

# **ECONOMIC IMPACT**

**OF UPMC HILLMAN CANCER CENTER**

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**MARCH 2024**



## EXECUTIVE SUMMARY

UPMC Hillman Cancer Center (UPMC Hillman) is a preeminent cancer center that upholds its mission to advance the fight against cancer on multiple fronts. With its foundation rooted in research and clinical excellence, this center, affiliated with UPMC and the University of Pittsburgh, serves as a trusted institution for patients, their families, and communities in the battle against this complex and challenging disease.

UPMC Hillman is a significant driver of the Pennsylvania economy, positively impacting the lives of the citizens in communities across the Commonwealth. In 2022, UPMC Hillman commissioned Tripp Umbach<sup>1</sup> to evaluate the economic impact of UPMC Hillman on the City of Pittsburgh, Allegheny County, and the Commonwealth of Pennsylvania for Fiscal Year 2023 (FY23)<sup>2</sup>. The report also demonstrates the economic impact of UPMC Hillman on Pennsylvania counties outside of Allegheny County. The data presented in this report indicates that UPMC Hillman's comprehensive cancer care positively affects the lives of the region's citizens and the state's economic climate.

UPMC Hillman's annual economic impact on the Commonwealth of Pennsylvania is **\$3.98 billion**, which supports **17,615 jobs** and generates **\$180.1 million** in tax revenue to support schools, public safety, and public infrastructure. With an additional **\$83.4 million** paid in direct tax payments, UPMC Hillman generates a total contribution of **\$263.5 million** to state and local governments. UPMC Hillman's research engine fuels economic development in its region by recruiting clinicians, scientists, and researchers; investing in state-of-the-art facilities; and commercializing concepts incubated within its labs and clinics.

Tripp Umbach's analysis of cancer screening and treatment data provided by UPMC Hillman indicates that UPMC Hillman's prevention and early detection services in FY23 resulted in **\$1.4 billion** in healthcare cost avoidance statewide. These impacts are in addition to UPMC Hillman's **\$3.98 billion** overall economic impact. UPMC Hillman's statewide care model, bringing high-quality cancer services to communities throughout the Commonwealth, saves Pennsylvania patients and their families **\$170 million** annually in out-of-pocket cost avoidance, travel expenses, and loss of wages during treatment.

The impact of the UPMC Hillman brand and the University of Pittsburgh provides recruitment power for national and global talent, leading to the cancer center attracting human capital to the Commonwealth. UPMC Hillman provides additional economic benefits beyond its operations, as it improves patients' lives, which in turn supports a healthier population that contributes even more to the economy.

<sup>1</sup> All findings, conclusions, or opinions are those of Tripp Umbach. Tripp Umbach is the leading economics consulting firm in the United States serving healthcare, higher education, and academic medical centers, having completed more than 1,000 studies since 1990.

<sup>2</sup> Fiscal Year 2023 - July 2022-June 2023.

# PENNSYLVANIA



**ECONOMIC IMPACT: \$3.98 BILLION**



**EMPLOYMENT IMPACT: 17,615**



**STATE AND LOCAL TAXES GENERATED: \$263.5 MILLION**

**DIRECT STATE AND LOCAL TAXES PAID: \$83.4 MILLION**

**INDIRECT STATE AND LOCAL TAXES IMPACT: \$180.1 MILLION**

## OPERATIONS

ECONOMIC IMPACT: \$2.94 BILLION

EMPLOYMENT IMPACT: 12,056

TOTAL STATE TAXES IMPACT: \$133.3 MILLION

## VISITORS

ECONOMIC IMPACT: \$542.8 MILLION

EMPLOYMENT IMPACT: 3,522

STATE TAX IMPACT: \$24.4 MILLION

## RESEARCH

ECONOMIC IMPACT: \$497.2 MILLION

EMPLOYMENT IMPACT: 2,037

STATE TAX IMPACT: \$22.4 MILLION

# ALLEGHENY COUNTY

*(NOT INCLUDING THE IMPACTS ON THE CITY OF PITTSBURGH)*



**ECONOMIC IMPACT: \$1.03 BILLION**



**EMPLOYMENT IMPACT: 4,537**



**TAX IMPACT: \$46.4 MILLION**

## OPERATIONS

ECONOMIC IMPACT: \$757.3 MILLION

EMPLOYMENT IMPACT: 3,106

COUNTY TAX IMPACT: \$34.3 MILLION

## VISITORS

ECONOMIC IMPACT: \$139.8 MILLION

EMPLOYMENT IMPACT: 907

COUNTY TAX IMPACT: \$6.3 MILLION

## RESEARCH

ECONOMIC IMPACT: \$128.1 MILLION

EMPLOYMENT IMPACT: 524

COUNTY TAX IMPACT: \$5.8 MILLION

# CITY OF PITTSBURGH

(IN ADDITION TO THE IMPACTS ON ALLEGHENY COUNTY)



