitals, relative error, and percent of establishments reporting selected occupations, April 1992**

Occupation	Employment[1]	Percent of total employment	Relative error (in percentage)[2]	Percent of establishments reporting the occupation
Agriculture, forestry, fishing, and related occupations	6,390	.13	—	—
Gardeners and groundskeepers, except farm	5,760	.12	(3)	31
Other agriculture, forestry, fishing and related workers	630	.01	—	—
Production, construction, operating, maintenance and material handling occupations	136,520	2.87	—	—
First-line supervisors-production, construction, and maintenance	8,830	.19	—	—
First-line supervisors-mechanics, installers, and repairers	5,230	.11	0	31
All other first-line supervisors and manager/supervisors-production, construction and maintenance workers	3,600	.08	—	—
Mechanics, installers, and repairers	47,210	.99	—	—
Machinery maintenance mechanics	5,200	.11	0	13
Maintenance repairers, general utility	25,550	.54	(3)	65
Heating, air-conditioning, and refrigeration mechanics and installers	4,680	.10	0	22
Electromedical and biomedical equipment repairers	7,020	.15	0	22
Menders—garments and linens	1,290	.03	0	9
Other mechanics, installers, and repairers	3,470	.07	—	—
Construction trades and extractive workers, except material moving	21,340	.45	—	—
Carpenters	6,030	.13	0	25
Electricians	5,740	.12	0	26
Painters and paperhangers, construction and maintenance	5,900	.12	0	28
Plumbers, pipefitters, and steamfitters	3,670	.08	0	19
Other construction and extractive workers, except helpers	3,180	.07	—	—
Precision production workers	580	.01	0	3
Selected textile and related setters, operators, and other related workers	19,960	.42	—	—
Laundry and drycleaning machine operators and tenders, except pressing	17,940	.38	0	30
Pressing machine operators, textile and garment	2,020	.04	0	4
Other machine setters, operators, and tenders, except metal and plastic	5,240	.11	—	—
Boiler operators and tenders, low pressure	3,160	.07	0	9
Other machine operators and tenders	2,080	.04	—	—
Hand workers, including assemblers and fabricators	730	.02	0	3
Plant and system workers	8,120	.17	—	—
Stationary engineers	7,020	.15	0	13
Other plant and system operators	1,100	.02	—	—
Motor vehicle operators	7,700	.16	—	—
Truckdrivers, light, including delivery and route workers	3,890	.08	(3)	14
Other motor vehicle operators	3,810	.08	—	—
Parking lot attendants	2,190	.05	0	5
Other transportation and material moving equipment operators	1,440	.03	—	—
Helpers, laborers and material movers, hand	10,000	.21	(3)	10

[1] Estimates for specific occupations with fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are not shown separately, but have been counted in the appropriate "All other" or summary level category.

[2] Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors are estimated at the level of 2 chances out of 3.

[3] Less than 0.5 percent.

NOTE: Dashes indicate data not available.

traditionally performed by physicians to lower costs while maintaining a high level of care for the patient.[15]

In contrast to the trend for registered nurses, employment of licensed practical nurses continued to drop, from 261,890 to 256,960, between 1989 and 1992. The share of industry employment held by licensed practical nurses dropped from 6.0 percent to 5.4 percent. The relative shifts in employment of registered nurses and licensed practical nurses was due to the need for more highly skilled nurses brought about by rapid technological change in the industry, and the decreasing need for bedside care, as inpatient admissions and average length-of-stays declined.[16]

The number and proportion of therapists continued to rise rapidly from 115,650 in 1989 to 141,110 in 1992 (or by 22.0 percent), while their share of industry employment rose from 2.7 percent to 3.0 percent. In particular, respiratory therapists showed tremendous growth, increasing by 30.5 percent (from 50,810 to 66,300) over the same period. As the population ages, hospitals face a greater need for therapists of all kinds.[17]

Employment of nonhealth professionals in hospitals has risen in response to complex information management requirements in the industry. For example, the number of computer scientists and related occupations grew from 18,340 to 23,560, a 28.5-percent increase. The number of management support workers, such as accountants, budget analysts, and personnel specialists, also increased significantly, from 53,800 to 68,280, or 26.9 percent.

Service occupations

Continuing a trend seen throughout the 1980's, employment of food service workers and cleaning and building service workers declined over the 1989–92 period. Employment of food service workers decreased by 1.0 percent, dropping from 195,560 to 193,520. While the decline was small, the share of industry employment dropped more substantially, from 4.5 percent to 4.1 percent. Cleaning and building service employment declined by 2.9 percent, from 182,870 to 177,520. The share of industry employment dropped from 4.2 percent to 3.7 percent.

