Health Care Job Density

This map estimates the number of health care jobs per unprotected acre within each census block group in 2010.

Why is the health care job density important?

Health care job density is one of many measures or variables used by city planners to examine the proportions of residents, jobs, and services in urban areas and to guide development planning for efficient city design and transit networks. Besides indicating the number of jobs per unprotected acre within a specific job class, the metric also suggests a level of economic activity in the block group. Job densities in particular job classes may be compared with overall employment density to highlight job distributions within and among block groups.

Photo: Operating Room, N. Grohmann, Wikimedia Commons

The health care employment classification contains jobs providing medical care and social assistance. The subsectors in this category are defined by the expertise required. The health care sector includes workers in ambulatory health care services (doctors, dentists, and laboratory technicians), hospitals, nursing and residential care facilities (nurses and home care aides), and social assistance (individual and family services, vocational training, and community food and housing).[1] In May of 2015, over 12 million workers were employed in the health care sector.[2] Because of the continuing overall demand for health care, jobs in this sector are expected to increase 30% by 2020.[3]

Wages within the class range from entry-level wages to managerial salaries. Health care jobs fall into two main categories: professional and technical workers and support workers. Professional and technical workers require higher levels of education and they are more highly paid as a result. Health care support workers may not have any special education beyond high school, and as a result, they tend to qualify for low-wage health care jobs.[3]

Service jobs of all types presently make up about 84% of the overall economy.[4] The health care category in the Smart Locations database is one of a group of job categories that is often listed in the service sector in the economics literature. In 2014, health care accounted for $3 trillion or over 17.5% of the U.S. gross domestic product.[5] Private health care premiums and Medicare spending increases slowed for the previous 5 years in part because of the recession as well as the implementation of the Affordable Care Act.[6] Health care jobs grew throughout the recession and health care is presently the leading sector for job growth during the recovery. Because the majority of health care jobs provide a personal service and rely on direct customer contact, they are not as subject to offshoring as are office, service, and manufacturing jobs. However, offshoring does occur for medical transcription and radiology, services that can be done remotely and electronically.

Health care job densities are higher in urban areas and particularly in larger metropolitan areas where major medical centers are located. Health care job densities are extremely low in remote rural areas of the country. About 20 percent of Americans live in rural areas, but only 9 percent of physicians practice there.[5] In urban areas, knowing the distribution of various job densities is prerequisite to planning for transportation networks and affordable housing developments that are accessible to jobs of all wage classes.

Smart Growth planning programs promote the development of a diversity of residences, employment opportunities, and services within compact neighborhoods. Planning strategies promote housing in job-rich areas and new employment centers in dense residential zones. Resident workers with easy accessibility to a diversity of job types in various wage classes can reduce not only vehicle miles traveled (VMT) but fuel consumption and greenhouse gas emissions (GHGs) associated with employee commuting trips.

How can I use this information?

This map, Health Care Job Density, allows users to evaluate various block groups by the number of health care jobs per

unprotected acre relative to other characteristics. Comparing this map to areas of relatively high-, low- and middle-wage worker residential density may indicate the effectiveness of community design and road networks to link potential workers with job opportunities. Planners may want to promote increased affordable housing in block groups with high health care employment density and a low resident working population. They may identify neighborhoods with optimal densities of jobs and housing that can support new or enhanced transit service. Economic development agencies in regions with limited transit service may use this map to encourage the siting of new health care centers in areas that are highly accessible to the regional workforce.

This data layer may be compared to other EnviroAtlas demographic and Smart Location data layers. The aerial-image base map (seen by increasing the transparency of the map layers) can be used to show the spatial distribution of the built environment within the block groups.

How were the data for this map created?

The 2010 Census LEHD (Longitudinal Employer-Household Dynamics) database gave the total number of health care jobs (NAICS sector 62) by U.S. Census block group. EPA then isolated areas of the block group that were not protected from development. NAVTEQ data (2011) provided the location of federal, state, and local parks, zoos, cemeteries, public beaches, and water bodies. The Protected Area Database (PAD-US v1.3) provided the locations of parks and protected natural areas as well as privately-owned land area with restrictions on development (such as conservation easements). The relevant portions of each protected area dataset were intersected and dissolved into a single polygon layer that represented all areas in which development was restricted. The resulting protected areas layer was then integrated with the block group areas in GIS. EPA used this block group unprotected acreage as the denominator to calculate health care employment density. The metric, listed as D1c8_Hlth10, may be found in the Smart Location Database User Guide.

What are the limitations of these data?

It is important to remember that jobs or residences are not distributed evenly throughout the area of a block group. A diversity of land uses or activities may be sparsely distributed in large census block groups. On the other hand, a small block group may be uniform and low in diversity, but it may be located within easy access to a more diverse block group. Using the aerial-image base map will give an indication of the proportions of developed and undeveloped land in each census block group. The U.S. Census Bureau maintains a website on methodology and reliability of data.

How can I access these data?

EnviroAtlas data can be viewed in the interactive map, accessed through web services, or downloaded. Data from the 2010 U.S. Census may be viewed on and downloaded from the census website.

Where can I get more information?

A selection of resources on the relationships among health care jobs, city planning, and environmental quality is listed below. More details about this metric are available in the Smart Location Database User Guide. In addition, EPA's Smart Growth Program provides tools, resources, and technical assistance to communities seeking to pursue vibrant compact, mixed-use, walkable, and transit-oriented development strategies to protect public health and the environment. For additional information on the data creation process, access the metadata for the data layer from the drop down menu on the interactive map table of contents and click again on metadata at the bottom of the metadata summary page for more details. To ask specific questions about this data layer, please contact the EnviroAtlas Team.

Acknowledgments

Selected Publications

1. U.S. Bureau of Labor Statistics. 2015. Health Care and Social Assistance: NAICS 62. Accessed June 2015.

2. The Kaiser Family Foundation. 2014. Total health care employment. Accessed June 2015.

3. Carnevale, A.P., N. Smith, A. Gulish, and B.H. Beach. 2012. Healthcare. Georgetown Public Policy Institute, Georgetown University, Washington, D.C. 112 p.

4. Haksever, C., and B. Render. 2013. Service management: An integrated approach to supply chain management and operations. FT Press, Upper Saddle River, New Jersey. 528 p.

5. Centers for Medicare and Medicaid Services, 2014. Historical national health expenditure data. Accessed June 2015.

6. Martin, A., M. Hartman, J. Benson, A. Catlin and the National Health Expenditure Accounts Team. 2015. National health spending in 2014: Faster growth driven by coverage expansion and prescription drug spending. *Health Affairs* 35 (1):1–11.