# **Beyond Patient Care:**

# **Economic Impact of Pennsylvania Hospitals**



A White Paper Analysis of FY 2019 Data December 2020



# Beyond Patient Care: Economic Impact of Pennsylvania Hospitals

A White Paper Analysis of FY 2019 Data

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### **Acknowledgements**

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### **Table of Contents**

Introduction	2
Economic Impact of Pennsylvania Hospitals	3
Definitions	
Methodology	3
Pennsylvania Hospitals' Statewide Economic Impact	4
Pennsylvania Hospitals' Regional Economic Impact	8
Hospitals Are Top Employers within Their Counties	10
Federal Health Care Research Funds	10
Economic Impact of Pennsylvania Hospitals: Uncaptured Components	12
Growing Role of Hospitals in Pennsylvania Economy: Implications from the Data	
Looking to the Future	13
Conclusion	14
Appendix A	15



### **Introduction**

Hospitals provide access to a broad scope of health care services, including 24-7 emergency care, highly specialized medical services and procedures, and medical education to train the next generation of clinicians. Members of The Hospital and Healthsystem Association of Pennsylvania (HAP) also pledge to care for all, regardless of patients' ability to pay.

COVID-19 has left devastating health and economic consequences across the commonwealth, especially in the state's rural communities. Absent a public hospital system, Pennsylvania's hospitals and health systems provide critical infrastructure that supports public health, coordinating emergency preparation, management, and response; addressing community health needs; and serving as a safety net health care provider.

Hospitals directly impact their communities' economies in many ways— maintaining and constructing new buildings; providing jobs; purchasing medical supplies, pharmaceuticals, and medical equipment; etc. Hospitals also indirectly impact the economy through business interactions with organizations from other industries, such as employment and cleaning

services. Finally, hospitals induce economic activity outside of the hospital—in such industries as real estate, financial investment firms, and restaurants. They also attract federal research dollars to the state, enabling Pennsylvania to develop innovations that improve care for all Americans.

The analysis examines the hospital community's economic impact on individual regions of the state and on Pennsylvania as a whole. It assesses the effects of hospital spending and employment, documenting that hospitals are among the largest employers across the commonwealth. It also recognizes the role hospitals play in attracting federal and quasi-public research dollars and the broader benefits hospitals provide by training tomorrow's clinicians and providing charity and unreimbursed care.

While the analysis of this fiscal year (FY) 2019 data demonstrates a robust contribution to the economy, the magnitude of the COVID-19 pandemic will fundamentally alter the data for FY 2020. Findings from this paper should be used to inform policy discussions about topics that affect long-term hospital sustainability, including but not limited to hospital funding, promoting health equity, prior authorization reform, telemedicine service reimbursement, credentialing process streamlining, adequate Quality Care Assessment support, and bolstering Pennsylvania's health care workforce.

# Support more than 660,000 jobs for Pennsylvanians Generate \$37.2 billion in wages, salaries and benefits Contribute \$143 billion to state and local economies, a 5 percent increase compared to the previous year



### **Economic Impact of Pennsylvania Hospitals**

### **Definitions**

Hospitals' economic contributions consist of the **direct impact**, **indirect impact**, **and induced impact** of hospital spending. To clarify, the following definitions appear throughout this white paper:

**Direct impact**: This is what hospitals spend for operations, including wages they pay to employees, and everything they purchase—from supplies, equipment, and technology to services provided through contracts with third parties (like contracts for laundry services or parking operations). In other words, it is the change in economic activity resulting from the initial round of inputs purchased by the final-demand industry.<sup>1</sup>

**Indirect impact**: This is the spending generated by third-party suppliers as a result of their contracts and financial arrangements with hospitals. For example, indirect impact includes the wages that pay the parking attendant who works for the local business to which the hospital outsources parking services. In other words, it is the change in economic activity resulting from the subsequent rounds of inputs purchased by industries affected by a final-demand change.<sup>2</sup>

**Induced impact**: This relates to what a physician, nurse, lab technician, or even the contracted parking attendant spends in the hospital's neighborhood for coffee, lunch out, groceries, dry cleaning, etc. In other words, it is the change in economic activity resulting from the changes in spending by workers whose earnings are affected by a final-demand change. Sometimes called the "household spending effect," it is the spending generated by all workers whose earnings are affected by a hospital's direct and indirect impacts.<sup>3</sup> Induced impact includes spending by hospital employees, as well as employees of third-party suppliers that serve hospitals.