As mentioned before, more hospitals are turning to contract management firms to provide various services that previously had been performed by hospital staff. Housekeeping, laundry, and food service are three common areas where contract services are used.[18] The Occupational Employment Statistics survey also publishes data on the percentage of establishments reporting each occupation surveyed. These data for 1992 offer further evidence of hospitals turning to contract management firms to provide services, as the percentage of establishments reporting many of the service occupations declined over the 1989–92 period.

For example, the percentage of hospitals reporting maids and housekeeping cleaners fell from 73 percent to 66 percent; for janitors and cleaners, the percentage dropped from 49 percent to 42 percent. Also dropping substantially was the percentage of hospitals reporting institution or cafeteria cooks (82 percent to 75 percent) and food preparation workers (60 percent to 54 percent). Other service workers, including housekeepers, guards and watch guards, bakers, and home health aides, also were reported by a smaller percentage of hospitals in 1992 than in 1989.

Overall, health service and related workers retained about the same share of industry employment in 1992 as they did in 1989, although employment increased for these workers, from 480,520 to 529,630. Within this group, however, some occupational employment shifts occurred which are worth noting. For example, employment of nursing aides, orderlies, and attendants increased by 6.6 percent, from 281,370 to 299,850 between 1989 and 1992; however, the share of industry employment declined from 6.5 percent to 6.3 percent, continuing a trend. Home health aides, still few in number, continued to grow rapidly. Employment in this occupation increased by 55.2 percent, from 12,220 to 18,900. This increase reflected the aging of the population, as well as the trend toward more outpatient treatments and a decrease in occupancy rates of hospitals.[19]

Miscellaneous occupations

Employment in the remaining major groups of occupations—sales and related; clerical and administrative support; production, construction, operating, maintenance, and material handling; and agricultural and related—continued to follow trends set in the 1980's. Sales and related workers continued to account for a tiny fraction of industry employment, 16,920 in 1992, up from 15,210 in 1989, an 11.2-percent increase. Clerical and administrative support occupations rose in absolute terms by 7.6 percent, from 737,390 to 793,360. However, the percentage share of industry employment of these occupations dropped slightly, from 17.0 percent to 16.7 percent.

Hospital employment of production, construction, operating, maintenance, and material handling occupations dropped both in actual numbers and as a share of industry employment. Employment decreased from 139,150 in 1989 to

136,520 in 1992, a decline of 1.9 percent, and their share of industry employment fell from 3.4 percent to 2.9 percent. Agricultural and related occupations remained a tiny portion of hospital employment, shrinking from 7,120 in 1989 to 6,390 in 1992.

Area staffing patterns

The Occupational Employment Statistics program has developed staffing pattern data to determine differences between establishments in metropolitan and nonmetropolitan areas. Approximately 83 percent of hospital employees worked in metropolitan areas in 1992. However, the percentage of hospital employment in metropolitan areas varies by State, and these differences between metropolitan and nonmetropolitan areas may account for a considerable portion of hospital staffing pattern variation among States.

Hospitals in metropolitan areas tend to differ considerably, by size and available resources, from hospitals in nonmetropolitan areas. These differences are presumed to have a significant impact on staffing patterns. Surveying all hospitals instead of only a sample allows analysts to develop data at the metropolitan/nonmetropolitan level, although the Occupational Employment Statistics sample was not designed to do so; [20] metropolitan/nonmetropolitan area data are not available through the survey for any other industries.

Hospitals in metropolitan areas tended to have a much higher percentage of employment in professional and technical occupations, comprising about 55 percent of industry employment, compared with 50.8 percent in nonmetropolitan areas in 1992. (See table 2.) In this major occupational group, physicians and surgeons accounted for 2.2 percent of industry employment in metropolitan hospitals, compared with about 1.1 percent in nonmetropolitan hospitals. Therapists held 3.1 percent of metropolitan hospital employment, compared with 2.5 percent of employment in nonmetropolitan hospitals. The most skilled nursing occupation, registered nurses, accounted for 25.7 percent of metropolitan hospital employment, but 21.5 percent in nonmetropolitan hospitals. While metropolitan hospitals employed substantially higher proportions of the most highly skilled health care occupations, they employed lower proportions of some paraprofessional occupations than did nonmetropolitan hospitals. For example, licensed practical nurses held 4.8 percent of metropolitan hospital employment, compared with 8.0 percent in nonmetropolitan hospitals; emergency medical technicians

Table 2. **Occupational employment in metropolitan and nonmetropolitan hospitals, by major occupational groups and selected detailed occupations, 1992**

