



Beyond Patient Care:

Community Impact of Pennsylvania Hospitals

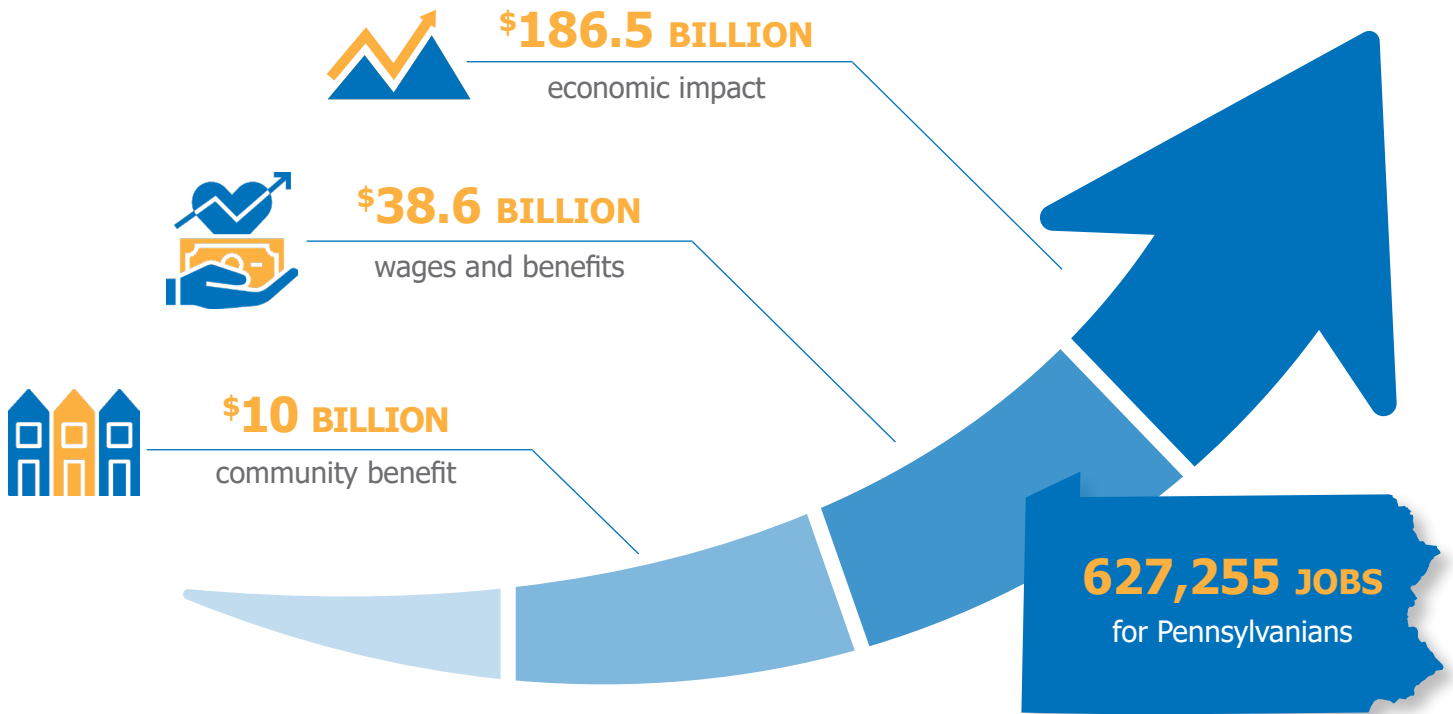


An Analysis of FY 2023 Data

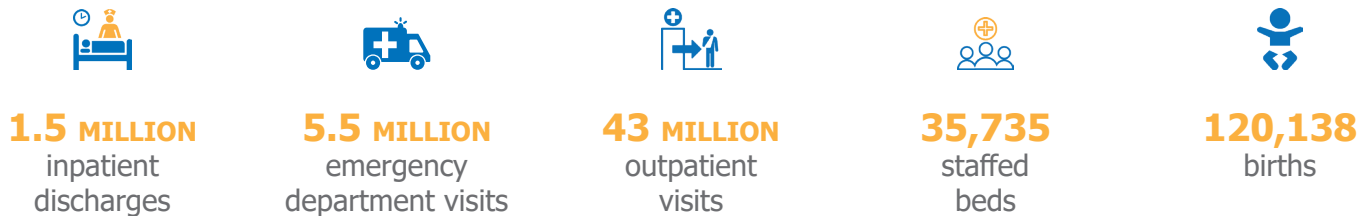
By Ayse Yilmaz, MHA, Obaid Zaman, MPP, Sushma Sharma, PhD, Ki Lee, PhD

Hospitals are vital to Pennsylvania communities

Pennsylvania can't have healthy, vibrant communities without strong hospitals. Hospitals ensure access to high-quality care, making communities places where people want to live and where economic development can happen.



Hospitals provide around-the-clock care for all people, regardless of ability to pay.¹



Hospitals' critical role extends beyond patient care. Pennsylvania hospitals support their communities by:

- Serving as leading job creators in Pennsylvania communities.
- Driving local economies and enabling economic development.
- Addressing community health needs and, absent a public hospital system, providing critical public health infrastructure.
- Providing charity care and supporting care for millions of Pennsylvanians covered by Medicare and Medicaid.
- Educating and training the next generation of clinicians.

Even through health care workforce shortages, ballooning expenses, insufficient payments, and other pressures that threaten hospitals' long-term financial sustainability, hospitals continue to be vital to the health and economies of the commonwealth and its communities.



51%
acute care hospitals
operating at a loss

15%
acute care hospitals
with margins
less than 4%



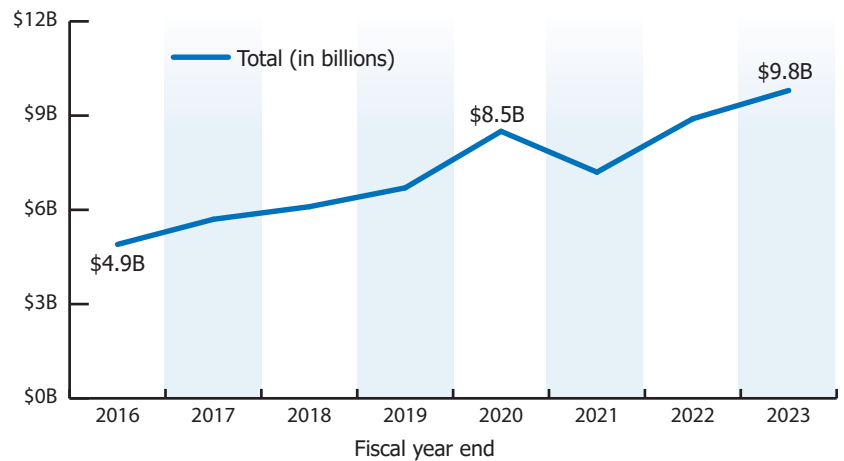
Hospitals invest in the health of their communities

Hospitals' investments include programs and initiatives that directly target community and population health needs, public health efforts, charity care and financial assistance to support patients who are uninsured or underinsured, and other community-focused activities. Hospitals also partner with the state and federal governments to support health care access by absorbing shortfalls from Medicare and Medicaid, which pay below the cost of providing care.²