**ECONOMIC IMPACT: \$1.65 BILLION**



**EMPLOYMENT IMPACT: 7,306**



**TAX IMPACT: \$74.7 MILLION**

## OPERATIONS

ECONOMIC IMPACT: \$1.22 BILLION

EMPLOYMENT IMPACT: 5,001

CITY TAX IMPACT: \$55.3 MILLION

## VISITORS

ECONOMIC IMPACT: \$225.1 MILLION

EMPLOYMENT IMPACT: 1,461

CITY TAX IMPACT: \$10.1 MILLION

## RESEARCH

ECONOMIC IMPACT: \$206.2 MILLION

EMPLOYMENT IMPACT: 844

CITY TAX IMPACT: \$9.3 MILLION

# PA COUNTIES

(OUTSIDE OF ALLEGHENY COUNTY AND PITTSBURGH)



**ECONOMIC IMPACT: \$1.30 BILLION**



**EMPLOYMENT IMPACT: 5,772**



**TAX IMPACT: \$59.0 MILLION**

## OPERATIONS

ECONOMIC IMPACT: \$963.3 MILLION

EMPLOYMENT IMPACT: 3,950

COUNTY TAX IMPACT: \$43.7 MILLION

## VISITORS

ECONOMIC IMPACT: \$177.9 MILLION

EMPLOYMENT IMPACT: 1,153

COUNTY TAX IMPACT: \$8.0 MILLION

## RESEARCH

ECONOMIC IMPACT: \$162.9 MILLION

EMPLOYMENT IMPACT: 667

COUNTY TAX IMPACT: \$7.3 MILLION

# METHODOLOGY

Studies measuring economic impact capture the direct impact of an organization's spending, plus additional indirect and induced spending in the economy because of direct spending.

UPMC Hillman affects Pennsylvania's economy in two ways:

- Direct expenditures by UPMC Hillman, its employees, out-of-area patients, and visitors. This spending supports local businesses, which employ local individuals to sell the goods and provide the services the cancer center needs to operate.
- Indirect and induced spending within Pennsylvania. The businesses and individuals receiving direct payments from UPMC Hillman also spend this money within Pennsylvania and the Pittsburgh region, thus creating additional jobs.

The economic impact findings presented in this report were developed by Tripp Umbach using IMPLAN<sup>3</sup> analysis to measure the dollars generated within defined geographic areas because of UPMC Hillman. The analysis was completed from FY23 data supplied by UPMC Hillman, including spending on goods and services with vendors, number of employees, and visitors<sup>4</sup> within the Commonwealth of Pennsylvania for conferences and meetings.

IMPLAN analysis accounts only for dollars spent by UPMC Hillman that remain in Pennsylvania. It does not include dollars that flow out of the state in purchases from out-of-state vendors. These economic impacts are generated by and analyzed through IMPLAN in the following categories: operations of the cancer center, research spending within the cancer center, capital spending to maintain the facilities, and visitor spending by individuals attending meetings or events or those receiving care.



<sup>3</sup> See Appendix A for a full methodology.

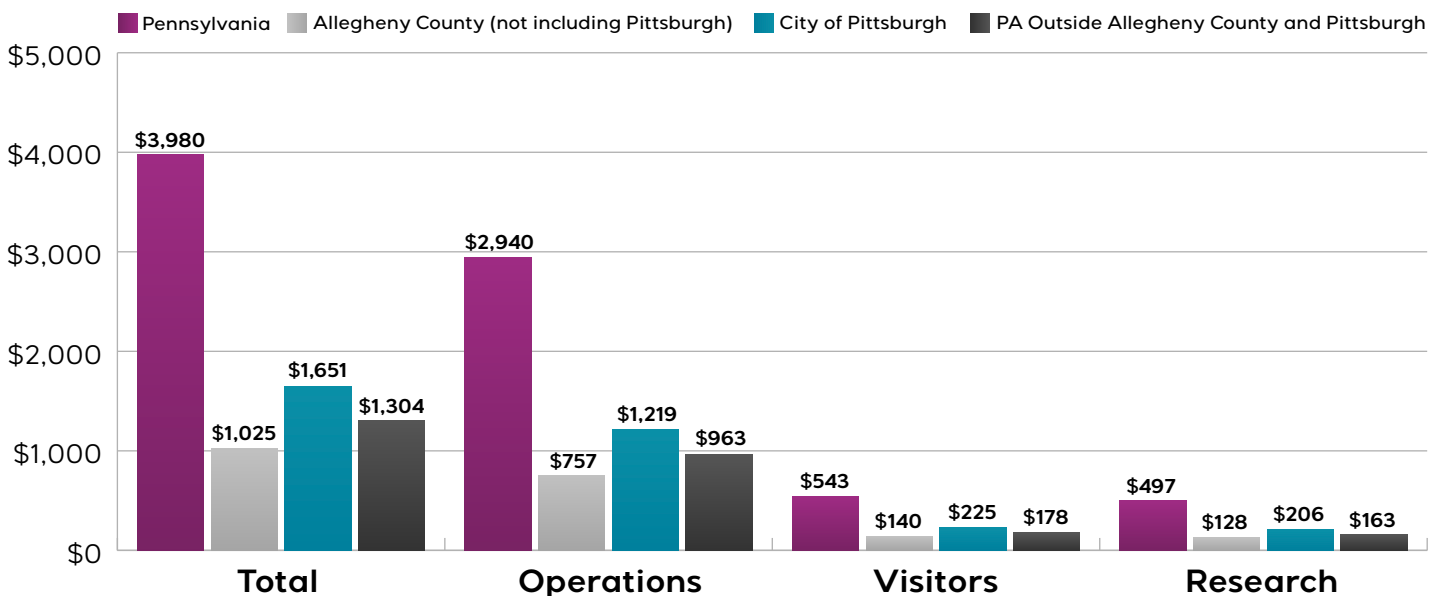
<sup>4</sup> Tripp Umbach modeled visitors to UPMC Hillman based on outpatient and inpatient data supplied by the client. Tripp Umbach's national model to show the number of patients and patient visitors who visit and stay overnight was adjusted by a factor of (.7) to reflect the hub-and-satellite system where patients are less likely to travel to the main campus to receive care as outpatients. This analysis assumed that Allegheny County residents would not stay overnight for visits. The client also supplied data to Tripp Umbach on the number of conferences, meetings, and events. Spending from conferences, meetings, and event visitors, based on regional spending standards supplied by IMPLAN, was added to patient visitor numbers. Based on hotel availability and distance decay modeling from the Shadyside campus, Tripp Umbach assumes that 50% of all overnight visitors stayed within the city limits.



