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Eds and Meds: Variability of Anchor Institution Employment Impacts Across U.S. Regions

COMMUNITY DEVELOPMENT & REGIONAL OUTREACH

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Introduction: Universities and Hospitals as Anchor Institutions

Since 2021, the Federal Reserve Bank of Philadelphia has tracked the economic impacts of universities and hospitals on regional economies in the United States through its anchor economy dashboard. Universities and hospitals are often referred to as *anchor institutions* because they tend to be anchored in place over decades and play a distinctive role in their local communities. As major purchasers of local goods and services, as large regional employers owing to the labor-intensive nature of the education and healthcare industries, and as providers of community benefits from health and education to arts and recreation, universities and hospitals can anchor their communities. The local economic impact of anchor institutions extends to both firms that supply universities and hospitals with goods and services (e.g., food service, IT, consulting) and firms that benefit from the local spending of anchor institution employees (e.g., retail, restaurants).

There are additional benefits for communities with anchor institutions beyond the direct, indirect, and induced spending from the institutions' operations. For instance, higher education and healthcare have been shown to be countercyclical, often stabilizing regional economies during downturns when tradable sectors (e.g., technology, manufacturing) experience declines.[1] And other research identifies the ways higher education and hospital institutions benefit local communities through supporting other community nonprofits, providing public access to institutions' amenities, and attracting additional employers eager to be proximate to health and education services.[2]

Anchor institutions have become critical components of our modern economy because of their multifaceted regional economic impacts. In this research brief, we take advantage of a new dimension of the anchor economy dashboard data that provides separate economic impact figures for hospitals and for higher education institutions in a region. With the impacts of anchor institutions broken out in this way by sector, we have the opportunity to examine how hospitals and universities impact the national and local economies differently. We use employment impacts of universities and hospitals as our metric of analysis throughout this brief and find that hospitals account for a larger share of anchor employment in 90 percent of regions.[3]

As we introduce new anchor institution impact data for 2024 — building on previous waves of anchor institution impacts for 2004 and 2019 — we focus specifically on hospital employment impacts. Using the new anchor institution data, we examine the share of anchor institution employment impacts accounted for by hospitals across regions, compare the rate of hospital and higher education–related job growth from 2004 to 2024, and offer explanations for hospital employment dominance within the anchor economy as a whole. We end with some considerations about the variability of higher education and hospital impacts for communities in light of issues such as rural hospital closures, declining college enrollments, and population change.

Hospital Employment Impacts in Light of National Job Growth and Increased Hospital Closures

Hospitals are a particularly important part of the anchor institution economic impact story because they embody two opposing trends: healthcare emerging as a national

[1] Robert Calvert Jump and Adam Scavette, "Do Research Universities Recession Proof Their Regions? Evidence from State Flagship College Towns," *Journal of Economic Geography*, 2025. Also, see Burcu Eyigungor, "Understanding Job Growth," *Economic Insights*, 2025 Quarter 2, www.philadelphiafed.org/the-economy/macroeconomics/understanding-job-growth.

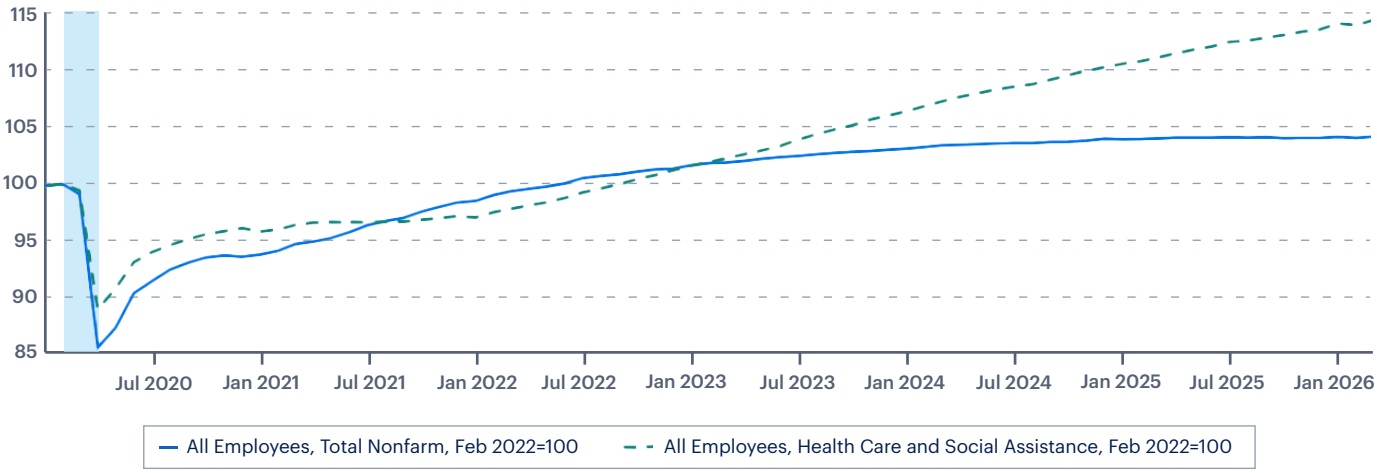
[2] Timothy J. Bartik, George A. Erickcek, "Higher Education, the Health Care Industry, and Metropolitan Regional Economic Development: What Can 'Eds & Meds' Do for the Economic Fortunes of a Metro Area's Residents?" Upjohn Institute Working Paper No. 08-140, 2007.