Occupation	Metropolitan area		Nonmetropolitan area	
	Number	Percent distribution	Number	Percent distribution
Managerial and administrative occupations	177,000	4.5	39,460	4.9
Professional, paraprofessional, and technical occupations	2,144,480	55.0	406,150	50.8
Physicians and surgeons	86,670	2.2	9,080	1.1
Therapists	122,020	3.1	19,890	2.5
Registered nurses	1,001,850	25.7	172,300	21.5
Licensed practical nurses	186,540	4.8	63,920	8.0
Emergency medical technicians	14,080	0.4	10,010	1.3
Sales and related occupations	14,130	0.4	2,490	0.3
Clerical and administrative support occupations	660,080	16.9	124,800	15.6
Service occupations	791,380	20.3	201,610	25.2
Food and beverage preparation and service workers	148,890	3.8	40,980	5.1
Health service and related workers	409,970	10.5	109,370	13.7
Nursing aides, orderlies, and attendants	221,390	5.7	69,350	8.7
Cleaning and building service occupations	140,720	3.4	32,230	4.0
Agriculture and related occupations	5,010	0.1	1,240	0.2
Production and related workers	108,880	2.8	24,120	3.0

NOTE: Hospitals are categorized as SIC 806 in the *Standard Industrial Classification Manual* (U.S. Office of Management and Budget, 1987).

accounted for 0.4 percent of employment in metropolitan hospitals and 1.3 percent in nonmetropolitan hospitals.

Nonmetropolitan hospitals employed a greater concentration of health care workers related more to bedside care than to sophisticated technical treatments. This included a higher proportion of service workers overall, composing 25.2 percent of nonmetropolitan hospital employment, compared with 20.3 percent of employment in metropolitan hospitals. Health service workers were responsible for much of this difference, making up 13.7 percent of employment in nonmetropolitan hospitals, compared with 10.5 percent of industry employment in metropolitan areas. Within this minor occupational group, the largest difference was for nursing aides, orderlies, and attendants, who accounted for 8.7 percent of industry employment in nonmetropolitan hospitals, while holding a 5.7-percent share of metropolitan hospital employment. Also, there were differences in other service support occupations. For example, food and beverage preparation and service workers accounted for 5.1 percent of industry employment in nonmetropolitan hospitals, compared with 3.8 percent in metropolitan hospitals; cleaning and building service workers held 4.0 percent of hospital employment in nonmetropolitan areas and 3.6 percent in metropolitan areas. These differences may be attributed to the greater likelihood of metropolitan area hospitals contracting out for these services.

The staffing pattern differences between metropolitan and nonmetropolitan hospitals in 1992 may reflect a number of factors including the relatively smaller size and resource base of nonmetropolitan hospitals. As a result, nonmetropolitan hospitals may have less access to the most advanced medical technology and may provide only limited services. Patients would be required to visit metropolitan-area hospitals for more sophisticated diagnoses and treatments.

As health maintenance organizations continue to grow, they compete with hospitals as a salaried alternative to private practice for physicians. Some recent studies indicate that health maintenance organizations are now driving physician compensation, and this aggressive recruiting may be weakening the ability of smaller and more rural community hospitals to compete for physicians.[21] The larger proportions of physicians and other health care professionals in metropolitan hospitals may also result from a larger proportion of research and teaching hospitals in metropolitan areas. The greater proportion of paraprofessional and health service occupations in nonmetropolitan hospitals may indicate a greater focus on bedside patient care, rather than technology-intensive or sophisticated outpatient treatments.

State variations

Hospital staffing patterns differ substantially among States, according to 1992 State estimates from the Occupational Employment Statistics survey of hospitals. The estimates for each State are produced by its State Employment Security Agency, which cooperates with the Bureau of Labor Statistics in developing these survey data. The following sections and table 3 focus on a few of these differences by examining specific occupations.

Physicians and surgeons. Nationwide, physicians and surgeons accounted for 2.1 percent of employment in hospitals in 1992. However, this occupation's share of hospital employment varied considerably by State, ranging from less than 0.5 percent in a few States to about 5.5 percent in the District of Columbia. As the data indicate, the rate of physician employment in hospitals was highest in the District of Columbia and New York, reaching levels that were more than twice the national average. Rates in Colorado, Massachusetts, Michigan, Ohio, Rhode Island, and Vermont also were well above the national average. By comparison, the proportion of physicians employed by hospitals in 20 States was less than half the national average: Alabama, Alaska, Arkansas, Georgia, Hawaii, Idaho, Indiana, Iowa, Kentucky, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Mexico, North Dakota, South Dakota, Tennessee, Texas, and Wisconsin.