## TOTAL ECONOMIC IMPACT OF UPMC HILLMAN IN FY23

The findings in the report show that in FY23, UPMC Hillman generated **\$3.98 billion** in total economic impact in Pennsylvania through its clinical, research, and educational missions. UPMC Hillman’s total economic impact in Allegheny County outside the City of Pittsburgh equaled **\$1.03 billion**, with an additional **\$1.65 billion** in total economic impact on the City of Pittsburgh. UPMC Hillman’s impact in FY23 on Pennsylvania communities outside of Allegheny County and the City of Pittsburgh equaled **\$1.30 billion** (see Figure 1).

**Figure 1. Total Economic Impact from Operations, Visitors, and Research (in millions)**



UPMC Hillman offers a unique hub-and-satellite clinical and research model to serve its expanding geographic footprint. Anchored by the flagship cancer center in the Shadyside neighborhood of Pittsburgh, UPMC Hillman offers cancer care in more than 70 locations throughout Pennsylvania, Ohio, New York, and western Maryland and in Ireland and Italy. Note: This report does not include economic impact calculations on Ohio, New York, and Maryland or international locations.

# ECONOMIC IMPACT OVERVIEW

## OPERATIONS

Operational expenditures by UPMC Hillman, including payroll, account for most of the spending and economic impact generated in the local and statewide economy. Operational spending includes, but is not limited to, employee pay and benefits, clinical operations, and utility payments.

In FY23, UPMC Hillman's operational expenditures generated an annual economic impact of **\$2.94 billion**.

These impacts are measured annually and include direct spending by UPMC Hillman and its employees and additional spending in the Commonwealth from the re-spending of dollars in the economy. Dollars spent by UPMC Hillman ripple through the economy within multiple industries impacted by the organization.

## VISITORS

Cancer centers are generators of visitors to the communities in which they are located. Visitors typically fall into three categories: cancer patients coming from outside the Allegheny County area to receive treatments, friends or family members who may accompany the patient, and visitors who come for meetings or events at UPMC Hillman Cancer Center. These visitors go to restaurants and retail establishments and stay in hotels.

Using models developed by Tripp Umbach for similar studies, the firm estimates that in FY23, visitors to UPMC Hillman generated **\$542.8 million** (see Figure 1).

## RESEARCH

The cutting-edge research at UPMC Hillman is rooted in deep collaboration among primary, clinician-translational, and population scientists who bring the most promising bench research, epidemiological studies, and clinical trials to provide patients with much-needed access to innovative cancer prevention and treatment interventions. UPMC Hillman's research enterprise, including cancer-related research at the University of Pittsburgh, generates an annual economic impact of **\$497.2 million** (see Figure 1).