[3] Focusing on employment impacts allows us to discuss the economic impacts of anchor institutions in terms of the number of jobs they add to a region's economy (although our results remain similar if we instead focus on GDP or income).

jobs engine and the acceleration of hospital closures.[4] The healthcare industry has become not only our nation's largest industry by employment[5] but also its largest contributor to overall job growth in recent years.[6] Figure 1 shows that over the past six years, healthcare employment has grown at over three times the pace of overall employment (14 percent versus 4 percent).[7] Additionally, earnings grew roughly twice as fast for healthcare workers as for nonhealthcare workers from 1980 to 2022, with much of the wage growth occurring among nurses and midlevel occupations (e.g., physician assistants, certified nurse midwives), making the industry a "middle-class jobs engine."[8] Yet hospital closures — particularly in rural communities — are simultaneously increasing. These closures leave communities not only without nearby health services but also without a vital source of quality jobs.[9] In this context of healthcare driving national employment growth, consistent with an increase in local hospital closures, it is particularly important to single out hospital economic impacts from higher education economic impacts within the overall anchor economy.

FIGURE 1

Total Nonfarm Payroll Employment vs. Health Care and Social Assistance Employment, 2020–2026 (Index 100=February 2020)



NOTES: Shaded areas indicate U.S. recessions.

SOURCE: U.S. Bureau of Labor Statistics via FRED®

[4] The Kaiser Family Foundation identifies more hospitals closing than new hospitals opening between 2010 and 2023, with 300 hospitals closing and 192 opening during this period. The Sheps Center for Health Services Research tracks rural hospital closures specifically, with the number rural hospital closures since 2010 at 152.

[5] Joshua D. Gottlieb, Neale Mahoney, Kevin Rinz, and Victoria Udalova, "The Rise of Healthcare Jobs," NBER Working Paper No. 33583, 2025, www.nber.org/system/files/working_papers/w33583/w33583.pdf.

[6] Abha Bhattarai and Luis Melgar, "If Not for This One Industry, the U.S. Labor Market Would Look a Lot Worse," *The Washington Post*, Feb. 14, 2026, www.washingtonpost.com/business/2026/02/14/health-care-industry-fuels-employment/.

[7] Figure 1 displays employment in the two-digit North American Industry Classification System (NAICS) healthcare and social assistance sector, which includes a wider array of establishments (e.g., offices of physicians, nursing care facilities) than the three-digit NAICS code for Hospitals used to define the hospital sector in the anchor dashboard.

[8] Gottlieb, Mahoney, Rinz, and Udalova, "The Rise of Healthcare Jobs."

[9] Jacob Vogler, "Rural Hospital Closures and Economic Decline," working paper, 2020, dx.doi.org/10.2139/ssrn.3750200.