**Ripple impact**: This is the sum of the hospital's indirect and induced impacts. Multipliers are used to calculate economic ripple impacts—HAP uses separate regional and state Regional Input-Output Modeling System (RIMS) multipliers, obtained from the U.S. Department of Commerce's Bureau of Economic Analysis (BEA).

**Total economic impact**: This is the combined economic impact attributable to hospitals' direct impact plus their ripple impact as those dollars circulate across the commonwealth.

### **Methodology**

The HAP research department based its economic impact analysis of statewide and regional hospital spending on data received from the U.S. Department of Health & Human Services' (HHS) fiscal year (FY) 2019 <a href="Hospital Cost Report Information System">Hospital Cost Report Information System</a> (HCRIS), combined with data provided to HAP by its member health systems. To analyze statewide and regional impact of employment and salaries, HAP obtained 2019 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 2018 <u>RIMS</u> multipliers, which were newly calculated by the BEA in June 2020.

HAP obtained employee and staffed bed data from the Pennsylvania Department of Health's (DOH) Division of Health Informatics, which captured these statistics in its Hospital Questionnaire dataset (2019).

Analyses of top employers were based on 2019 third- and 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 <u>Federal RePORTER</u>, which reports about the National Institutes of Health (NIH), the Agency for Healthcare Research and Quality, and other HHS operating divisions.

### Pennsylvania Hospitals' Statewide Economic Impact

Statewide: Hospital community's contributions to Pennsylvania's Gross Domestic Product

The hospital industry has been, and will continue to be, a leading contributor to the economy. Data from the BEA indicate that Pennsylvania's gross domestic product (GDP) during 2019 totaled \$809 billion (in current dollars).<sup>4</sup> When considering the direct plus ripple impact of the hospital community on Pennsylvania's economy, hospitals account for 17.7 percent of the commonwealth's 2019 GDP.<sup>5</sup>

### Statewide: Total economic impact of hospital spending

As depicted in Figure 1, Pennsylvania hospitals and health systems contribute \$143.0 billion to the commonwealth's economy through:

- \$64.4 billion in direct impact—the dollars hospitals pay out for employee salaries, wages, and benefits and for the many goods and services needed to provide health care services and support hospital and health system operations
- \$78.6 billion in ripple impact—the additional economic activity that results from the circulation of hospital dollars in local communities and across the state

HAP's analysis confirms that the industry's spending has been increasing steadily—by 45 percent during the last ten years (see Figure 2).

The hospital community's direct and ripple impact on Pennsylvania's 2019 economy represents 17.7 percent of the commonwealth's 2019 gross domestic product.



**Total Spending Contribution: \$143.0 billion Direct** Ripple Impact, Impact, \$78.6 billion \$64.4 billion

Figure 1: Total Spending Contribution of Pennsylvania Hospitals, 2019

Source: HAP's 2020 analysis of HHS HCRIS FY 2019 data, coupled with data provided directly to HAP by Pennsylvania health systems

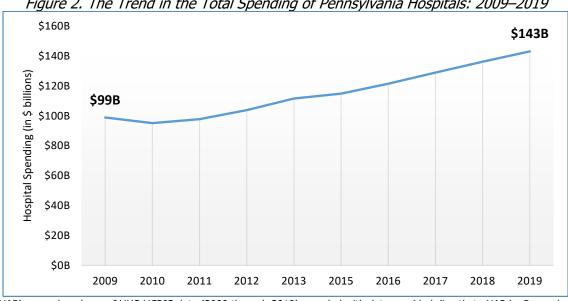


Figure 2. The Trend in the Total Spending of Pennsylvania Hospitals: 2009–2019

Source: HAP's annual analyses of HHS HCRIS data (2009 through 2019), coupled with data provided directly to HAP by Pennsylvania health systems (2009 through 2019)