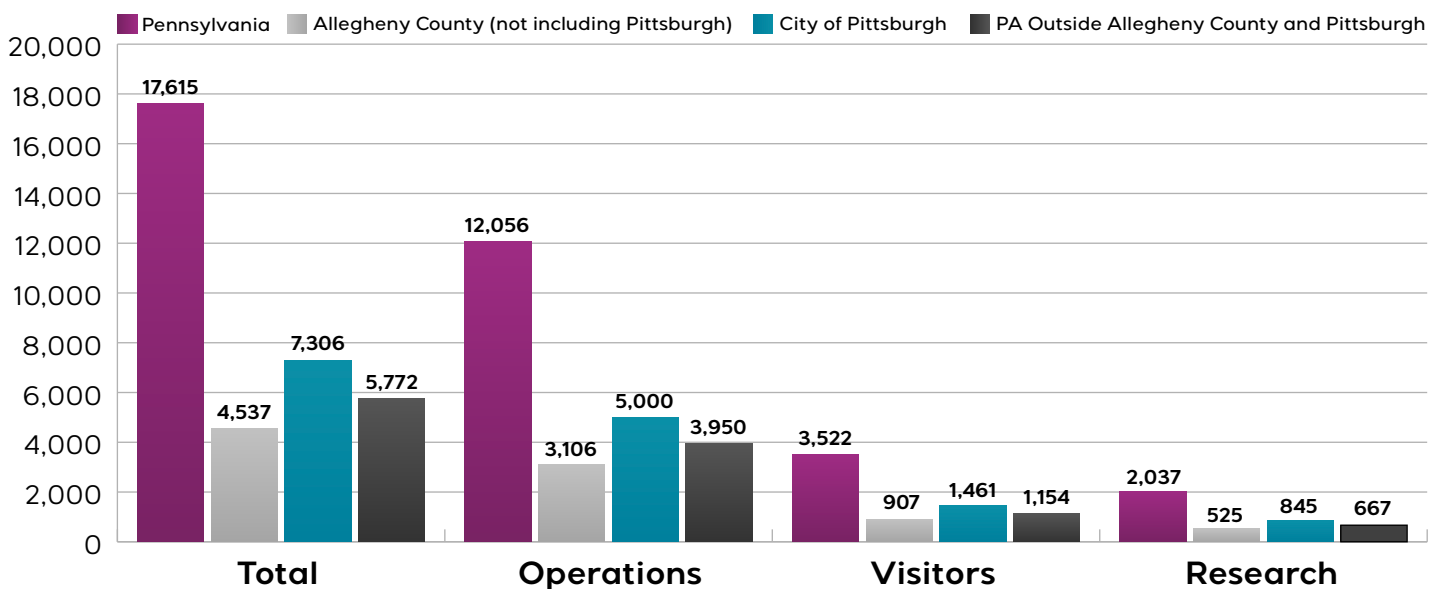
## EMPLOYMENT IMPACT

Investments in people play a critical role as those individuals connect with other researchers, private companies, clinics, hospitals, higher education institutions, physicians, and healthcare professionals across the state. Attracting world-renowned talent has been part of UPMC Hillman’s mission since it was founded as the University of Pittsburgh Cancer Institute in 1985. UPMC Hillman is home to more than 400 full-time researchers and 180 medical, radiation, and surgical oncologists practicing within the unique hub-and-satellite model of regionally distributed treatment and research sites.

According to Tripp Umbach’s analysis, in FY23, UPMC Hillman supported **17,615 jobs** statewide, including 4,100 direct jobs and 13,515 indirect jobs. UPMC Hillman supported **4,537 jobs** (1,056 direct jobs and 3,481 indirect jobs) in Allegheny County, with an additional **7,306 jobs** (1,701 direct jobs and 5,605 indirect jobs) in the City of Pittsburgh. UPMC Hillman supported **5,772 jobs** (1,343 directly and 4,429 indirectly) in Pennsylvania communities outside of Allegheny County and the City of Pittsburgh through its unique regional network (see Figure 2).

These jobs included direct employment from UPMC Hillman Cancer Center and indirect jobs created through the supply chain, equipment vendors, construction laborers, and other contractors. UPMC Hillman expands the regional and statewide workforce by attracting high-caliber researchers, scientists, educators, clinical practitioners, and visitors from outside the Commonwealth for care, conferences, and professional meetings (see Figure 2).

**Figure 2. Total Employment Impacts by Geography and Job Type**



## EMPLOYMENT IMPACT OVERVIEW

### OPERATIONS

The major contributor to an organization's economic impact includes spending on payroll, goods and services, technology, and facilities. UPMC Hillman operations had a total employment impact on the state FY23 of **12,056 total jobs** (directly and indirectly). UPMC Hillman supported **3,106 total jobs** in Allegheny County outside of the City of Pittsburgh and an additional **5,001 total jobs** supported in the City of Pittsburgh. In FY23, UPMC Hillman supported **3,950 jobs** in Pennsylvania communities outside of Allegheny County and the City of Pittsburgh (see Figure 2).

These impacts are measured annually and include direct spending by UPMC Hillman, employees, and additional spending in the Commonwealth, Allegheny County, the City of Pittsburgh, and Pennsylvania communities outside of Allegheny County and the City of Pittsburgh from the re-spending of dollars in the economy. Dollars spent by UPMC Hillman ripple through the economy through multiple industries impacted by the organization.

### VISITORS

Cancer centers are important generators of visitors to the communities in which they are located. Visitors are attracted in three main ways: cancer patients coming from outside the Allegheny County area to receive treatments, friends or family members that may accompany the patient, and visitors who come for meetings or events at UPMC Hillman Cancer Center. These visitors support jobs at restaurants, hotels, retail establishments, rental car companies, and airports.