The 2024 Anchor Economy Dashboard Dataset

The Philadelphia Fed's anchor economy dashboard presents the economic impacts of universities and hospitals in 520 regions that compose the United States. The dashboard has been recently updated to include the economic impacts as of 2024. Impacts are expressed as direct (resulting from institutional spending on their operations), indirect (resulting from anchor institutions purchasing goods and services from regional businesses and firms), and induced (resulting from the spending of anchor employees in the regional economy). Impacts are captured for regional employment, income, and GDP. In addition, these economic impacts are identified for hospitals and higher education institutions both separately and together.[10] Displaying impacts for higher education and hospitals separately represents a new dimension to the anchor economy dashboard, one that allows users to understand whether it is their region's universities, hospitals, or both that support jobs and drive economic impact. The 2004 anchor institution data previously displayed on the anchor dashboard have been updated to also present hospital and higher education impacts separately, allowing dashboard users to see how anchor impacts have changed by sector in regions across the country over a 20-year period.

As with previous waves of the anchor institution dashboard, the 2024 data include a reliance index metric[11] that describes how dependent a region is on higher education and hospitals for economic activity. A reliance index of 1.0 indicates that a region's concentration of higher education and hospital economic activity is identical to that of the nation. The reliance index ranges from a low of 0.15 for Midland, TX (where anchor reliance is only 15 percent of that of the nation) to a high of 4.07 in Morgantown, WV (where anchor reliance is over 4 times that of the United States). Regions with the highest reliance index overall tend to be college towns with a population under 500,000. These are places where the regional economy has largely been built around a major research university (e.g. Morgantown, WV, or Ithaca, NY, with reliance index values of 4.07 and 3.71, respectively). On the other hand, large regions that have a significant concentration of research universities, colleges, and health systems (e.g., Philadelphia-Camden-Wilmington, PA-NJ-DE-MD or Boston-Cambridge-Newton, MA-NH) tend to have reliance scores closer to 1. These large regions have greater industry diversity than smaller college towns, despite the presence of large universities, colleges, and health systems, resulting in lower anchor-related reliance within their regional economies.

Hospitals Tend to Dominate Regional Anchor Employment

With impacts for hospital and higher education institutions now broken out separately in the anchor dashboard, we can see the relative strength of hospitals as anchor employers relative to higher education institutions. With the exception of some college towns — smaller regions with large research universities — it is actually hospitals that account for the majority of anchor-related employment impacts in most regions. Figure 2 shows the distribution of hospital-related employment as a share of total anchor employment impacts across regions. In 90 percent of regions, hospital-related employment constitutes over half of total anchor-related employment. Higher education–related employment accounts for more than 50 percent of anchor employment impacts in just 10 percent of regions. Nationally, hospital-related employment makes up 70 percent of anchor employment impacts, while higher education employment impacts make up the other 30

[10] See the anchor dashboard methodology for a description of how direct, indirect, and induced impacts were derived and for detailed definitions for employment, income and GDP.