Rural and southern States, on average, had lower proportions of hospital-employed physicians. This pattern mirrors, to some extent, the staffing pattern differences between metropolitan and nonmetropolitan hospitals related to variations in size and levels of resources. Also, the States with the highest rates of physician employment by hospitals appear to be those with high concentrations of research and teaching hospitals. Greater concentrations of health maintenance organizations in some States also may explain lower direct physician employment by hospitals, because health maintenance organizations compete with hospitals in offering salaried employment opportunities to physicians.

Registered nurses. This occupational group accounted for 24.8 percent of hospital employment on average nationwide. States showed varying concentrations of registered nurses employed by hospitals, although these differences were not as large as those for physicians. The share of registered nurses in hospital employment was more than 20 percent above the national average in Alaska, Nevada, Oregon, and Washington. Concentrations of more than 20 percent below the

national norm were in Louisiana, Oklahoma, and Wyoming.

Service occupations. Lower skilled service occupations, unlike higher skilled professional occupations, tended to occupy a smaller concentration of employment in hospitals in urban areas. Although the District of Columbia had a very high rate of physician employment in hospitals, its percentage of employment of food preparation workers and maids and housekeeping cleaners was well below the national average. The same can be said for States with large urban areas, such as Massachusetts and Florida. Rural States, such as Montana, South Dakota, and Arkansas tended to have employment in these service occupations which exceeded the national average. This may be because hospitals in these areas often have fewer resources available to employ highly skilled professionals and to buy expensive technologies.

Table 3. Share of selected occupations in total hospital employment by State, 1992

[In percent]

State	Physicians and surgeons	Registered nurses	Food preparation workers	Maids and housekeeping cleaners
Total, United States	2.0	24.7	1.3	2.8
Alabama	.4	23.2	1.0	4.0
Alaska	0.9	30.2	1.0	1.6
Arizona	1.5	27.2	1.7	2.8
Arkansas	0.1	20.4	1.8	3.2
California	2.4	29.1	1.4	2.3
Colorado	1.3	28.1	1.4	2.2
Connecticut	3.8	24.0	1.1	—
Delaware	2.6	24.7	1.3	2.7
District of Columbia	5.5	25.7	.4	1.7
Florida	1.3	26.6	.9	2.7
Georgia	.7	21.2	1.8	3.3
Hawaii	.5	29.1	1.4	2.9
Idaho	.1	27.8	.8	3.0
Illinois	2.5	25.6	1.4	2.9
Indiana	.6	24.0	1.5	2.9
Iowa	.9	27.0	2.1	2.6
Kansas	1.3	22.6	1.4	2.5
Kentucky	.3	25.5	1.4	3.9
Louisiana	2.3	19.3	1.0	3.3
Maine	2.0	26.2	1.8	—
Maryland	1.3	24.4	.9	1.4
Massachusetts	3.2	23.8	1.1	2.5
Michigan	3.2	24.0	1.2	1.6
Minnesota	1.0	28.1	1.9	3.1
Mississippi	.9	21.5	.9	3.7
Missouri	2.2	21.3	1.1	2.6
Montana	.3	24.3	2.1	4.1
Nebraska	.3	25.0	1.8	3.1
Nevada	.7	31.2	1.5	3.3
New Hampshire	2.6	29.1	1.7	3.0
New Jersey	2.8	24.6	1.2	2.8
New Mexico	.3	26.6	.7	3.4
New York	4.8	21.7	1.1	3.4
North Carolina	2.2	25.8	1.6	2.8
North Dakota	.6	24.4	2.3	3.6
Ohio	3.0	25.3	1.3	2.2
Oklahoma	.5	19.7	1.6	2.4
Oregon	1.8	30.7	1.0	3.3
Pennsylvania	2.2	25.6	1.3	2.9
Rhode Island	4.1	24.6	1.5	2.2
South Carolina	2.4	23.1	1.3	2.5
South Dakota	.3	28.4	2.2	3.3
Tennessee	.8	22.0	1.2	3.0
Texas	.7	23.0	1.2	3.0
Utah	1.3	28.1	1.0	2.1
Vermont	3.6	27.0	1.2	3.8
Virginia	1.8	24.1	1.3	1.9
Washington	1.5	30.3	1.1	3.2
West Virginia	1.6	24.7	1.7	2.7
Wisconsin	.4	27.0	2.1	—
Wyoming	1.2	21.5	1.7	1.9

NOTE: Dashes indicate data not available.