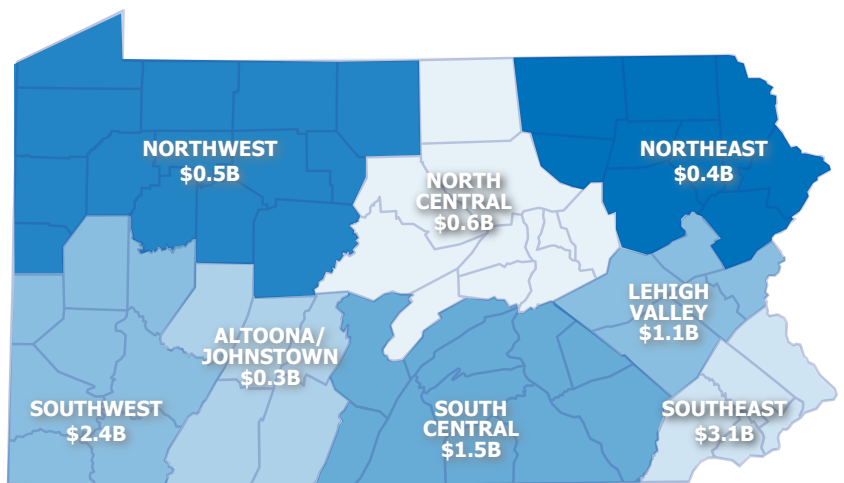
Pennsylvania Hospitals' Community Benefit, Fiscal Year (FY) 2023³

Community benefit	Total Reported
Financial Assistance & Other Community Benefits at Cost	
Charity care (financial assistance at cost)	\$377,904,583
Medicaid shortfall	\$2,936,442,127
Cost of other government programs	\$88,438,757
CHIP shortfall	\$544,167
Community health improvement services and community benefit operations	\$271,073,036
Health professions education	\$1,218,878,384
Subsidized health services	\$846,061,012
Research	\$674,180,431
Cash and in-kind contributions for community benefit	\$211,760,257
Medicare shortfall (including DSH and IME)	\$3,062,846,583
Bad debt	\$199,324,580
Total Community Benefit	\$9,887,453,917

Pennsylvania Hospitals' Community Benefit, FY 2016–2023



Regional Community Benefits, FY 2023



While these figures represent a significant investment in Pennsylvania communities, they are a conservative estimate of Pennsylvania hospitals' total community benefit due to the limitations of publicly reported data.



Community Benefit in Action

Going Mobile to Support Rural Health

Penn State College of Medicine, the partner medical school of **Penn State Health** is bringing care to rural communities in new and innovative ways.

Recently, the College of Medicine launched the LION Mobile Clinic. The free clinic-on-wheels brings care directly to patients who would otherwise struggle to fill prescriptions, receive routine screenings and vaccinations, and access other preventive care that is essential to good health. The emerging community resource is also a hands-on training ground for medical students.

“We wanted to ensure that what we were creating would be adaptable and responsive to the needs of the community the clinic is serving, but also provide valuable experience for our students,” said Kristina Brant, assistant professor of rural sociology at Penn State’s College of Agricultural Sciences.



Transforming Health across Communities

Lehigh Valley Health Network, part of Jefferson Health, is leading an ambitious project to improve health across the communities it serves.

This year, the health network launched the Blue Zones Project—a first-of-its-kind population health initiative to help make the Lehigh Valley a healthier place to live, belong, and grow older. The project focuses on the Allentown, Easton, and Bethlehem communities, bringing evidence-based lessons from the cultures of the world—or blue zones—with the healthiest, longest-living populations. The goal is to improve community well-being, resilience, and economic vitality.

“As stewards of public health and preventive medicine, LVHN has a responsibility to support improvements that will elevate the health of our community,” says Brian A. Nester, DO, MBA, executive vice president and COO, Jefferson, and president, LVHN.



A Focus on Healthy Food

Allegheny Health Network is taking a proactive approach to address food insecurity.

In six years, AHN’s Healthy Food Center has grown to six hospitals and has provided nearly 500,000 meals across the community. The program—a partnership with the Greater Pittsburgh Community Food Bank—ensures patients have access to healthy foods and nutrition counseling to help manage their overall health.

“Our findings show that the Healthy Food Center is a proven, scalable and adaptable model for tackling food insecurity. This is demonstrated by its year-over-year growth in both locations and

patient volume, its impact on the health and wellbeing of patients, and its resilience in adapting to challenges,” said Dr. Elizabeth Cuevas, division chief, AHN Center for Inclusion Health.



Training tomorrow's health care workforce

Pennsylvania hospitals reported spending \$1.2 billion for FY 2023 to educate the next generation of health care professionals.

According to the Association of American Medical Colleges, the nation will experience a shortage of physicians approaching 124,000 by 2034.⁴ Pennsylvania Department of Labor and Industry projects that between 2022 and 2032, there will be a demand for 8,890 registered nurses and 11,232 nursing assistants, annually.⁵ A 2023 HAP survey of Pennsylvania hospitals found average statewide vacancy rates are in the double digits for many direct-care professionals—including 14% for registered nurses and 19% for nursing support staff—with shortages even greater in rural communities.⁶

Pennsylvania hospitals train thousands of doctors, nurses, and other clinicians each year through their partnerships with the commonwealth's 1,811 health care professional training programs. This includes 345 nursing programs and eight medical schools associated with Pennsylvania hospitals and health systems.⁷ Pennsylvania hospitals also partner with community organizations and educators to recruit, educate, and train tomorrow's health care professionals.



Workforce Initiatives in Action

Sparking a Passion for Medicine

WellSpan Health is engaging local students in career exploration to develop a workforce that reflects its community.

The system partners with Black Men in White Coats for an annual summit that offers students in grades 6–12 the opportunity to learn about the career possibilities within health care and connect with mentors. More than 300 students and caregivers participated in the second annual summit this year, which also featured information sessions for parents, caregivers, and adult attendees to support people on career pathways and offer expert financial advice in paying for college.



“We need to look no further than our own communities for our future health care professionals and this youth summit ensures that anyone who has an interest in this career path has support in doing so,” said Kim Brister, vice president and chief diversity, equity, and inclusion officer at WellSpan.

A New Institute for Health Care Professionals

Meadville Medical Center is leading an effort to grow its community’s health care workforce.

This year, the hospital launched the MMC Institute for Healthcare Professionals. The institute is the center’s first education-based program for individuals interested in pursuing health care-related careers. Students will finish the one-year program as a practical nurse and take their boards to be licensed. The program addresses a local need as another county nursing program ceased operations earlier this year.

“Preserving a strong workforce of nurses has been a challenge for a long time,” said Valerie Waid, chief nurse executive at MMC. “The impact of persistent, national nursing shortages can devastate rural hospitals. I believe that this program will assist us to provide quality care to our patients, while providing excellent job opportunities.”

Addressing Shortages through an Emerging Career Program

Penn Medicine-Penn Presbyterian Medical Center’s emerging career pipeline shows how it takes a community to build a workforce.

The new program brings together organizations from across West Philadelphia to train recent high school graduates for careers in health care. The program taps into skills from across the community, including the Philadelphia School District, Philadelphia Youth Network, and other local organizations. These organizations bring unique resources and skillsets to help train Generation-Z job seekers. The partners work together to coach, train, and mentor students to ensure they are supported at the hospital and in their communities.