### Statewide: Total economic impact of employment

Pennsylvania hospitals directly employed more than 291,000 workers during 2019. Employment generated by the industry's indirect and induced economic effects resulted in the employment of more than 371,000 Pennsylvanians. The total number of hospital-supported jobs, therefore, is more than 660,000—or one of every nine jobs in the state (i.e., 11.1% of the Pennsylvania's entire workforce).6 (See Figure 3.)

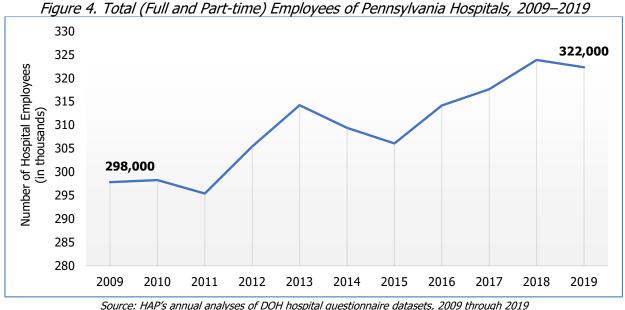


**Total Employment Contribution of 663,593 Direct Impact,** Ripple Impact, 291,638 (44%) 371,955 (56%)

Figure 3. Total Employment Attributable to Hospitals during 2019: More Than 660,000 Jobs

Source: HAP's 2020 analysis of Pennsylvania Department of Labor & Industry, 2019 Q4 Employment and Wages Data

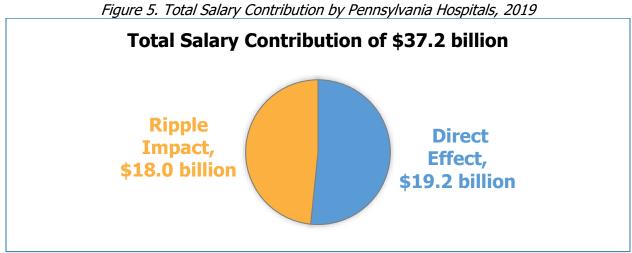
HAP's longitudinal analysis of DOH hospital questionnaire datasets from 2009 through 2019 illustrates the growth of total hospital employees across the last ten years (see Figure 4). These numbers represent the full-time and part-time employees on payroll, as well as full-time and part-time contracted employees.





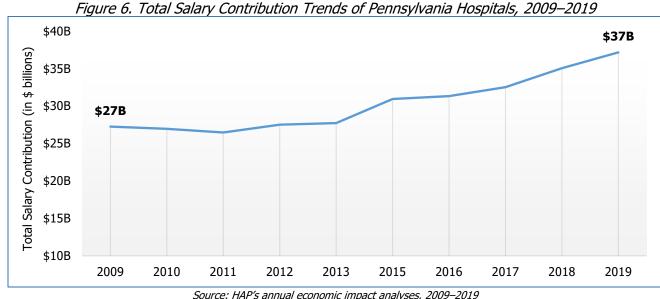
### Statewide: Total economic impact of wages

Pennsylvania hospitals generated more than \$37 billion in direct and ripple wages during 2019, including \$19 billion in direct wages and \$18 billion in ripple wages (i.e., indirect plus induced—see the "Definitions" section for details) across hospital-supported industries (see Figure 5).



Source: HAP's 2020 analysis of Pennsylvania Department of Labor & Industry, 2019 Q4 Hospital Employment and Wages

A longitudinal view illustrates that salaries provided and supported by Pennsylvania hospitals also have been increasing. Total hospital salary contributions in the commonwealth increased 36 percent from 2009 to 2019.