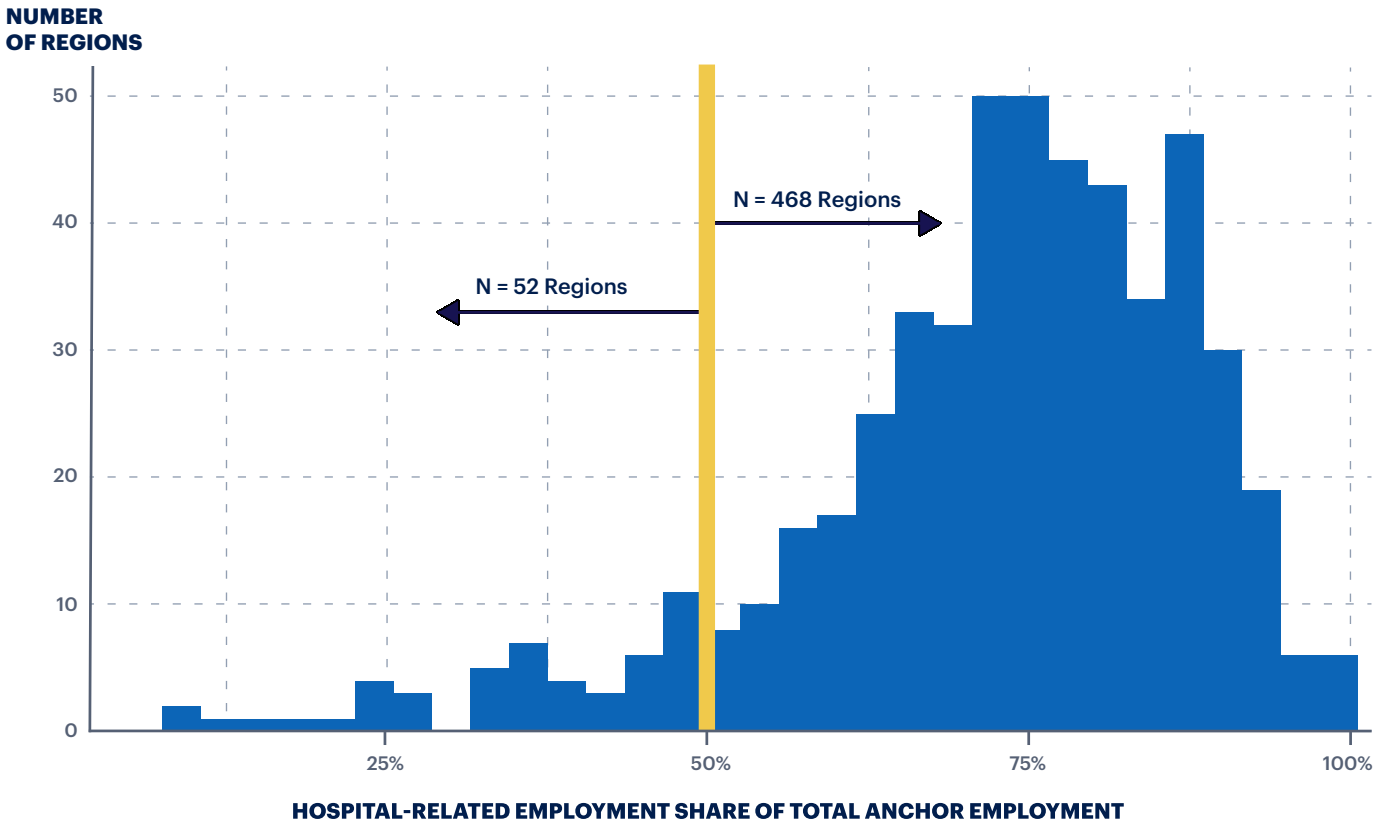
[11] The reliance index is calculated as the average of the location quotients for anchor-related job, income, and GDP impacts for each region. In other words, the reliance index is calculated by dividing each region's employment, income, and GDP impact from anchor institutions by its total regional employment, income, and GDP from all sectors in the regional economy. Each of these ratios is then divided by the equivalent ratio calculated for the U.S. economy as a whole, yielding a separate location quotient for employment, income, and GDP. The location quotients are then averaged together to yield the reliance index.

percent.[12] In certain regions with high reliance on anchor institutions, like Cleveland, OH; Shreveport-Bossier City, LA; Grand Rapids-Wyoming-Kentwood, MI; and Little Rock-North Little Rock-Conway, AR, hospitals account for over 85 percent of anchor-related employment (Table A1).

We can identify a number of factors that contribute to hospital employment dominating in the anchor economy in most regions. There are more hospitals than higher education institutions in the country — 6,100 versus 3,802.[13] Healthcare is provided around-the-clock to residents of all ages and in such a way that one patient is cared for by multiple people, from nurses aides, to registered nurses, to physicians. Higher education is more time-bound, even seasonal, focused on serving a smaller percentage of the population,[14] with an educational service delivery model that typically involves one instructor for many students. The anchor dashboard data makes concrete how these differences in healthcare and educational service delivery show up in employment impacts for each sector.

FIGURE 2

Distribution of Hospital-Related Employment Shares Across Regions, 2024



SOURCE: Anchor Economy Dashboard data (2024)

[12] The classification of employees at academic medical centers (e.g., Penn Medicine, Loyola University Health System) in the dashboard depends on whether the university and medical center are separate or combined entities under a state's unemployment insurance program, which serves as the primary source for the Quarterly Census of Employment and Wages (QCEW). If combined under one entity, the institution may not disaggregate by establishment or worksite in its Quarterly Contribution Report, although some may do so using the BLS's supplemental Multiple Worksite Report (MWR). According to the BLS, 34 states mandate the completion of the MWR. For more information on the QCEW, see www.bls.gov/cew/questions-and-answers.htm.

[13] The count of higher education institutions is from the Integrated Postsecondary Education Data System (IPEDS), and the count of hospitals is from the American Hospital Association (AHA). The number of institutions is not indicative of their size or their number of employees.