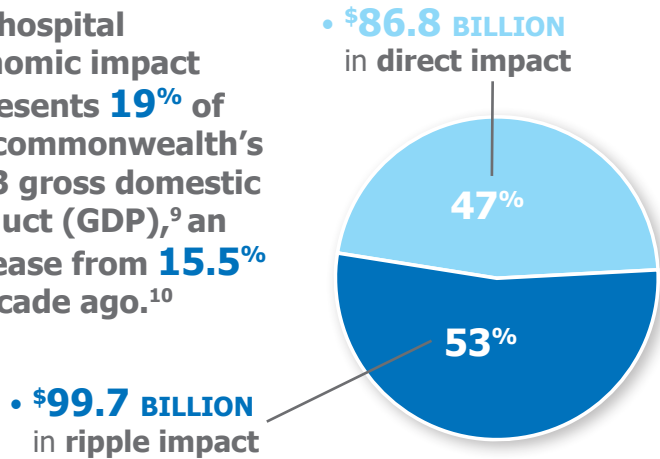
The program serves dual goals of developing a diverse and talented workforce for the hospital and creating opportunity for youth in West Philadelphia, said Kenya Pitt, MA, MBA, vice president, chief human resources officer, Penn Medicine-Penn Presbyterian Medical Center. “If we reach them early and partner with them in the right way,” Pitt said, “we can make a significant economic impact on them and their families.”



Hospitals are leading contributors to Pennsylvania's economy

Pennsylvania hospitals are not only top—and growing—contributors to the commonwealth's economy but also generate significant economic activity in many industries such as construction; real estate; and professional, scientific, and technical services.

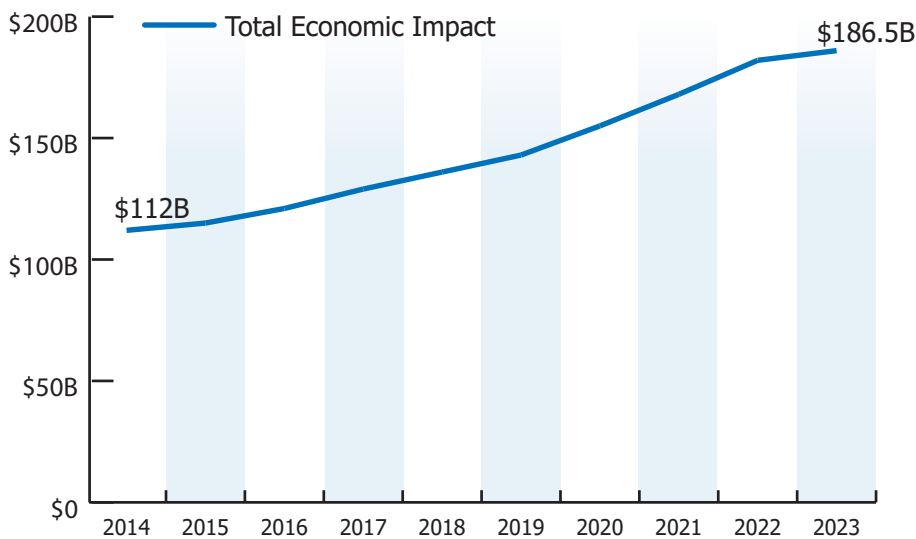
The hospital economic impact represents **19%** of the commonwealth's 2023 gross domestic product (GDP),⁹ an increase from **15.5%** a decade ago.¹⁰



TOTAL ECONOMIC IMPACT: \$186.5 BILLION

FY 2023

The industry's economic activity has increased steadily—by **67%** over the last 10 years.



Source: HAP's annual analyses of HHS HCRIS data (2014 through 2023), coupled with data provided directly to HAP by Pennsylvania health systems (2014 through 2023)

Economic Impact Definitions⁸

Direct impact: Spending for operations, including employee wages, supplies, equipment, technology, and services provided through contracts with third parties.

Indirect impact: Economic activity generated by third-party suppliers as a result of their contracts with hospitals.

Induced impact: Economic activity generated by hospital employees and employees of third-party vendors.

Ripple impact: The sum of the hospital's indirect and induced impacts. Multipliers are used to calculate economic ripple impacts.

Total economic impact: The combined economic impact attributable to hospitals' direct and ripple impacts.

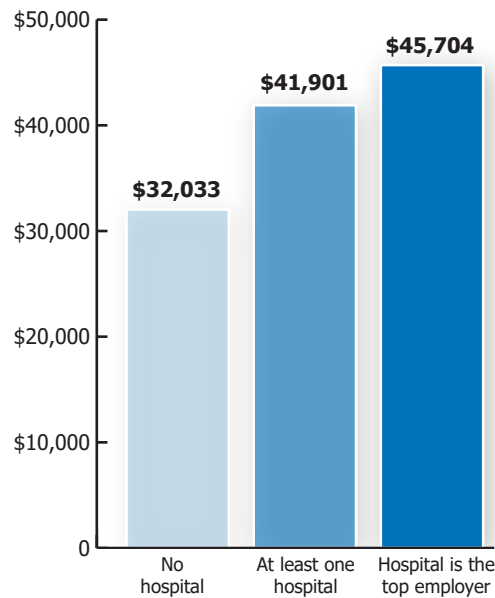
Hospitals rank among the commonwealth's **TOP 12** industries for economic impact.^{11 12}



Strong hospitals support strong communities

Pennsylvania counties with a hospital have stronger economies, especially if a hospital is the county's top employer.¹³ This holds true for both rural and urban counties.¹⁴

Per Capita GDP (Rural Counties)



Per Capita GDP (Urban Counties)



Growth Despite Strain



While Pennsylvania hospitals remain economic drivers in their communities, many face financial strain in the wake of the COVID-19 pandemic and historic inflation. Based on data from PHC4, **51%** of Pennsylvania's general acute care hospitals posted a negative operating margin for FY 2023 and another **15%** had an operating margin of less than 4%.¹⁵

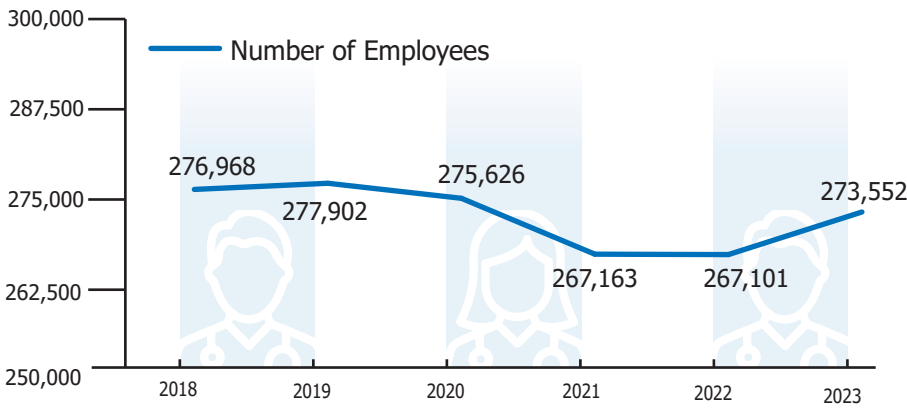


Hospitals are top employers

Pennsylvania hospitals are top employers across the commonwealth and in their communities, even as they work hard to rebuild the health care workforce following the COVID-19 pandemic.¹⁶

Pennsylvania hospitals support **1 in 9 JOBS** statewide.¹⁷

Employment at Pennsylvania Hospitals, 2018–2023¹⁸

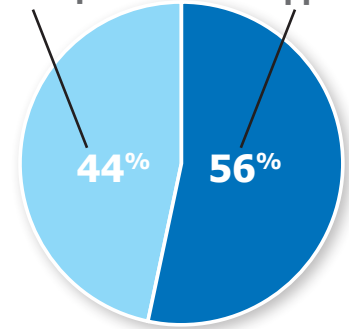


Source: Annual Census of Employment and Wages (QCEW) reports from the U.S. Bureau of Labor and Statistics, 2018–2023.