Tripp Umbach estimates that in FY23, visitors to UPMC Hillman supported **3,522 total jobs** and generated **\$24.4 million** in taxes through their spending patterns. These impacts are captured within UPMC Hillman's statewide employment impact of **17,615 total jobs** (see Figure 2).

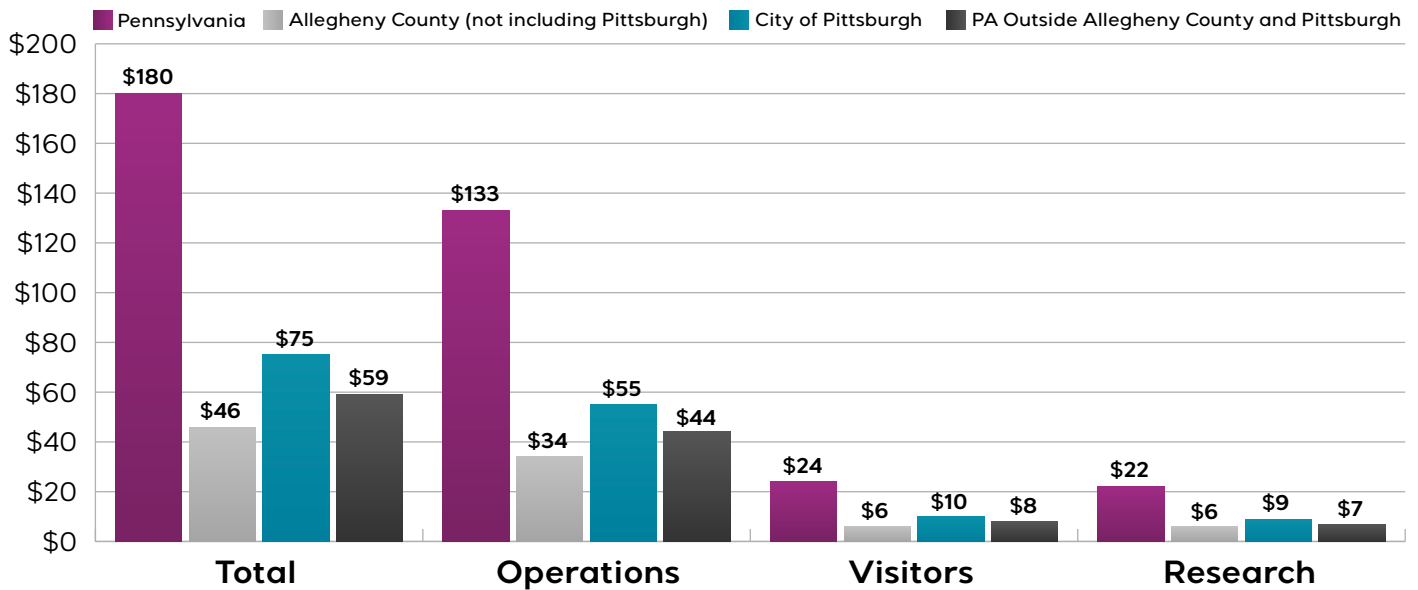
### RESEARCH

The cutting-edge research at UPMC Hillman is rooted in deep collaboration among primary, clinician-translational, and population scientists who bring the most promising bench research, epidemiological studies, and clinical trials to provide patients with much-needed access to innovative cancer prevention and treatment interventions. UPMC Hillman's research enterprise, including cancer-related research at the University of Pittsburgh, generates **2,037 jobs** across the Commonwealth of Pennsylvania (see Figure 2).

# STATE AND LOCAL TAX IMPACTS

UPMC Hillman Cancer Center generated **\$180.1 million** in state and local tax revenue in FY23. An additional **\$83.4 million** in direct taxes was paid directly to state and local governments, totaling **\$263.5 million**. In FY23, UPMC Hillman generated **\$46.4 million** in indirect tax revenue for Allegheny County outside of the City of Pittsburgh and **\$74.7 million** in the City of Pittsburgh. Because of the hub-and-satellite nature of UPMC Hillman, more than **\$59.0 million** in indirect taxes were generated in Pennsylvania communities outside Allegheny County. The organization generated sales tax, corporate net income tax, and other business taxes paid by the companies receiving revenue from the cancer center and visitors and researchers (see Figure 3).

**Figure 3. Total Tax Impacts from Operations, Visitors, and Research (in millions)**



## TAX IMPACT OVERVIEW

### OPERATIONS

Tax revenue to the Commonwealth of Pennsylvania and to communities generated by UPMC Hillman stems mainly from employee payroll and property taxes and sales and hotel room taxes paid by visitors. In FY23, UPMC Hillman's operations generated **\$133.3 million** in the Commonwealth (see Figure 3).

These tax impacts are measured annually and include direct spending by UPMC Hillman, employees, and additional spending in the Commonwealth, Allegheny County, and the City of Pittsburgh from the re-spending of dollars in the economy.