Source: HAP's annual economic impact analyses, 2009–2019



### Pennsylvania Hospitals' Regional Economic Impact

Pennsylvania is divided into nine regions by the Pennsylvania Health Care Cost Containment Council (PHC4), an independent state agency formed during 1986 by Pennsylvania statute. HAP combined the two Philadelphia area regions into one ("Southeast"), as shown in Figure 7. The list of counties comprising each region is in Appendix A.

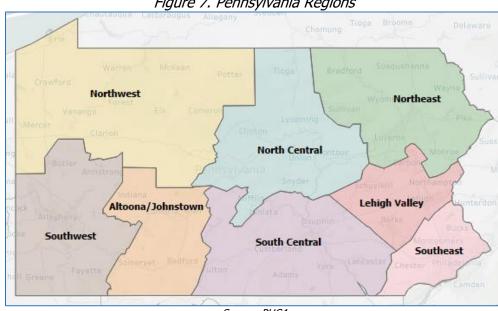


Figure 7. Pennsylvania Regions

Source: PHC4

### Regional: Total economic impact of spending

Examining spending by regions illustrates the significant effect of the hospital community on local economies across Pennsylvania, ranging from \$2 billion total spending in the smallest region (Altoona/Johnstown) to \$38 billion in the largest (Southeast). To calculate the hospital community's regional economic impact, HAP purchased and applied regional multipliers from the BEA.8

Figures 8 through 10 represent regional contributions in total (direct plus ripple) spending, total salaries, and total employment.



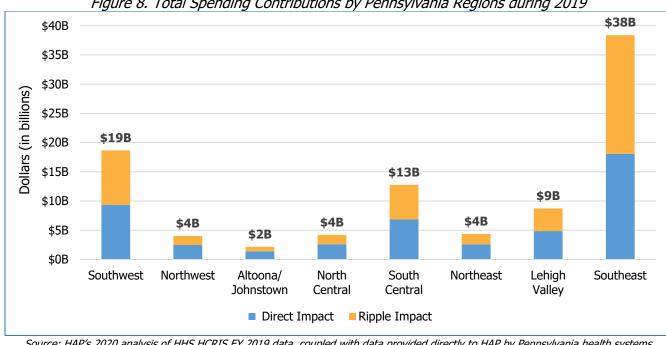
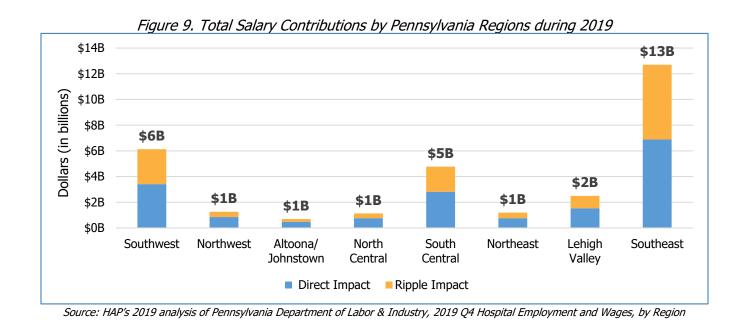


Figure 8. Total Spending Contributions by Pennsylvania Regions during 2019

Source: HAP's 2020 analysis of HHS HCRIS FY 2019 data, coupled with data provided directly to HAP by Pennsylvania health systems