TOTAL JOBS: 627,255

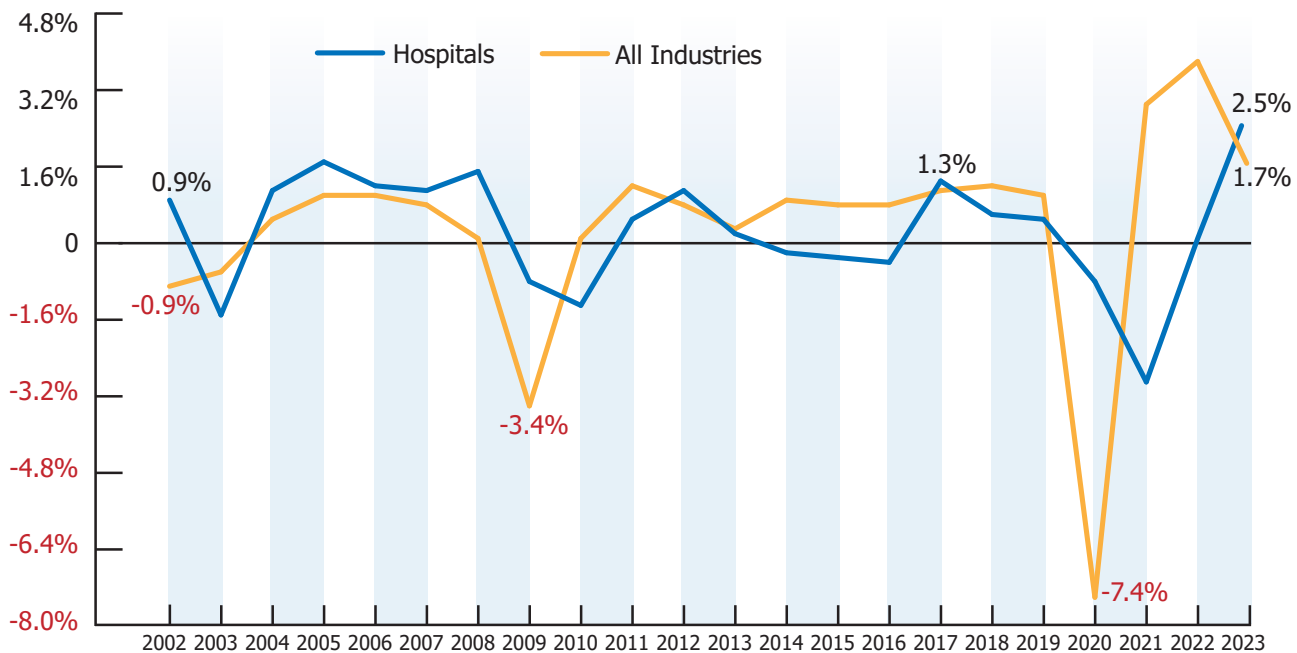
273,552 JOBS
in direct impact

353,703 JOBS
in ripple impact



Total employment attributable to hospitals, FY 2023

Even during economic downturns, hospitals are stable employers for their communities.¹⁹

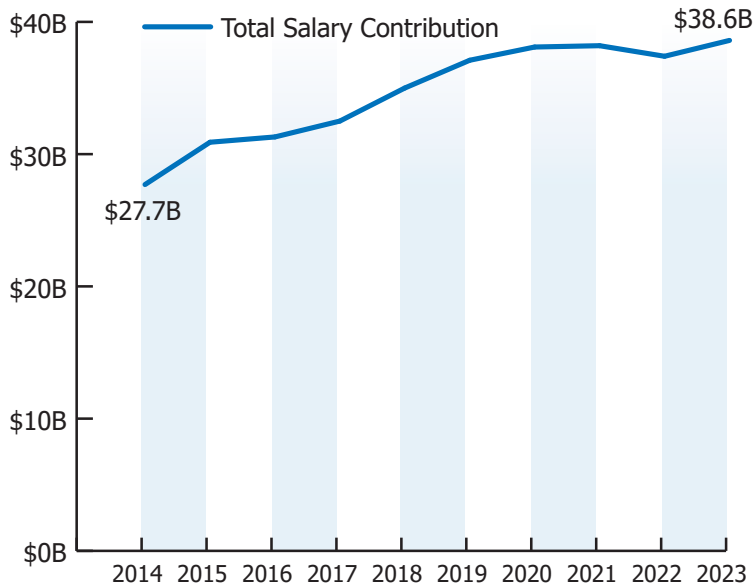


Percent change in employment compared to previous year

Hospitals create good-paying jobs

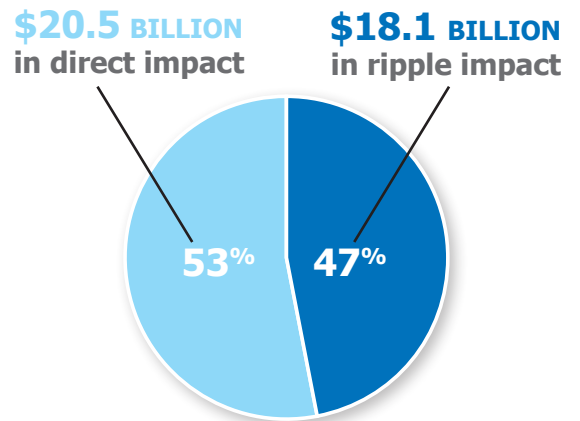
Hospitals provide higher-than-average wages and their total salary contributions have increased **39%** since 2014.