[14] In 2023, 68 percent of postsecondary students at degree-granting institutions were under the age of 25. U.S. Department of Education, National Center for Education Statistics, IPEDS, fall enrollment component final data (2003–2023): https://nces.ed.gov/ipeds/trendgenerator/app/answer/2/8?f=2%3D1.

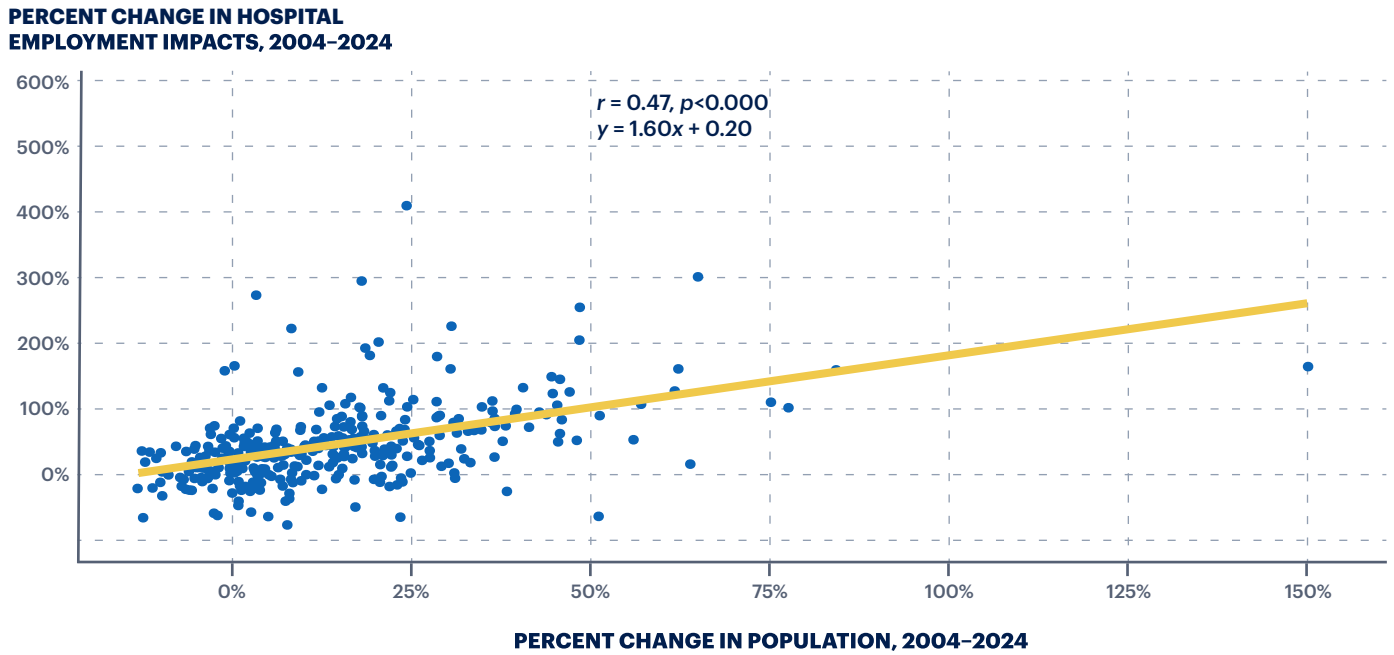
Hospital-Related Employment Growth Outpaced Higher Education-Related Employment Growth from 2004 to 2024

The 2024 anchor data also allow users to examine growth in regional hospital and higher education impacts from 2004 to 2024 for the 336 regions with consistent geographies in our data.[15] Over this 20-year period, hospital-related employment grew at a faster rate than higher education-related employment in most regions. The median percent increase for hospital-related employment was about 35 percent, versus a median increase of 19 percent for higher education-related employment. While hospitals are both more numerous and more labor intensive than higher education institutions, this faster rate of hospital-related employment growth requires additional examination.

In Figures 3a and 3b, we focus on the relationship between population growth and anchor-related job growth weighted by population as an explanation of hospitals' faster rate of employment growth as compared with higher education. As regions grow in population, we expect demand for healthcare to increase as more people rely on these services. At the same time, higher education is likely less sensitive to shifts in regional population, given that these institutions tend to serve a much smaller share of the local population. In other words, everyone needs a hospital, but only a portion of a region's population tends to use higher education services (i.e., 18–24 year olds).[16] Figures 3a and 3b support these assumptions, showing a stronger relationship between population growth and hospital-related employment growth compared with higher education–related employment growth. A 1 percentage point increase in population growth is associated with a 1.6

FIGURE 3A

Percent Change in Hospital Employment Impacts vs. Population Growth, 2004–2024



NOTE: We weight the above analysis by regional population in 2024. Hospital employment impacts consist of the sum of direct, indirect, and induced employment.