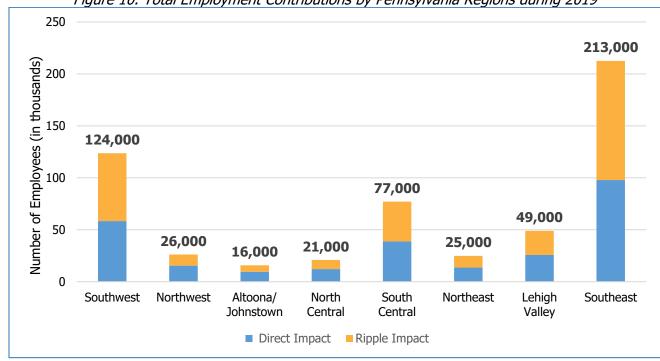


Figure 10. Total Employment Contributions by Pennsylvania Regions during 2019

Source: HAP's 2019 analysis of HHS HCRIS FY 2019 data, coupled with data provided directly to HAP by Pennsylvania health systems

### **Hospitals Are Top Employers within Their Counties**

HAP's analysis of each county's top 50 employers and industries reveals that:

- 87 percent of Pennsylvania 67 counties (i.e., 58 counties) have at least one hospital among their top ten largest employers
- 83 percent of Pennsylvania's 48 rural counties have at least one hospital among their top ten largest employers
- 97 percent of Pennsylvania's 67 counties (i.e., 65 counties) include a hospital or a hospital or system-affiliated facility among their top 50 largest employers
- In 19 counties, a hospital is the number one largest employer<sup>9</sup>

### **Federal Health Care Research Funds**

Pennsylvania hospitals and universities with hospital-affiliated medical schools have been remarkably successful at securing competitive federal health research dollars. For example, the NIH awarded \$1.8 billion in research grants to hospitals and universities with hospital-affiliated medical schools in Pennsylvania, although the NIH nationally awarded funds to only 20 percent of its applicants during FY 2019.<sup>10</sup>



In total, during federal fiscal year (FFY) 2019, hospitals and universities with hospital-affiliated medical schools brought to Pennsylvania more than \$1.85 billion in research awards from federal agencies (i.e., operating divisions within HHS). This constitutes more than 80 percent of the \$2.28 billion in federal research funding awarded during FFY 2019 to all Pennsylvania organizations (including research institutes, pharmaceutical companies, and non-hospital-affiliated universities).

Figure 11: Health Research-related Federal HHS Funds received by Pennsylvania Organizations during FFY 2019

Agency	FFY 2019 Total Funding to all PA- based organizations	FFY 2019 Funding to PA Hospitals and Universities with Medical Schools
Agency for Healthcare Research and Quality	\$6,831,000	\$6,432,000
Centers for Disease and Prevention	\$12,545,000	\$10,297,000
Food and Drug Administration	\$15,681,000	\$2,105,000
National Institutes of Health	\$2,209,767,000	\$1,835,082,000
Total	\$2,284,155,000	\$1,853,915,000

Figure 12 provides the breakdown of research funding to Pennsylvania's hospitals and hospital-affiliated medical schools.

Figure 12: HHS Funds Awarded to Pennsylvania's Hospitals and Universities with Hospital-Affiliated

Medical Schools during FFY 2019

Agency	Number of Projects	FFY 2019 Total Funding
Children Hospital of Philadelphia	306	\$207,356,000
Drexel University	114	\$44,597,000
Pennsylvania State University	370	\$148,654,000



Temple University	238	\$90,651,000
The University of Pittsburgh	1313	\$618,138,000
Thomas Jefferson University	193	\$72,670,000
University of Pennsylvania	1570	\$671,849,000
Total	4,104	\$1,853,915,000

### **Economic Impact of Pennsylvania Hospitals: Uncaptured Components**

While the illustrated economic impact results in this report reveal the significance of Pennsylvania hospitals to the economic well-being of their communities, the exact value brought by a hospital to its surroundings is not limited to these. Other significant elements of the hospital community's impact on the state and regional economies that are not quantified in this analysis include the economic benefits associated with training health care professionals, the contributions of charity and unreimbursed care, and the overall increased productivity to Pennsylvania's workforce.