Hospitals' Salary Contribution is Increasing



Source: HAP's annual economic impact analyses, 2014-2023

TOTAL SALARY CONTRIBUTION: \$38.6 BILLION

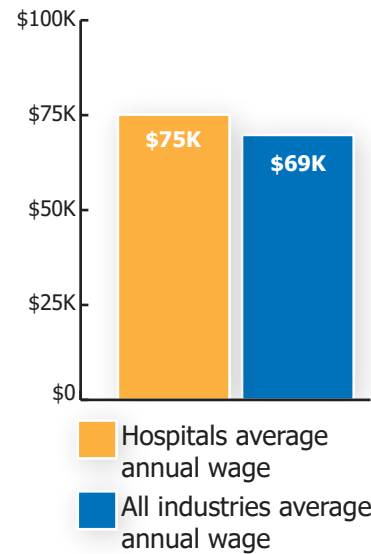


Total salary contribution by Pennsylvania hospitals, FY 2023

Hospitals are Leading Employers Statewide²¹

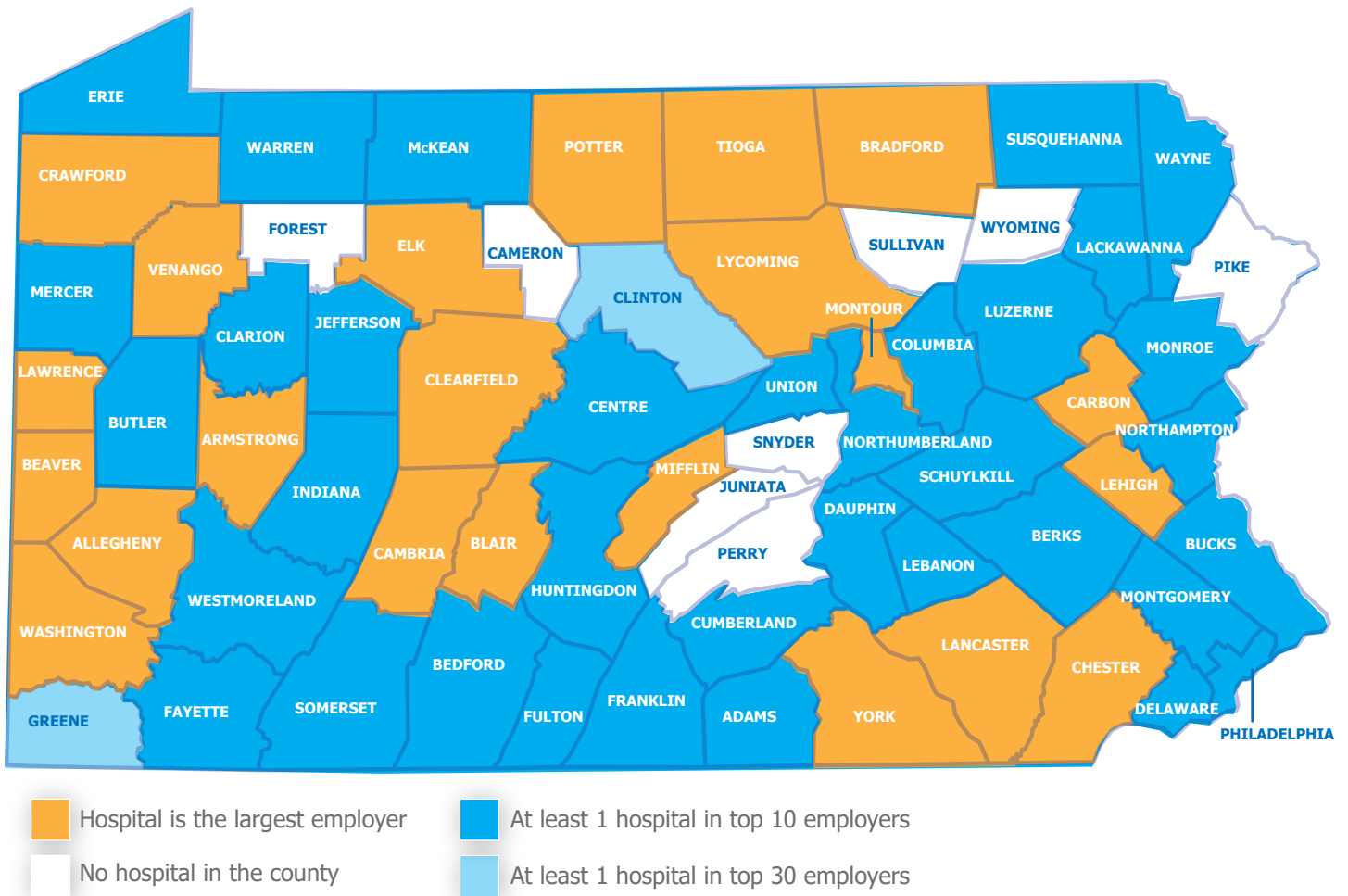
Industry	Avg. Jobs (Rank)	Total Wages Rank
Food service	1	11
Professional services	2	1
Ambulatory health care	3	2
Administrative/support	4	5
Hospitals	5	4
Social assistance	6	10
Education	7	7
Nursing/residential care	8	14
Specialty trades	9	8
Business management	10	9

Hospitals Pay Above Average Wages²⁰



Source: Pennsylvania Department of Labor & Industry, Center for Workforce Information & Analysis

Hospitals are top employers in their counties²²



Source: Pennsylvania Department of Labor and Industry, Center for Workforce Information and Analysis

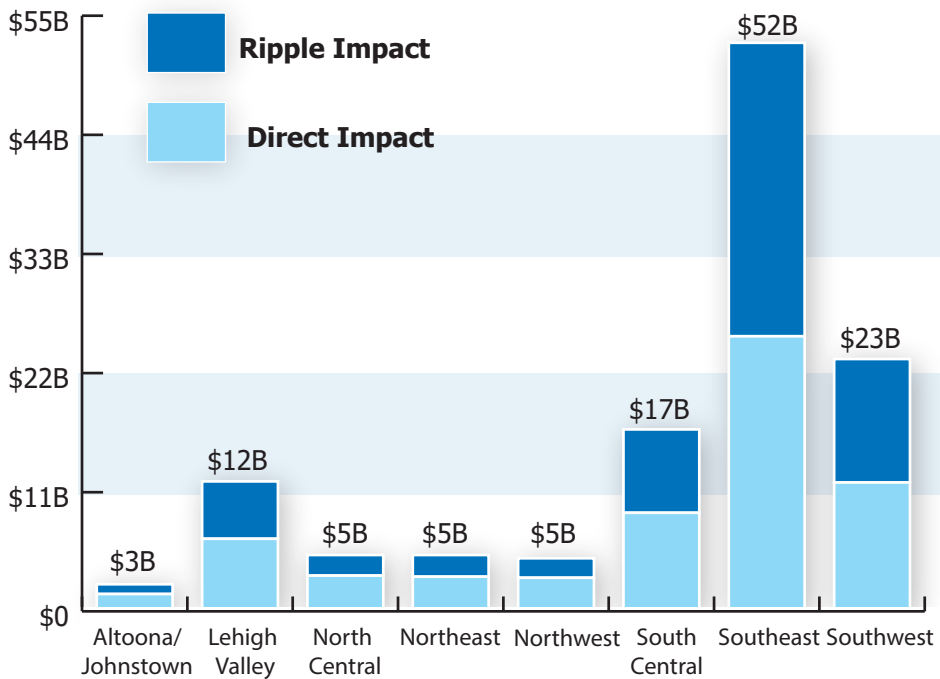
In 22 counties, a hospital/health system is the largest employer.

- In 57 of Pennsylvania’s 67 counties (**85%**) at least one hospital/health system is among the top 10 largest employers.
- In 38 of Pennsylvania’s 48 rural counties (**80%**) at least one hospital/health system is among the top 10 largest employers.



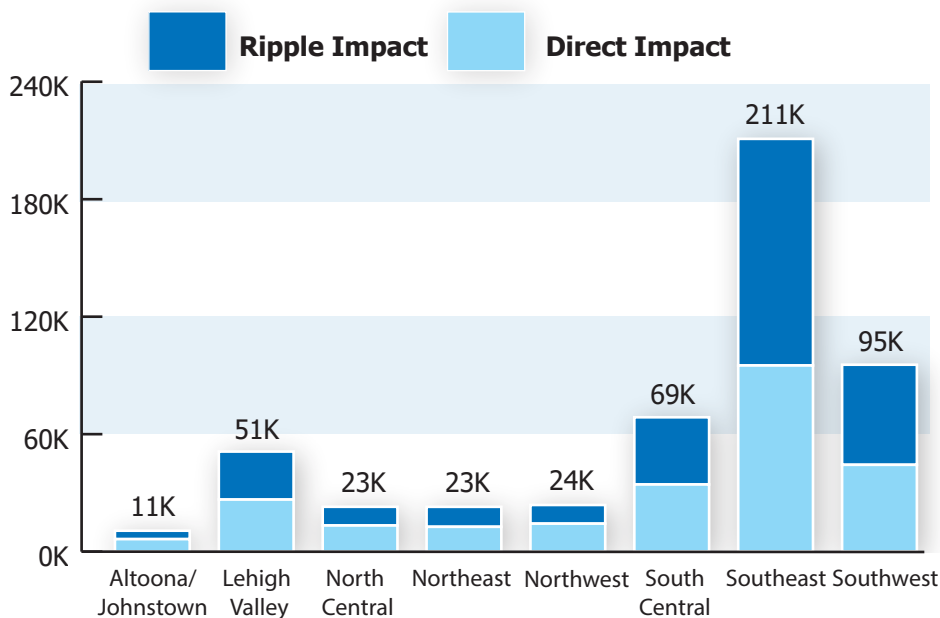
Hospitals are vital to communities statewide²³