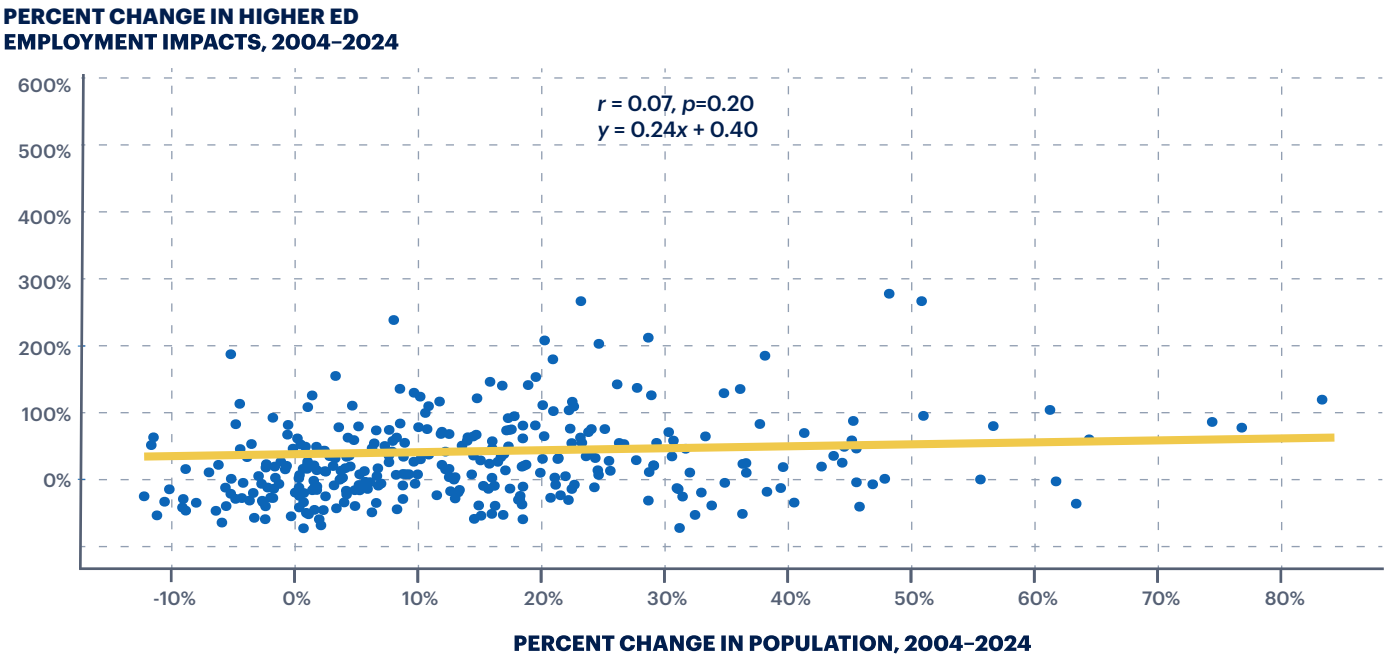
SOURCE: Anchor Economy Dashboard data (2004–2024)

[15] The 2024 anchor data use the geographies delineated in the Office of Management and Budget's July 2023 Bulletin, while the 2004 data use the OMB's 2018 geographies. When comparing across years, we exclude regions with inconsistent geographies because of added counties, removed counties, or absorption by another region.

[16] In 2022, 39 percent of 18–24 year olds were enrolled in higher education, per the National Center for Education Statistics (2024): nces.ed.gov/programs/coe/indicator/cpb.

FIGURE 3B

Percent Change in Higher Ed Employment Impacts vs. Population Growth, 2004–2024



NOTE: We weight the above analysis by regional population in 2024. Higher education employment impacts consist of the sum of direct, indirect, and induced employment. To address extreme outliers, we exclude seven regions from the above analysis where total higher education employment impacts were less than one in 2004 or missing in 2024.