**Training tomorrow's healers**: According to the Association of American Medical Colleges, the nation will experience a shortage of physicians approaching 139,000 by 2033.<sup>11</sup> Pennsylvania hospitals train thousands of doctors and other clinicians each year through their partnerships with the commonwealth's 1,327 health care professional training programs. This includes 300 nursing programs and nine medical schools associated with Pennsylvania hospitals and health systems.<sup>12</sup>

Charity and unreimbursed care: Pennsylvania hospitals provide extensive charity care (i.e., care that the facility provides without charge) to their communities. Charity care plus bad debt (i.e., those charges hospitals initially anticipated would be paid but later determined were uncollectible) together comprise the hospital's total uncompensated care costs—all of which help ensure the public health of all Pennsylvanians. According to data from PHC4's financial reports for FY 2018 and FY 2019, Pennsylvania general acute hospitals reported \$820 million in foregone revenue stemming from their uncompensated care contributions, up from \$750 million during FY 2018, a 9.3% increase. <sup>13</sup>

Pennsylvania general acute care hospitals reported \$820 million in foregone revenue stemming from their uncompensated care contributions during FY 2019.



**Increased productivity for 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 billion annually. <sup>14</sup> By providing services designed to improve the health of the commonwealth's workforce, Pennsylvania hospitals help to reduce the cost of this lost productivity.

# **Growing Role of Hospitals in Pennsylvania Economy: Implications from the Data**

**Demographics show growth of elderly population**: Demand for clinicians is rising as baby boomers age and live longer. According to U.S. Census 2019 estimates, Pennsylvania's population of those aged 65 and older (18.7%) exceeded the national average (16.5%), while Pennsylvanians living with disabilities (9.8%) also exceeded the national average (8.6%).<sup>15</sup> 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 percent.<sup>16</sup> Demand for health care for the elderly—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 percent 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. According to Pennsylvania Department of Labor & Industry's projections, health care support occupations, as well as health care practitioners and technical occupations, are the top two fastest growing industries with projected growth of 16 percent and 12 percent, respectively, by 2026.

### **Looking to the Future**

Even prior to the onset of COVID-19, Pennsylvania hospitals and health systems faced financial stress. According to a report by PHC4, uncompensated care (bad debt plus charity care) for Pennsylvania general acute hospitals had increased from \$750 million during FY 2018, to \$820 million during FY 2019, an increase of 9.3 percent, the first year—to-year increase in uncompensated care during the past five years. Furthermore, FY 2019 saw 34 percent of Pennsylvania hospitals post negative operating margins, with 29 percent of the state's hospitals posting operating margins between 0 percent and 4 percent.<sup>19</sup>

A pandemic the magnitude of COVID-19 has sent shockwaves through Pennsylvania. Thousands have lost their lives or will endure lasting health consequences as a result of COVID-19. The state's unemployment rate jumped from 4.7 percent during February 2020, to 16.1 percent during April 2020 and has remained high (7.3 percent during October 2020).<sup>20</sup> In addition, a report by Health Management Associates (HMA) estimates that close to 1 million Pennsylvanians could lose employer-sponsored health insurance coverage as a result of the pandemic.<sup>21</sup>

The COVID-19 pandemic also will leave lasting scars on Pennsylvania's hospitals and health systems. According to another HMA report, hospitals statewide incurred losses in excess of \$5 billion due to



temporary closures and curtailing non-emergency treatment.<sup>22</sup> Unemployment claims for the health care sector in Pennsylvania increased five-fold between February and November 2020.<sup>23</sup>

Though the leadership and employees of the state's hospitals and health systems have performed heroically in the face of the pandemic, continued federal and state support will be imperative to ensure they are able to perform as the economic and health care flagships for their communities.

Hospitals need sustainable payments for the care they provide, and to innovate and utilize the emerging mechanisms for delivering care in the post-COVID-19 world. These payments include:

- Reimbursement for telehealth
- Sustained state budget support for OB/NICU, burn and trauma centers, and critical access hospitals
- Sufficient reimbursement from Medicare, Medicaid, and private insurance

Hospitals also will need lawmaker support to continue reducing administrative red tape, so they can focus on caring for patients. These measures include streamlining processes for things like credentialing and prior authorization, as well as maintenance of the waivers put in place during the pandemic to ease the regulatory burden on hospitals.