Economic Impact



Source: HAP's 2024 analysis of HHS HCRIS FY 2023 data, coupled with data provided directly to HAP by Pennsylvania health systems

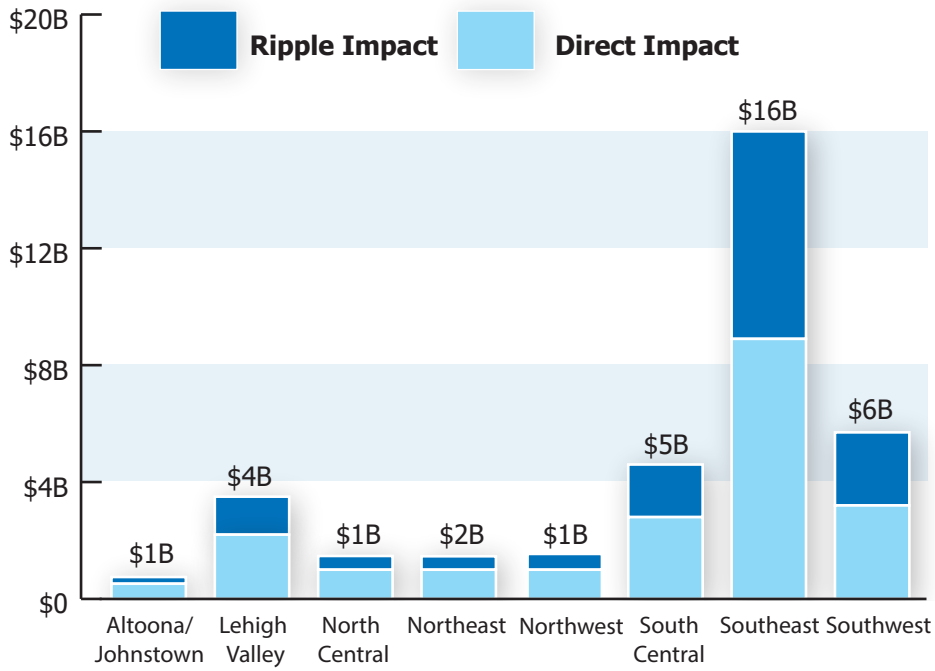
Jobs Supported



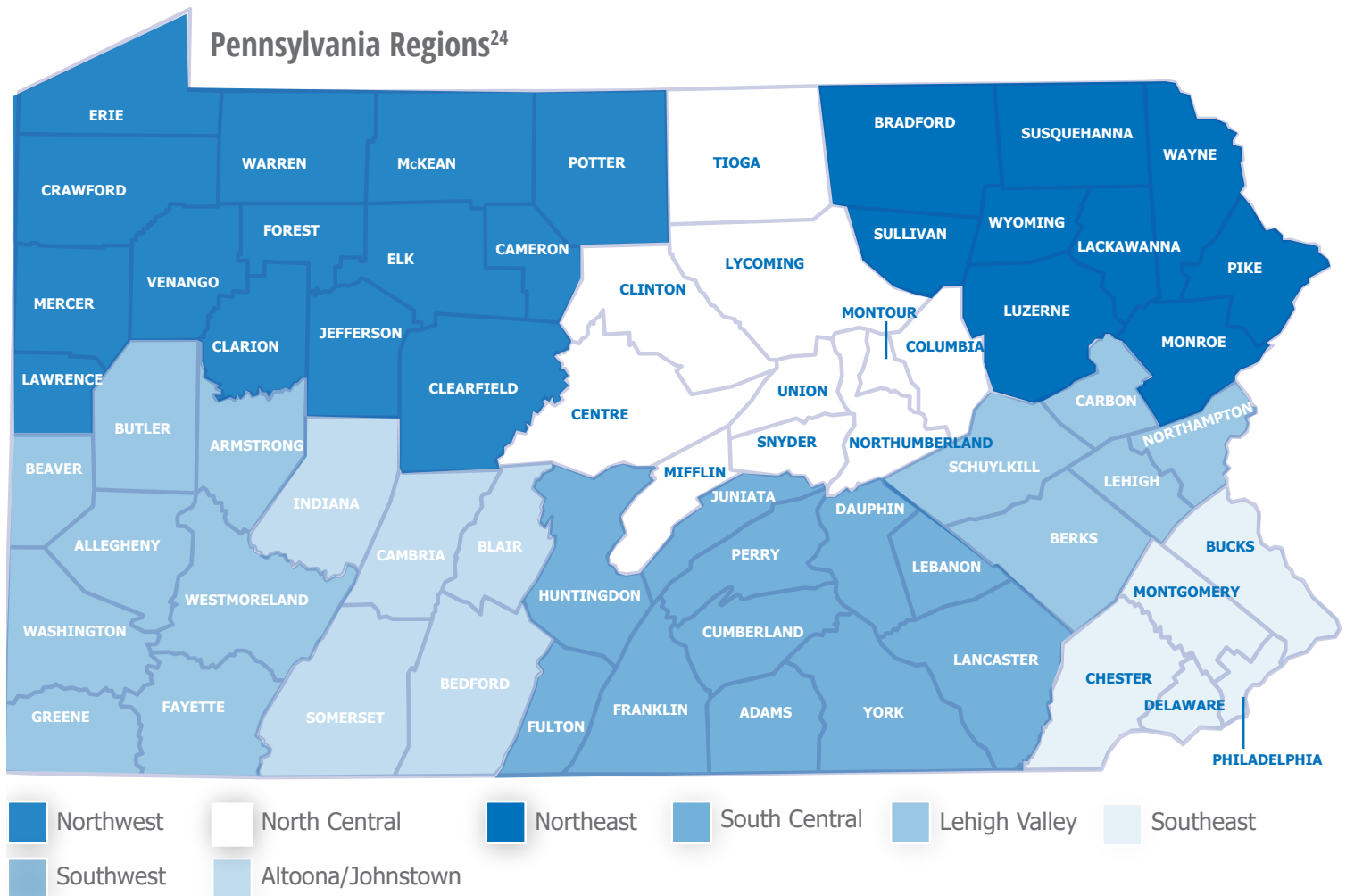
Source: HAP's 2024 analysis of HHS HCRIS FY 2023 data, coupled with data provided directly to HAP by Pennsylvania health systems



Salary Contributions



Source: HAP's 2024 analysis of Pennsylvania Department of Labor & Industry, 2023 Q4 Hospital Employment and Wages, by Region