SOURCE: Anchor Economy Dashboard data (2004–2024)

percentage point increase in hospital-related employment growth, suggesting that the demand for healthcare services increases as a region's population grows. On the other hand, the relationship between higher education–related growth and population growth is not statistically significant. This shows that although hospital employment impact growth is strongly correlated with population growth, the same is not true for higher education impacts.

Hospital services also tend to be more localized than higher education services, which intensifies the relationship between population growth and hospital employment growth. The healthcare services hospitals provide are primarily used by those living in the same area as the hospital.[17] However, demand for higher education institution services, especially from research universities, is often "exported" to students drawn from outside of the region, state, or nation.[18] Of course, this varies by institution type — public research and nonprofit universities attract more out-of-state students, whereas community colleges and public nonresearch universities mostly enroll in-state students.[19] Additionally, teaching and noncommunity hospitals are more likely to export care to nonlocal patients.[20]

[17] Hannah Crook, Manuel Horta, Kenneth A. Michelson, and John A. Graves, "Performance of Health Care Service Area Definitions for Capturing Variation in Inpatient Care and Social Determinants of Health," *Health Services Research* 59:4 (2024), e14312, doi.org/10.1111/1475-6773.14312.

[18] Mingyu Chen, "The Impact of International Students on US Colleges: Higher Education as a Service Export," working paper, 2021. Additionally, in a recent essay in *The Atlantic*, "The Looming College-Enrollment Death Spiral," higher education journalist Jeff Selingo observes that when a local college closes, students are more likely to simply not attend college rather than travel farther away for their higher education. In contrast, patients in communities with hospital closures are faced with the necessity of traveling farther for healthcare services.

[19] Nick Hillman, "How Many Students Go Out of State for College?" *Geography of Opportunity Series*, Institute for College Access and Success, 2023, ticas.org/wp-content/uploads/2023/11/Hillman-Geography-of-Opportunity-Brief-1_2023.pdf.

[20] Crook, Horta, Michelson, and Graves, "Performance of Health Care Service Area Definitions."

Closing Thoughts

Although often discussed together as *anchor institutions*,[21] higher education institutions and hospitals have disparate impacts on their regions, and these impacts are distributed differently across regions. Understanding this distribution can allow researchers and policymakers to assess the advantages and vulnerabilities that regions may face as the nation undergoes long-term trends, such as demographic shifts and technological advancement, that will impact both hospitals and universities.

As our analysis shows, regions with growing populations will likely see increased demand for services from hospitals and healthcare institutions. At the same time, the acceleration of hospital consolidations and closures has been documented, especially in rural regions, with significant consequences for local jobs. Early discussions of AI's impact on jobs in the healthcare sector are inconclusive.[22] However, it is conceivable that AI-supported healthcare can sustain hospitals in rural areas[23] while it reduces job count in denser, urban settings. These AI-driven employment changes in the healthcare sector remain to be seen.

In the case of higher education, the national trend of falling traditional college-age residents may depress overall demand for higher education institutions, resulting in some colleges and universities closing altogether.[24] Experts observe that when a locally serving college closes, students are more likely not to go to college at all rather than choose a far-away option.[25] Higher education trends such as remote and distance learning and the offering of shorter-term credentials may reduce jobs and spending tied to place even further.[26]

Finally, with healthcare jobs driving job growth nationally, the anchor dashboard provides a measure of direct, indirect, and induced hospital employment specifically. Because hospital growth is driven by multiple factors — including population growth and even "destination" medicine — the anchor dashboard provides users with a tool to understand how local demographic and sector characteristics might impact the currently dominant healthcare job engine in their regions.

As service-providing industries, universities and hospitals are represented throughout the country. Nearly every region in the United States has a hospital and an institution of higher education. However, their respective impacts are not uniformly distributed across the nation because of the varied demographics of regions and the varied nature of the institutions' operations, customers, and service delivery models. The revised anchor institution data dashboard provides users an additional tool to understand how the composition of anchor institutions in their region drives jobs and other economic outcomes, and it provides a foundation for discussions around the impacts of change in these sectors that support such substantial regional economic output.

