

## Distribution of U.S. Health Care Providers Residing in Rural and Urban Areas

### KEY FINDINGS

- Among rural residents, there are proportionately more providers in occupations that require *fewer* years of education and training. Among urban residents, there are proportionately more providers in occupations that require *greater* years of education and training.
- Some sectors of the health care workforce have proportionately fewer providers living in rural areas, regardless of amounts of education and training.

This fact sheet presents the supply and distribution of practitioners in 32 health occupations across urban and rural areas, based on their place of residence. Their distribution is examined through a comparison of the number of providers per capita residing in rural and urban areas.<sup>1</sup>

The data presented in Table 1 show a very specific trend: among rural residents, there are proportionately more providers in occupations that require fewer years of education and training, than providers in occupations which require more years of education and training. For example, there are more EMTs and paramedics per capita residing in rural as opposed to urban areas, and more physicians and surgeons per capita residing in urban as opposed to rural areas.

The greater representation of workers with less education and training living in rural areas is further evident within individual sectors of the health care workforce. For example, among nursing occupations, although the combined number of registered nurses (RNs) and licensed practical and licensed vocational nurses (LPNs/LVNs) per capita is similar in rural and urban areas (117.1 and 114.1 per 10,000 people, respectively), rural areas have more LPNs/LVNs per capita, whereas urban areas have more RNs.

Two sectors of the health care workforce, oral health and behavioral health, have proportionately fewer providers living in rural areas regardless of education and training levels. All three key oral health occupations – dentists, dental hygienists and dental assistants – show significantly lower per capita numbers of practitioners residing in rural areas. Similarly, there are fewer behavioral health practitioners (psychologists, social workers, and counselors) in rural areas.

Though this analysis looks at patterns of residence for health care workers, it does not assess the appropriateness of either a particular provider-to-population ratio or the distribution of occupations and practitioners across urban and rural areas. Nor does the analysis draw conclusions as to why variations in distributions, between or within sectors of the health care workforce exist. Variance in the distribution across urban and rural areas may reflect individual choices or may reflect the fact that some providers are located in/near hospitals or other institutions that are not equally distributed. For some occupations, differences in staffing patterns, education and training opportunities, preferences for care, or dynamics of relationships between workers and their communities may be contributing factors among other potential influences.

<sup>1</sup> Due to data limitations, results presented here can only account for the residence of providers, not their work location. See the “About the Data” section for additional information on geographical definitions and selection rationale for the occupations included.

**Table 1. Health Occupations\* in Urban and Rural Areas, 2008-2010**

| Occupation  | Providers in Rural Areas | Total Providers | Providers per 10K, Rural Areas | Providers per 10K, Urban Areas | Ratio of Per Capita Rural to Urban Providers |
|---|--------------------------|-----------------|--------------------------------|--------------------------------|--|
| <b>Life, Physical, and Social Science Occupations</b>     |                          |                 |                                |                                |  |
| Psychologists   | 15,837                   | 188,708         | 3.0                            | 6.8                            | 0.45   |
| <b>Community and Social Service Occupations</b>           |                          |                 |                                |                                |  |
| Counselors  | 44,035                   | 295,263         | 8.4                            | 9.9                            | 0.86   |
| Social Workers  | 74,972                   | 517,628         | 14.4                           | 17.4                           | 0.83   |
| <b>Healthcare Practitioners and Technical Occupations</b> |                          |                 |                                |                                |  |
| Chiropractors   | 9,724                    | 56,979          | 1.9                            | 1.9                            | 1.00   |
| Dentists  | 18,673                   | 168,299         | 3.6                            | 5.9                            | 0.61   |
| Dietitians and Nutritionists                              | 12,405                   | 92,779          | 2.4                            | 3.2                            | 0.75   |
| Optometrists  | 5,722                    | 36,858          | 1.1                            | 1.2                            | 0.90   |
| Pharmacists   | 33,162                   | 256,918         | 6.4                            | 8.8                            | 0.72   |
| Physician and Surgeons                                    | 68,135                   | 861,463         | 13.1                           | 31.2                           | 0.42   |
| Physician Assistants                                      | 11,942                   | 99,651          | 2.3                            | 3.4                            | 0.66   |
| Occupational Therapists                                   | 10,291                   | 86,728          | 2.0                            | 3.0                            | 0.66   |
| Physical Therapists                                       | 22,890                   | 188,986         | 4.4                            | 6.5                            | 0.67   |
| Respiratory Therapists                                    | 16,373                   | 102,117         | 3.1                            | 3.4                            | 0.93   |
| Speech-Language Pathologists                              | 16,201                   | 121,963         | 3.1                            | 4.2                            | 0.75   |
| Registered Nurses   | 444,688                  | 2,824,641       | 85.3                           | 93.5                           | 0.91   |
| <b>Health Technologists and Technicians</b>               |                          |                 |                                |                                |  |
| Clinical Laboratory Technologists and Technicians         | 49,655                   | 354,652         | 9.5                            | 12.0                           | 0.79   |
| Dental Hygienists   | 23,680                   | 151,933         | 4.5                            | 5.0                            | 0.90   |
| Diagnostic Related Technologists and Technicians          | 47,644                   | 314,113         | 9.1                            | 10.5                           | 0.87   |
| EMTs and Paramedics                                       | 38,984                   | 187,686         | 7.5                            | 5.8                            | 1.28   |
| Health Practitioner Support Technologists and Technicians | 87,352                   | 527,657         | 16.9                           | 17.3                           | 0.98   |
| Licensed Practical and Licensed Vocational Nurses         | 165,980                  | 690,038         | 31.8                           | 20.6                           | 1.55   |
| Medical Records and Health Information Technicians        | 17,552                   | 111,297         | 3.4                            | 3.7                            | 0.91   |
| Opticians, Dispensing                                     | 8,526                    | 54,375          | 1.6                            | 1.8                            | 0.91   |
| <b>Healthcare Support Occupations</b>                     |                          |                 |                                |                                |  |
| Nursing, Psychiatric and Home Health Aides                | 486,925                  | 2,328,702       | 93.4                           | 72.3                           | 1.29   |
| Physical Therapist Assistant/ Aide                        | 13,700                   | 70,905          | 2.6                            | 2.2                            | 1.17   |
| Massage Therapists  | 17,901                   | 139,215         | 3.4                            | 4.8                            | 0.72   |
| Dental Assistants   | 42,753                   | 283,593         | 8.2                            | 9.5                            | 0.87   |
| Medical Assistants and Other Health Support               | 128,112                  | 845,117         | 24.6                           | 28.2                           | 0.87   |
| Personal Care Aides                                       | 194,582                  | 1,022,998       | 37.3                           | 32.5                           | 1.15   |
| Medical / Health Services Managers                        | 77,810                   | 560,870         | 14.9                           | 19.0                           | 0.79   |
| Secretaries/Administrative Assistants                     | 110,512                  | 652,618         | 21.2                           | 21.3                           | 1.00   |