### VISITORS

Cancer centers are generators of visitors to the communities in which they are located, and visitors are important contributors of state and local tax revenue. Tripp Umbach estimates that in FY23, visitors to UPMC Hillman generated **\$24.4 million** in tax revenue (see Figure 3). These tax impacts are measured annually and include direct spending by UPMC Hillman, employees, and additional spending in the Commonwealth from the re-spending of dollars in the economy.

### RESEARCH

UPMC Hillman's research enterprise, including cancer-related research grants received by the University of Pittsburgh, generates **\$22.4 million** in state and local taxes (see Figure 3). These tax impacts are measured annually and include direct spending by UPMC Hillman, employees, and additional spending in the Commonwealth, Allegheny County, and the City of Pittsburgh from the re-spending of dollars in the economy.



## RESEARCH COMMERCIALIZATION

As the only NCI-designated Comprehensive Cancer Center in western Pennsylvania, UPMC Hillman differentiates itself by utilizing innovative research to produce discoveries that improve cancer outcomes. Through its expansive network, UPMC Hillman delivers critical, comprehensive cancer care to patients, who benefit from increased opportunities to manage their cancer diagnosis through access to clinical trials and supportive care programs.

UPMC Hillman spent **\$234.3 million** in FY23 on research-related activities, with 73% of these funds from federal sources.<sup>5</sup> This funding supports the overarching research mission of UPMC Hillman as well as facilitates spin-off companies that attract activity into the Commonwealth. The impacts associated with new and existing company growth are in addition to UPMC Hillman's operational impact.

The Institute for Precision Medicine (IPM) is a prime example of this focused research and collaboration between UPMC and the University of Pittsburgh. The IPM was established to facilitate the movement of biomedical research into personalized clinical care, with UPMC Hillman leaders being instrumental in directing and advising the institute and emphasizing genomics, partnerships commercialization, education, and basic research.

Another example of collaboration is the UPMC Immune Transplant and Therapy Center (ITTC), which investigates the links between cancer and the immune system, develops novel treatments, and commercializes innovations to advance the field of immunology. UPMC has invested more than **\$500 million** in this initiative, focusing on cancer, aging, and transplantation. UPMC Hillman has a three-decade legacy in immunology and has played a vital role in advancing the ITTC.

Research and innovation also occur outside of the Pittsburgh region. Thanks to a generous gift from the Hamot Health Foundation, UPMC Hillman Cancer Center in Erie, 125 miles from the hub facility in Pittsburgh, will increase the clinical research staff and expand its sophisticated laboratory space to accommodate additional processing equipment. This will allow patients to participate in more complex, early-phase clinical trials without making regular trips to Pittsburgh.

Tripp Umbach estimates that in FY23, **\$1.2 billion** in additional economic impact was added to the Pennsylvania economy from the commercial spin-off of UPMC Hillman's research activities.<sup>6</sup> These companies support approximately **8,667 jobs** and **\$23.0 million** in state and local tax revenue. These estimates are in addition to the **\$3.98 billion** total impact of UPMC Hillman on the Commonwealth.

<sup>5</sup> This number includes cancer-related research awarded to the University of Pittsburgh.

<sup>6</sup> According to the NIH, \$7 in commercial activity is generated by every \$1 in research funding.

# EDUCATION AND OUTREACH

Besides research and innovation, UPMC Hillman also executes its mission by providing cancer education and outreach throughout its geographic footprint. UPMC Hillman supports the population's health through screenings, prevention efforts, and education. UPMC Hillman's services help patients and their families as they seek improved health outcomes, ultimately allowing them to live healthier and more productive lives.

The cancer outreach program at UPMC Hillman aims to increase awareness of various types of cancer, cancer risk factors, and the importance of early detection and maintaining a healthy lifestyle. The UPMC Hillman Prevention and Early Detection Center partners with free and low-cost clinics, including the Birmingham Free Clinic in Pittsburgh's South Side neighborhood, to make cancer screening more accessible to the population that UPMC Hillman serves. UPMC Hillman also sponsors cancer wellness events focused on prevention, screenings, early detection, and healthy habits in community settings such as hospitals, workplaces, and schools. UPMC Hillman oncology nurses and social workers also participate in community cancer lectures and presentations that provide evidence-based information to the communities they serve. Patient navigators are also available for support and guidance.

## ECONOMIC COST SAVINGS RELATED TO EDUCATION AND OUTREACH AT UPMC HILLMAN

Cancer was the second-leading cause of death, after heart disease, in the United States in 2023, with 609,820 deaths.<sup>7</sup> Estimated national expenditures for cancer care resulting from 1.9 million cases in the United States in 2023 totaled \$190.3 billion.<sup>8</sup> Costs will likely increase as the population ages and more people are diagnosed with cancer. Costs are also likely to increase as new, and often more expensive, treatments are adopted as standards of care.<sup>9</sup> With a larger cancer population, new expensive treatment plans will also emerge as typical standards of care, increasing the cost associated with the disease.

Education and prevention efforts to reduce poor health outcomes, such as improved access to cancer screenings, treatment, and programs, are essential access points for community residents across Pennsylvania. UPMC Hillman is essential in providing patients and families with options to understand better care and treatment plans to improve health outcomes.