### **Conclusion**

The COVID-19 pandemic has reinforced the need for patients' access to care and a strong health care delivery system.

While hospitals are economic anchors in the communities they serve as documented above, they also provide extensive direct and ripple economic impacts throughout Pennsylvania. These hospitals provided the commonwealth a total economic value of \$143 billion during 2019 in spending, including \$64 billion in direct and \$79 billion in ripple impacts.

The total economic value includes \$37 billion in salaries, which support thousands of Pennsylvania families. Indeed, Pennsylvania hospitals and health systems contribute to 663,593 jobs, or 11.1 percent of the commonwealth's entire workforce—that means hospitals support one out of nine jobs across the state. HAP's analysis shows a steady trend of increase in all these values through the last ten years.

Helping to pave the way for new evidence-based technology and cutting-edge care delivery, during 2019 alone, Pennsylvania's hospitals and universities with hospital-affiliated medical schools attracted an estimated \$1.85 billion in federal and quasi-federal research funds. These investments are designed to improve health and health care delivery not just for Pennsylvanians, but for patients across the country and around the world.

In addition, commonwealth hospitals serve their communities through educating tomorrow's health care professionals, by providing both charity care and unreimbursed care, and through increasing the productivity of Pennsylvania's workforce.



## **Appendix A**

Counties Comprising Each Region

PHC4 Region Name	Counties
Southwest	Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Washington, and Westmoreland
Northwest	Cameron, Clarion, Clearfield, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Potter, Venango, and Warren
Altoona/Johnstown	Bedford, Blair, Cambria, Indiana, and Somerset
North Central	Centre, Clinton, Columbia, Lycoming, Mifflin, Montour, Northumberland, Snyder, Tioga, and Union
South Central	Adams, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Perry, and York
Northeast	Bradford, Lackawanna, Luzerne, Monroe, Pike, Sullivan, Susquehanna, Wayne, and Wyoming
Lehigh Valley	Berks, Carbon, Lehigh, Northampton, and Schuylkill
Southeast	Bucks, Chester, Delaware, Montgomery, and Philadelphia



### **Endnotes**

<sup>1</sup> Regional Input-Output Modeling System (RIMS II): An Essential Tool for Regional Developers and Planners. See Glossary, p. 67. December 2013. Bureau of Economic Analysis, U.S. Department of Commerce. Retrieved from: <a href="https://apps.bea.gov/regional/pdf/rims/RIMSII">https://apps.bea.gov/regional/pdf/rims/RIMSII</a> User Guide.pdf. Last accessed: 12/15/2020.
<sup>2</sup> Ibid.

https://www.workstats.dli.pa.gov/Products/Top50/Pages/default.aspx. Last accessed: 08/20/2020.

<sup>&</sup>lt;sup>3</sup> Ibid.

<sup>&</sup>lt;sup>4</sup> U.S. Bureau of Economic Analysis. <u>GDP and Personal Income</u>. See <u>Annual Gross Domestic Product (GDP) by State, GDP in current dollars (SAGDP2)</u>. Selection criteria: NAICS, Pennsylvania, 2019. Retrieved from: <a href="https://apps.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdn=1#reqid=70&step=1&isuri=1&acrdn=1/2.">https://apps.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdn=1/2.</a> Last updated: 11/02/2020. Last accessed: 12/15/2020.

<sup>&</sup>lt;sup>5</sup> HAP calculated the hospital community's contribution to the GDP by dividing the 2019 Pennsylvania GDP (\$809 billion) by the community's total—direct plus ripple—economic impact (\$143 billion).

<sup>&</sup>lt;sup>6</sup> Based upon 2019 Q4 Hospital Employment and Wages data, provided to HAP Research Department by the Pennsylvania Department of Labor and Industry, Center for Workforce Information and Analysis.