Perspectives of the survey

The Occupational Employment Statistics 1992 survey of hospitals provides data that can be examined from several perspectives. The changes taking place in hospital staffing patterns can be linked to factors such as changing legislation, technology, and business practices. For example, surveys showing that hospitals increasingly use contract management firms to provide services are supported by the Occupational Employment Statistics survey data on the percent of hospitals reporting individual occupations. Such data indicate that a smaller proportion of hospitals employed service workers in 1992 than in 1989.

In addition, Occupational Employment Statistics data can be used to underscore differences in hospital employment, not only among different parts of the country, but also between metropolitan and nonmetropolitan areas. This information can be useful in identifying differences in the type of care that is available to various segments of the population.

THIS ARTICLE has touched many aspects of employment in hospitals, including the continuing growth in employment of registered nurses through 1992. However, recent surveys of hospitals have indicated that many hospitals plan to decrease their employment of registered nurses in an effort to cut costs. Hospitals would replace many registered nurses with less costly workers who have less training and who would perform many of the nonmedical tasks that previously have been performed by registered nurses.[22] If, as these surveys suggest, a large number of hospitals reduce their employment of registered nurses, the results of this practice should be reflected in the 1995 Occupational Employment Statistics survey of hospitals.

Due to the nature of the health care industry, characterized by rapid technological change, occupational employment in hospitals is never static. In addition, with the increasing emphasis

on government-sponsored health care reform at the State level and potentially at the Federal level, the next several years should be a time of significant changes in hospital staffing patterns. Whether these changes will represent a continuation of past industry employment trends, or mark a significant reversal, has yet to be determined. □

Footnotes

[1] Metropolitan Areas are defined by the U.S. Office of Management and Budget under standards published in the Federal Register on January 3, 1980, and definitions as of June 30, 1990. Generally speaking, a Metropolitan Statistical Area is a "free-standing" urban area that meets a specified size criteria.

[2] The Occupational Employment Statistics program is a Federal-State cooperative survey of nonfarm establishments designed to develop current occupational employment data of wage and salary workers by industry. The survey follows a 3-year cycle: in the first year, it covers manufacturing industries, hospitals, and agricultural services; in the second year, mining, construction, finance, and service industries; and in the third year, trade, transportation, communications, public utilities, education, and government services industries. The survey is based on a probability sample, stratified by industry, geographic area, and employment size of firm.

[3] *Standard Industrial Classification Manual* (U.S. Office of Management and Budget, 1987), pp. 387–88.

[4] Kay Anderson and Barbara Wootton, "Changes in hospital staffing patterns," *Monthly Labor Review*, March 1991, pp. 3–9.

[5] Lisa Scott, "Contract Management Survey," *Modern Healthcare*, Aug. 24, 1992, p. 65.

[6] Scott, "Contract Management," p. 51.

[7] Rob Hard, "Hospitals look to hospitality service firms to meet TQM goals," *Hospitals*, May 20, 1992, p. 56.

[8] Hard, "Hospitals," p. 58.

[9] Terese Hudson, "Use of health professionals poses payment, authority conflicts," *Hospitals*, Oct. 5, 1990, p. 48.

[10] Hudson, "Health professionals."

[11] *Ibid.*

[12] Scott, "Contract Management," p. 65.

[13] Kathy Hull, "Employment of full-time staff outpaces part-time growth," *Hospitals*, Nov. 5, 1992, p. 46.

[14] Since 1992, some sources indicate that hospitals are laying off registered nurses and replacing them with lower paid "caregiver" positions such as "patient-care technicians" and "patient service associates." See David Burda, "Hospitals cut labor force in anticipation of reform," *Modern Healthcare*, June 21, 1993, pp. 27–28, and David Burda, "Cutting down: Hospitals' labor costs are top target, annual human resources survey shows," *Modern Healthcare*, Dec. 20–27, 1993, p. 56.

[15] Hudson, "Health professionals," p. 46.

[16] Hull, "Employment of full-time staff," p. 46.

[17] Paula Eubanks, "Hospitals see worker shortages continue," *Hospitals*, Nov. 5, 1992, p. 72.

[18] Scott, " Contract Management," p. 65.

[19] Hull, "Employment of full-time staff, p. 46.

[20] For most industries, the Occupational Employment Statistics survey selects and weights sample units to be representative of all establishments in terms of State, industry, and employment size. Due to the use of a stratified sample, occupational employment estimates can be produced only at those levels. In the case of hospitals, however, Occupational Employment Statistics surveys the universe, rather than a sample, with each unit representing only itself. As a result, occupational estimates for hospitals can be calculated based on establishment characteristics other than State, industry, or size.

[21] Mark M. Hagland, "Compensation, social trends alter hospital-MD relations," *Hospitals*, Nov. 20, 1991, p. 22.

[22] Burda, "Cutting down," Dec. 20–27, p. 58.