[21] Ira Harkavy and Harmon Zuckerman, *Eds and Meds: Cities' Hidden Assets*, Washington, DC: The Brookings Institution, 1999; Michael Porter, *Anchor Institutions and Urban Economic Development: From Community Benefit to Shared Value*, Boston: Initiative for a Competitive Inner City, 2010; Timothy Bartik and George Erickcek, *The Local Economic Impact of "Eds & Meds": How Policies to Expand Universities and Hospitals Affect Metropolitan Economies*, Washington, DC: The Brookings Institution, 2008.

[22] Nicole Summers-Gabr, "The Use of AI in the Healthcare Workplace," *On the Economy* (blog), Federal Reserve Bank of St. Louis, July 15, 2025, www.stlouisfed.org/on-the-economy/2025/jul/use-ai-health-care-workplace-us-experience.

[23] Faiazul Haque Lamem, Muaj Ibne Sahid, Anika Ahmed, "Artificial Intelligence for Access to Primary Healthcare in Rural Settings," *Journal of Medicine, Surgery, and Public Health* vol. 5 (2025), 100173.

[24] Jacob L. Vigdor, "The Ebbing Tide: How Will Higher Education Adapt to Demographic Change?," in *Financing Institutions of Higher Education*, John Y. Campbell and Kaye Husbands Fealing, eds., Chicago: University of Chicago Press, www.nber.org/books-and-chapters/financing-institutions-higher-education. Nathan Grawe, *Demographics and the Demand for Higher Education*, Baltimore: Johns Hopkins University Press, 2018.

[25] Jeffrey Selingo, "The Looming College Enrollment Death Spiral," *The Atlantic*, April 12, 2026, www.theatlantic.com/ideas/2026/04/college-enrollment-demographic-cliff/686750/.

[26] Genevieve Carlton, "Online Learning Stats," Forbes Advisor, May 17, 2023, www.forbes.com/advisor/education/career-resources/online-learning-stats/.

Appendix

TABLE A1

Hospital and Higher Education Employment Impact Shares of Total Anchor Employment Impacts Among Regions with Highest Reliance by Population Category (2024)

Region	Reliance 2024	Anchor Employment Impact Total	Hospital Share of Anchor Emp. Impacts	Higher Ed. Share of Anchor Emp. Impacts
United States	1.00	19,521,484	70.3%	29.7%
>= 2 Million Population				
Cleveland, OH	1.66	208,712	87.5%	12.5%
St. Louis, MO-IL	1.48	256,089	72.7%	27.3%
Boston-Cambridge-Newton, MA-NH	1.45	549,405	66.0%	34.0%
Nashville-Davidson–Murfreesboro–Franklin, TN	1.40	179,457	79.5%	20.5%
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	1.35	519,092	67.2%	32.8%
1–2 Million Population				
Rochester, NY	2.01	115,714	64.2%	35.8%
Milwaukee-Waukesha, WI	1.43	144,689	68.5%	31.5%
Birmingham, AL	1.34	88,140	75.4%	24.6%
Memphis, TN-MS-AR	1.33	101,595	82.5%	17.5%
Grand Rapids-Wyoming-Kentwood, MI	1.29	92,081	86.7%	13.3%
500,000–1 Million Population				
Durham-Chapel Hill, NC	2.65	118,880	56.5%	43.5%
Winston-Salem, NC	2.21	72,386	77.1%	22.9%
New Haven-Milford, CT	2.02	97,825	48.6%	51.4%
Lexington-Fayette, KY	1.72	56,503	60.7%	39.3%
Little Rock-North Little Rock-Conway, AR	1.67	70,810	86.0%	14.0%
250,000–500,000 Population				
Gainesville, FL	3.13	54,896	63.3%	36.7%
Ann Arbor, MI	3.04	81,366	33.4%	66.6%
College Station-Bryan, TX	2.99	46,995	26.5%	73.5%
Shreveport-Bossier City, LA	2.01	42,060	88.9%	11.1%
South Bend-Mishawaka, IN-MI	1.98	31,710	48.2%	51.8%
<250,000 Population				
Morgantown, WV	4.07	31,719	68.7%	31.3%
Ithaca, NY	3.71	22,107	8.6%	91.4%
Champaign-Urbana, IL	3.04	39,297	42.0%	58.0%
Iowa City, IA	2.98	33,284	75.3%	24.7%
Bloomington, IN	2.75	26,043	25.5%	74.5%

NOTE: Shares may not add up to 100 percent because of rounding.

SOURCE: Anchor Economy Dashboard data (2024)

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