Source: PHC4



Hospitals lead world-class research

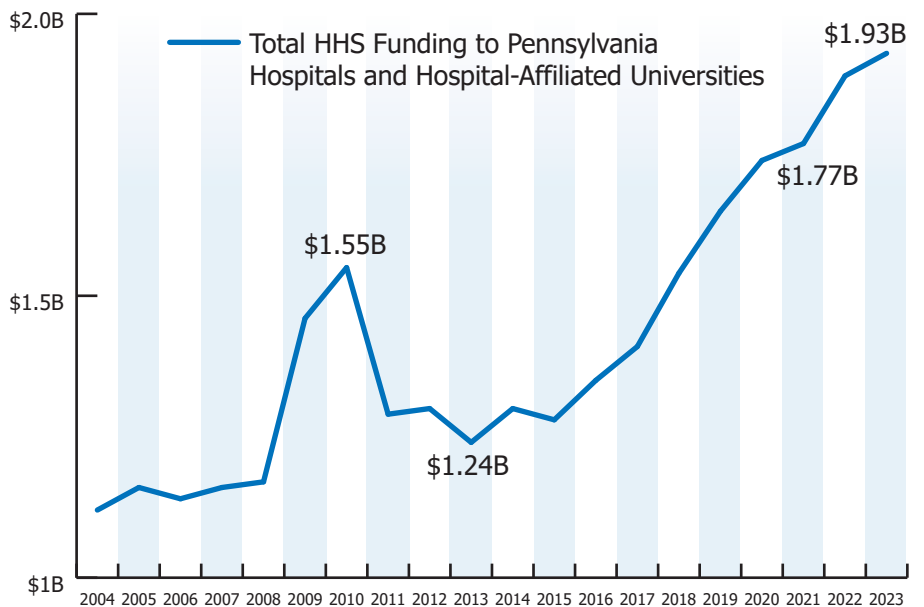
Pennsylvania hospitals and universities with hospital-affiliated medical schools have been remarkably successful at securing competitive federal health research dollars.

During FY 2023, National Institutes of Health (NIH) awarded funds to only 21 percent of its applicants.²⁵ However, **85%** of all federal research funding awarded to Pennsylvania organizations went to hospitals and universities with hospital-affiliated medical schools.

Pennsylvania’s hospitals and hospital-affiliated universities have brought more than \$28 billion in research funding to the state since 2004.²⁶

The amount of research funds hospitals bring to the commonwealth annually would be enough to pay all the wages for Pennsylvania’s accommodation industry.²⁷

Increase in Research Funds



Research Funds by Agency²⁸

Agency	Total Funding to all Pennsylvania-based organizations	Funding to Pennsylvania Hospitals and Universities with Medical Schools
FDA	\$14,424,526	\$739,565
AHRQ	\$11,423,728	\$10,997,019
CDC	\$18,022,613	\$16,707,631
NIH	\$2,224,001,230	\$1,899,288,409
Total	\$2,270,325,016	\$1,927,732,624

Research Funds by Hospital²⁹

Organization	Number of Projects	FY 2023 Total Funding
University of Pennsylvania	1,341	\$710,372,782
The University of Pittsburgh	1,268	\$671,484,314
Pennsylvania State University	365	\$153,511,703
Children’s Hospital of Philadelphia	324	\$169,118,109
Temple University	196	\$79,734,751
Thomas Jefferson University	166	\$69,021,729
Drexel University	153	\$63,966,510
Geisinger Clinic	13	\$10,552,726
Total	3,826	\$1,927,732,624



Hospitals' role in Pennsylvania's economy is growing

Demographics show growth of elderly population: Demand for clinicians is rising as baby boomers age and live longer. According to U.S. Census 2023 estimates, Pennsylvania's population of those aged 65 and older (20%) exceeded the national average (17.7%), while Pennsylvanians living with disabilities (10%) also exceeded the national average (8.9%).³⁰ These numbers are expected to grow. Projections by the Center for Rural Pennsylvania, a legislative agency of the Pennsylvania General Assembly, estimate that, between 2010 and 2040, Pennsylvania's 65-and-older population will increase 66.4%.³¹ Demand for health care for older adults—often the most frequent users of hospital services—is anticipated to continue its upward trajectory.

Growth of health care jobs: Occupations related to health care also are growing steadily in Pennsylvania. A report by Penn State's Center for Economic and Community Development found an 18.3% increase in health care and social assistance sector jobs between 2008 and 2019, topping the list of the 11 growing industries across the commonwealth during that timeframe.³² Despite the projected shortage of physicians, the Pennsylvania Department of Labor & Industry (L&I) also projects the health care and social assistance industry will continue to be the fastest growing industry in Pennsylvania until 2032, with average estimated gains of more than 7,000 jobs each year.³³ L&I also projects that by 2032, many health care support and health care practitioners/technical occupations, such as physician assistants and nurse practitioners, will be among the top occupations with 43% and 28% growth, respectively.³⁴ According to L&I, Pennsylvania hospitals are expected to employ more than 274,000 people by 2032—a nearly 2.8% increase from 2022. All industries in Pennsylvania are expected to increase by 2.5% within the same timeframe.³⁵

Supporting Pennsylvania's workforce: The U.S. Centers for Disease Control and Prevention reports that employee absenteeism associated with five common diseases or risk factors (i.e., hypertension, diabetes, smoking, physical inactivity, and obesity) cost businesses more than \$36.4 billion annually.³⁶ By providing services designed to improve the health of the commonwealth's workforce, Pennsylvania hospitals help to reduce the cost of this lost productivity.



Methodology

The HAP Center for Health Policy Research based its economic impact analysis of statewide and regional hospital economic activity on data received from the U.S. Department of Health & Human Services (HHS) FY 2023 Hospital Cost Report Information System (HCRIS), and other published sources. To analyze the statewide and regional impact of employment and salaries, HAP obtained 2023 hospital employment and wages by region from the Pennsylvania Department of Labor and Industry's Center for Workforce Information and Analysis.

To calculate ripple impacts, HAP applied statewide and regional 2022 RIMS multipliers, which were calculated by the U.S. Bureau of Economic Analysis during May 2024.

HAP used state and hospital employee data based on Quarterly Census of Employment and Wages (QCEW) reports from the U.S. Bureau of Labor and Statistics.

Analyses of top employers were based on 2023 fourth-quarter county profiles from the Pennsylvania Department of Labor and Industry's Center for Workforce Information and Analysis.

HAP's source for HHS research funding was National Institutes of Health (NIH) RePORTER, which includes reported funding from the NIH, the Agency for Healthcare Research and Quality, and other HHS operating divisions.

Hospital utilization data were obtained from the Pennsylvania Department of Health, Division of Health Informatics' Hospital Questionnaire, CY 2023, and the Pennsylvania Health Care Cost Containment Council's (PHC4) Financial Analysis, Fiscal Year 2023 (for General Acute Care and Non-General Acute Care hospitals).

Acknowledgements

The Hospital and Healthsystem Association of Pennsylvania (HAP) would like to thank the Pennsylvania Department of Labor and Industry's Center for Workforce Information and Analysis for generously providing data critical to this effort.