The national cancer-attributable costs in the United States are projected to increase more than 30% from 2015 to 2030, corresponding to a total cost exceeding \$245 billion, according to *Cancer Epidemiology, Biomarkers & Prevention*.<sup>10</sup> In 2022, the national patient economic burden associated with cancer care reached \$22.9 billion, consisting of out-of-pocket costs of \$17.2 billion and patient time costs of \$5.7 billion.

<sup>7</sup> Centers for Disease Control and Prevention, 2022

<sup>8</sup> National Cancer Institute's Cancer Trends Progress Report

<sup>9</sup> National Cancer Institute Statistics

<sup>10</sup> [American Association for Cancer Research](#)



Pennsylvania residents face multiple obstacles to accessible healthcare, leading to higher healthcare costs. Transportation barriers, financial burdens (i.e., health insurance coverage), and distance to services are even more significant for patients living in rural areas. Extensive travel times, access to medical and oncology providers, and limited opportunity to participate in clinical trials affect the quality of care and health outcomes. Because of these barriers, many of Pennsylvania's rural residents do not seek preventative screenings. If access to high-quality preventive screenings and treatment is not available, patients often go undiagnosed or receive a late-stage diagnosis, which leads to higher mortality rates and higher healthcare costs for everyone.

Travel can be an additional challenge for cancer patients as they navigate frequent appointments to receive care, as well as treatment side effects. UPMC Hillman's extensive network allows patients to receive care close to home, alleviating the physical, mental, and financial burden of obtaining quality care.

UPMC Hillman's highly integrated cancer care delivery system has improved health outcomes, lowered healthcare costs, and reduced the cost for community residents diagnosed with advanced stages of the disease. Outcomes include higher productivity, employment, and greater engagement in the state's economic performance. Each person who maintains their physical health cancer-free adds significantly to the state and regional economies, as each healthy person has higher productivity and less absenteeism, resulting in a higher economic and societal impact.

Tripp Umbach's independent analysis of patient counts provided by UPMC Hillman indicates that UPMC Hillman's prevention and early detection services in FY23 resulted in **\$1.4 billion** in healthcare cost avoidance statewide. This saves Pennsylvania patients and their families **\$170 million** annually in out-of-pocket cost avoidance, travel expenses, and loss of wages during treatment. The cost avoidance is in addition to the **\$3.98 billion** in economic impact from UPMC Hillman's overall impact.

Reducing cancer costs through preventative programs and early detection represents another way UPMC Hillman fuels economic growth throughout the Commonwealth. Tripp Umbach's analysis shows that 1,242 deaths were avoided in FY23 in the Commonwealth because of UPMC Hillman's prevention activities through its statewide cancer network. Based on an estimated eight years of additional productive life for each cancer-free cancer patient, 9,968 productive life years will be added to the statewide economy. With each year of life estimated at \$132,520 in FY23, the total value of these additional productive years will equal more than **\$1.3 billion**.

# APPENDIX A: STUDY METHODOLOGY

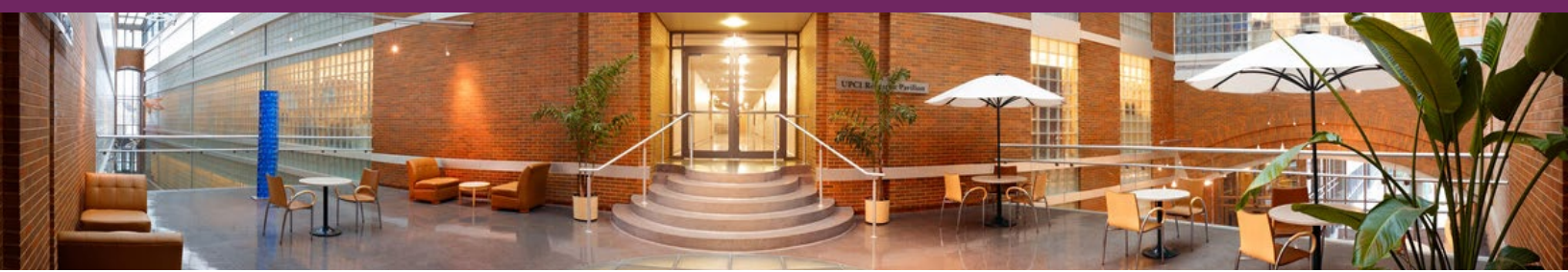
## ABOUT IMPLAN

Tripp Umbach estimated the economic impact of UPMC Hillman for Fiscal Year (FY) 2023 in Allegheny County and the Commonwealth of Pennsylvania using IMPLAN (IMpact Analysis for PLANing), an econometric modeling system developed by applied economists at the University of Minnesota and the U.S. Forest Service. The IMPLAN modeling system has been used since 1979 by more than 500 private consulting firms, university research centers, and government agencies. The IMPLAN modeling system combines the U.S. Bureau of Economic Analysis' input-output benchmarks with other data to construct quantitative models of trade flow relationships between businesses and final consumers. From this data, one can examine the effects of a change in one or several economic activities to predict its effect on a specific state, regional, or local economy (impact analysis). The IMPLAN input-output accounts capture all monetary market transactions for consumption in each period. The IMPLAN input-output accounts are based on industry survey data collected periodically by the U.S. Bureau of Economic Analysis and follow a balanced account format recommended by the United Nations.