\* Occupations in this table are listed and titled in line with the U.S. Government's Standard Occupational Classification system.

### About The Data

The American Community Survey (ACS), conducted by the U.S. Census Bureau, surveys approximately 1 percent of U.S. households annually and obtains information on individuals' occupations and residence. Therefore, in this analysis, the geographic factor examined is the provider's household location, not their place of employment. The 2008-2010 ACS three-year file was used in order to improve the precision of estimates. For most estimates, relative standard errors are quite small. All estimates reported in this brief have a relative standard error less than 8 percent.

The ACS public-use files, often referred to as ACS Public Use Microdata Sample (PUMS) files, contain a geographic variable that indicates the Public Use Microdata Area (PUMA) in which a household is located. A PUMA is an area with a minimum population of 100,000; smaller geographical units are not provided in order to protect the confidentiality of survey respondents. PUMAs can be comprised of multiple counties or subparts of a county. The Economic Research Service at the USDA constructed a classification for each county or county subpart in a PUMA so they could be defined as either metropolitan (metro) or non-metropolitan (non-metro) using the USDA 2003 Rural-Urban Continuum Codes (RUCC). This classification was applied in the analysis presented here. The data file containing the USDA classification of PUMAs as metropolitan or nonmetropolitan was obtained by the Health Resources and Services Administration from USDA in September 2012. RUCC forms a scheme that distinguishes metro counties by the population size of their metro area, and non-metro counties by degree of urbanization and adjacency to a metro area or areas. The Office of Management and Budget's metro and non-metro categories have been subdivided into three metro and six non-metro groupings, resulting in a nine-part county classification. The values of the RUCC that OMB uses to define metro counties are those with RUCC values of 1, 2, or 3. All other counties (values 4 through 9) are defined as non-metro. Of the 2,071 total PUMAs in the US, all of the population lived in metropolitan counties in 1,596 PUMAs (77% of all PUMAs). In 225 PUMAs (11%), the population all lived in a nonmetropolitan county. The remaining 250 PUMAs (12%) contained both metropolitan and nonmetropolitan counties.

The 32 occupations included in this brief were selected based on the following criteria: (1) the occupation is among those with the largest number of jobs as identified by the Standard Occupation Classification (SOC) code, (2) the occupation is among the fastest growing occupations as projected by the U.S. Bureau of Labor Statistics (BLS), and/or (3) the occupation is among the top 35 occupations that have adequate data (i.e., sample sizes) available in the three-year 2008 to 2010 ACS PUMS file. These determinations were made based on the BLS Occupational Employment Statistics National May 2010 Employment and Wage Estimates.

### The National Center for Health Workforce Analysis

The National Center for Health Workforce Analysis informs public and private-sector decision-making related to the health workforce by expanding and improving health workforce data, disseminating workforce data to the public, improving and updating projections of the supply and demand for health workers. For more information about the National Center for Health Workforce Analysis please visit our website at <http://bhpr.hrsa.gov/healthworkforce/index.html>.