Endnotes

- ¹ Data is from HAP's internal Research Department Data Warehouse which combines data from the Pennsylvania Department of Health (PADOH), the Pennsylvania Health Care Cost Containment Council (PHC4) and other CMS data files.
- ² HAP's analysis of Schedule H data filed for non-profit hospital community benefits and Medicare Cost Reports for for-profit hospital community benefits. Schedule H data: Internal Revenue Service (IRS), Charities and Nonprofits. Retrieved from: <https://www.irs.gov/charities-and-nonprofits>. Last accessed: 08/02/2024. Data is filtered to include tax periods 07/01/2022-06/30/2023 (FY 2023). A small number of facilities operate on a December 31, (2021) fiscal year end, which were also included. Medicare Cost Reports data: Centers for Medicare and Medicaid Services. Cost Reports. FY 2023. Only for-profit hospitals' data is included. Retrieved from: <https://www.cms.gov/research-statistics-data-and-systems/downloadable-public-use-files/cost-reports>. Last accessed: 07/18/2024.
- ³ Ibid
- ⁴ "The Complexities of Physician Supply and Demand: Projections from 2019 to 2034." Published by Association of American Medical Colleges, June 2021. Retrieved from: <https://www.aamc.org/media/54681/download>. Last accessed: 06/27/2023.
- ⁵ Commonwealth of Pennsylvania. Department of Labor and Industry. Long-term Occupational Employment Projections for Pennsylvania. Retrieved from: <https://www.pa.gov/en/agencies/dli/resources/statistic-materials/products/projections-occupational-industries/itop-statewide-data.html>. Last accessed: 10/17/2024.
- ⁶ The Hospital and Healthsystem Association of Pennsylvania. Report: Hospital Workforce Survey, January 2024. 01/30/2024. Retrieved from: <https://www.haponline.org/Resource-Center?resourceid=1108>. Last accessed: 09/04/2024.
- ⁷ National Center for Education Statistics, Integrated Postsecondary Education Data System. Number of Healthcare-Related Training Programs in PA. 2021–2022. Data obtained from Pennsylvania Department of Labor & Industry on 06/26/2024.
- ⁸ Bureau of Economic Analysis, U.S. Department of Commerce. Regional Input-Output Modeling System (RIMS II): An Essential Tool for Regional Developers and Planners. See Glossary, p. 67. December 2013. Retrieved from: https://apps.bea.gov/regional/pdf/rims/RIMSII_User_Guide.pdf. Last accessed: 12/15/2020.
- ⁹ PA GDP: Bureau of Economic Analysis, U.S. Department of Commerce. GDP and Personal Income. See Interactive Tables, Annual Gross Domestic Product (GDP) by State, GDP in current dollars. Selection criteria: NAICS, Pennsylvania, 2022. Retrieved from: <https://www.bea.gov/itable/regional-gdp-and-personal-income>. Last updated: 03/12/2024. Last accessed: 07/12/2024. HAP calculated the hospital community's contribution to the GDP by dividing the 2022 Pennsylvania GDP (\$965 billion) by the community's total—direct plus ripple—economic impact (\$186.5 billion).
- ¹⁰ HAP's analysis of historical PA GDP data from BEA (Table SAGDP1: State annual gross domestic product summary. Last accessed: 08/16/2024) and HAP's economic impact analyses 2009–2023.
- ¹¹ Industry categories are a mix of North American Industry Classification System (NAICS) sector and sub-sector groupings of industries. Sub-sectors were used where applicable, such as to capture data specifically for the Hospital industry. Other industries only have sector level data available and these were included when determining the ranking of industries.
- ¹² HAP's 2024 analysis of 2022 annual data downloaded from U.S. Bureau of Economic Analysis. Interactive Tables, Annual Gross Domestic Product by State, GDP in current dollars. Selection Criteria: NAICS, Pennsylvania, All Statistics in Table, 2022. Retrieved from: <https://www.bea.gov/itable/regional-gdp-and-personal-income>. Last accessed: 07/12/2024.
- ¹³ Per Capita GDP is calculated by dividing county level GDP by the county population. Data for county level GDP can be found on the website for the Bureau of Economic Analysis, U.S. Department of Commerce. GDP by County, Metro, and Other Areas. See Interactive Tables, Gross Domestic Product by County and Metropolitan Area. Selection criteria: GDP by County and Metropolitan Area, Real GDP in chained dollars, County-Level, Pennsylvania, All Counties in Pennsylvania and Real GDP, 2022. Retrieved from: <https://www.bea.gov/data/gdp/gdp-county-metro-and-other-areas>. Last updated: 12/07/2023. Last accessed: 09/03/2024. Data for county level population can be found on the website for the Bureau of Economic Analysis, U.S. Department of Commerce. Personal Income by County and Metropolitan Area. See Interactive Tables, Personal Income by County, Metro, and Other Areas. Selection criteria: Personal Income and Employment by County and Metropolitan Area, County and MSA personal income summary: personal income, population, per capita personal income, County-Level, Pennsylvania, All Counties in Pennsylvania and Population (persons), 2022. Retrieved from: <https://www.bea.gov/data/gdp/gdp-county-metro-and-other-areas>. Last updated: 12/07/2023. Last accessed: 09/03/2024.
- ¹⁴ For this analysis, Pennsylvania counties are considered rural when a county's population density is lower than the overall state population density. Counties that meet these criteria are listed on the website for Center for Rural Pennsylvania. Retrieved from: <https://www.rural.pa.gov/data/rural-urban-definitions>. Last accessed: 09/03/2024.
- ¹⁵ Pennsylvania Health Care Cost Containment Council. Financial Analysis 2022-General Acute Care Hospitals. June 2024. Retrieved from: https://www.phc4.org/wp-content/uploads/fin2023report_volumeone.pdf. Last accessed: 07/18/2024.
- ¹⁶ The Hospital and Healthsystem Association of Pennsylvania. Hospital Workforce Survey, January 2024. 01/30/2024. Retrieved from: <https://www.haponline.org/Resource-Center?resourceid=1108>. Last accessed: 09/04/2024.
- ¹⁷ HAP's analysis of annual 2023 All Industries Employment data received from PA Department of Labor and Industries and the results of HAP's 2024 Economic Impact Analysis (627,255 total jobs supported by Pennsylvania hospitals).
- ¹⁸ 2018–2022 data: U.S. Bureau of Labor and Statistics, Quarterly Census of Employment and Wages (QCEW) Dataviewer. See Multi-Year Data option #19 for one area, one industry, annually. Selection criteria: Period: 2018 to 2023; Ownership: Private and State Government; Industry "NAICS 622 Hospitals." Last accessed: 07/09/2022. 2023 data: 2023 All Industries Employment data received from PA Department of L&I received on 06/18/2024.



Endnotes (cont.)

- ¹⁹ HAP's analysis of U.S. Bureau of Labor and Statistics, Quarterly Census of Employment and Wages (QCEW) Average annual employment, State: Pennsylvania. Ownership: Private. Years: 2001-2023. Retrieved from: <https://www.bls.gov/cew/data.htm>. One-Screen Data Search. Last accessed: 09/04/2024.
- ²⁰ HAP's 2024 analysis of 2023 annual data received from Pennsylvania Department of Labor & Industry, Center for Workforce Information & Analysis. Data inquiry: 07/18/2024.
- ²¹ U.S. Bureau of Labor and Statistics, Quarterly Census of Employment and Wages (QCEW) Dataviewer. See NAICS Industries by Geography option #8 for NAICS sub-sectors, one area. Selection criteria: Period: 2023; Quarter: Annual Averages, Ownership: Private; State: Pennsylvania. Last accessed: July 2024.
- ²² Pennsylvania Department of Labor and Industry, Center for Workforce Information and Analysis. Pennsylvania Top 50 Employers & Industries. 4th Quarter, 2023. Retrieved from: <https://www.workstats.dli.pa.gov/Products/Top50/Pages/default.aspx>. Last accessed: 07/03/2024.
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