Each industry that produces goods or services generates demand for other goods and services. This demand is multiplied through a particular economy until it dissipates through "leakage" to economies outside the specified area. IMPLAN's Regional Economic Accounts and the Social Accounting Matrices were used to construct state-level multipliers, which describe the response of the state economy to a change in demand or production because of the activities and expenditures of UPMC Hillman. IMPLAN models discern and calculate leakage from local, regional, and state economic areas based on workforce configuration, the inputs required by specific types of businesses, and the availability of both inputs in the economic area. Consequently, economic impacts that accrue to other regions or states because of a change in demand are not counted as impacts within the economic area.

The model accounts for substitution and displacement effects by deflating industry-specific multipliers to levels well below those recommended by the U.S. Bureau of Economic Analysis. In addition, multipliers are applied only to personal disposable income to obtain a more realistic estimate of the multiplier effects of increased demand. Importantly, IMPLAN's Regional Economic Accounts exclude imports to an economic area, so the calculation of economic impacts identifies only those specific to the economic impact area, in this case, the Commonwealth of Pennsylvania. IMPLAN calculates this distinction by applying Regional Purchase Coefficients (RPC) to predict regional purchases based on an economic area's characteristics. The RPC represents the proportion of goods and services purchased regionally under normal circumstances based on the area's economic characteristics described in terms of actual trade flows.





## **APPENDIX B: ABOUT UPMC HILLMAN CANCER CENTER**

UPMC Hillman is nationally and internationally recognized for its leadership in cancer prevention, detection, diagnosis, and treatment. It is designated by the National Cancer Institute (NCI) as a Comprehensive Cancer Center demonstrating excellence in cancer research, patient care, education, and community outreach. UPMC Hillman is the preeminent institution in western Pennsylvania for delivering cancer care; performing basic, translational, and clinical research; and educating the next generation of cancer researchers and physicians.

Along with advanced treatment options and access to more than 400 clinical trials, UPMC Hillman's coordinated care approach provides streamlined support across a multidisciplinary team of providers. UPMC Hillman has invested significantly in innovative technology across its network. UPMC Hillman consistently evaluates and upgrades its equipment to improve the detection and treatment of the most challenging cancers. Further, UPMC Hillman's advanced information technology infrastructure helps to manage the clinical trials process, identify treatment protocols, inform advanced radiotherapy therapies, and provide web-based patient education and care via telemedicine. UPMC Hillman Cancer Center researchers and clinicians are at the forefront of discovery and innovation.

Being an NCI-designated Comprehensive Cancer Center puts UPMC Hillman in the company of only 56 other cancer centers in the United States, supporting the recruitment and retention of world-class clinicians and scientists who are productive in their areas of expertise. Over the last five years, UPMC Hillman's faculty members have published more than 5,000 peer-reviewed articles. Through seven Cancer Center Support Grant (CCSG)-supported research programs and 10 shared research resources, UPMC Hillman Cancer Center scientists have opportunities for interactions and collaborations between and among investigators interested in basic, translational, and clinical cancer research. There are opportunities to develop interdisciplinary initiatives in a dynamic environment for research collaboration in cancer etiology, prevention, diagnosis, and treatment. The extensive research efforts all work toward reducing the burden of cancer and improving cancer treatment, prevention, and detection.

UPMC Hillman Cancer Center is supported by its world-renowned parent institutions of UPMC, a \$25 billion healthcare provider and insurer, and the University of Pittsburgh (Pitt), which currently ranks as the sixth highest university in National Institute of Health (NIH) funding. While most clinical activities run through UPMC and most research activities are supported by Pitt, these institutions partner closely to make life-changing medicine a reality.

## APPENDIX C: ABOUT TRIPP UMBACH

Tripp Umbach is the national leader in providing economic impact analysis to leading healthcare, education, academic medicine, and economic development organizations. For more than 30 years, the firm has completed hundreds of economic impact studies for clients such as the Mayo Clinic, the Cleveland Clinic, the Ohio State University James Cancer Center, the UNC Lineberger Comprehensive Cancer Center, Fox Chase Cancer Center, the Fred & Pamela Buffett Cancer at the University of Nebraska Medical Center, and the LSU Feist-Weiller Cancer Center.

Tripp Umbach has a long history working with UPMC, including completing the initial consulting assignment leading to the formation of UPMC in the 1990s. Tripp Umbach has completed state-level impact studies in Pennsylvania and nationally for all U.S. medical schools and teaching hospital affiliates for the Association of American Medical Colleges.



**UPMC | HILLMAN  
CANCER CENTER**

[hillman.upmc.com](http://hillman.upmc.com)

**PREPARED BY**

**Tripp  
Umbach**

Turning Ideas Into Action