<sup>&</sup>lt;sup>7</sup> See <u>Service and Data Requests – Regional Map</u>. Pennsylvania Health Care Cost Containment Council (PHC4). Retrieved from <a href="http://www.phc4.org/services/datarequests/regionalmap.htm">http://www.phc4.org/services/datarequests/regionalmap.htm</a>. Last accessed: 12/15/2020. Note: HAP's analysis combined Region 9 (County of Philadelphia) with Region 8 (counties bordering Philadelphia County).

<sup>&</sup>lt;sup>8</sup> Note: HAP's commonwealth-wide impacts do not equal the sum of the regional economic impacts because, per BEA's guidance, HAP's research department calculated state and regional effects independently using BEA's state and regional multipliers, respectively. Moreover, HAP's statewide analysis also include system-level data that cannot be attributed to a single region.

<sup>&</sup>lt;sup>9</sup> <u>Pennsylvania Top 50 Employers & Industries</u>. Pennsylvania Department of Labor and Industry, Center for Workforce Information and Analysis. Retrieved from

<sup>&</sup>lt;sup>10</sup> National Institutes of Health, Research Portfolio Online Reporting Tools. "Research Project Grants: Competing Applications, Awards, and Success Rates.". Retrieved from: https://report.nih.gov/nihdatabook/report/20. Last accessed: 12/15/2020.

<sup>&</sup>lt;sup>11</sup> "<u>The Complexities of Physician Supply and Demand: Projections from 2018 to 2033."</u> Published by Association of American Medical Colleges, June 2020. Page 1. Retrieved from: <a href="https://www.aamc.org/system/files/2020-06/stratcomm-aamc-physician-workforce-projections-june-2020.pdf">https://www.aamc.org/system/files/2020-06/stratcomm-aamc-physician-workforce-projections-june-2020.pdf</a>. Last accessed: 08/19/2020.

<sup>&</sup>lt;sup>12</sup> Number of Healthcare-Related Training Programs in PA. 2017-2018. National Center for Education Statistics, Integrated Postsecondary Education Data System. Data obtained from Pennsylvania Department of Labor & Industry on 11/13/2020.

<sup>&</sup>lt;sup>13</sup> See PHC4's <u>Financial Analysis 2019</u>, <u>Volume 1</u>; April 2020; p. 1 and <u>Financial Analysis</u>, <u>Fiscal Year 2019</u> for uncompensated care data for general acute care hospitals. FY 2019 data for non-GAC hospitals was not available at time of publication. Retrieved from: <a href="http://www.phc4.org/reports/fin/19/">http://www.phc4.org/reports/fin/19/</a>. Last accessed: 12/15/2020.

<sup>&</sup>lt;sup>14</sup> <u>Workplace Health Promotion</u>. National Center for Chronic Disease Prevention and Health Promotion. Retrieved from: <a href="https://www.cdc.gov/chronicdisease/resources/publications/factsheets/workplace-health.htm">https://www.cdc.gov/chronicdisease/resources/publications/factsheets/workplace-health.htm</a>. Last accessed: 12/15/2020.

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<sup>&</sup>lt;sup>16</sup> Pennsylvania Population Projections 2010-2040. March 2014. The Center for Rural Pennsylvania (See pp. 22 to 24.) Retrieved from: <a href="https://www.rural.palegislature.us/documents/reports/Population Projections Report.pdf">https://www.rural.palegislature.us/documents/reports/Population Projections Report.pdf</a>. Last accessed: 12/15/2020.

<sup>&</sup>lt;sup>17</sup> Alter TR, Fuller TR, Hoy RL, Martino NC, Schmidt CH, and Sontheimer T. <u>Pennsylvania: Bust to Boom? Great Recession to Recovery and Beyond</u>. Center for Economic and Community Development, Department of Agricultural Economics, Sociology, and Education, Penn State University. June 2019. Retrieved from



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