



# ESSENTIAL:

## THE IMPACT OF THE HEALTHCARE AND LIFE SCIENCES SECTOR IN INDIANA'S SOUTHWEST REGION

April 2022



Produced for: BioCrossroads  
Produced by: TEconomy Partners, LLC.





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# Prologue

In Indiana, we see the benefits of having a strong healthcare and life sciences sector every day. It accounts for one in every ten jobs in the state, provides an annual economic impact of \$150 billion, and is present in the substantial assets spanning the corporate, university and philanthropic sectors. This sector did not grow up overnight and is not limited to the central part of the state where you will find national and global leaders in pharmaceuticals (Eli Lilly and Co), diagnostics (Roche Diagnostics), and agbioscience (Elanco and Corteva). Travel to the northern part of the state and you will find Warsaw, the Orthopedics Capital of the World® - a cluster representing 45% of the global orthopedic market for total joint replacements that traces its beginnings back to Revra DePuy in 1895, J. O. Zimmer in 1927 and Dane Miller's Biomet in 1977. To the south, entrepreneurial companies have turned into worldwide leaders in life sciences including Hill-Rom in Batesville, IN growing in 1929 when Bill Hillenbrand had the idea to bring the home into the hospital; the Cook Group in Bloomington, IN founded by Bill Cook in 1963 initially focused on tools for minimally-invasive medical devices; and Mead Johnson which has operated a manufacturing plant for Enfamil infant nutrition formula in Evansville, IN for more than 100 years. Throughout the state, our hospital systems ensure access to high-quality healthcare while also contributing to overall economic vitality.

Healthcare and life sciences start with research, but do not end there. Hoosiers working in healthcare and life sciences may be found providing care in hospitals and your doctor's office; working in manufacturing facilities making orthopedic implants, stents, or producing life-saving medicines, such as insulin and cancer treatments; providing general business support as office workers in accounting, administration, or marketing; at construction sites building or refurbishing facilities; or in academic or corporate laboratories. From investments in facilities, equipment, research, talent, and connections through BioCrossroads, Indiana's healthcare and life sciences industry has a substantial collective impact on not just the economic vitality of Indiana, but also the health of its citizens.

In this series of reports, TEconomy Partners, LLC. looks at different parts of our state and details how these investments drive our economy and how they help provide benefits to Indiana's other sectors including manufacturing, technology, and retail. We look at the State of Indiana as well as a more focused look at key economic regions, including Northeast Indiana, South Bend-Elkhart, the Wabash Heartland, Metro Indianapolis, the Indiana Uplands, and Southwest Indiana.

This is an important and timely report. And certainly, it is appropriate here to thank those whose efforts have made it possible: Lilly Endowment Inc. and the Richard M. Fairbanks Foundation, through generous grants to the CICIP Foundation on behalf of BioCrossroads, provided the essential funding; the many members of the healthcare and life sciences community, including manufacturing, transportation, and logistics; leaders at our major research universities and government agencies; our consultants at TEconomy Partners, who know both Indiana and the innovation sector well and drew on their substantial expertise to provide a helpful and comprehensive study; as well as our professional teams at BioCrossroads and CICIP.

It is said that "What Indiana Makes, Makes Indiana." Hoosiers working in healthcare and life sciences are discovering, making, and delivering treatments and cures to improve the quality of life for those of us in Indiana - and people all over the world - all while driving Indiana's economy. Please join us on this journey to learn more about how the life sciences and healthcare sector make our communities.

Sincerely,



Patricia A. Martin  
President and CEO, BioCrossroads  
April 2022



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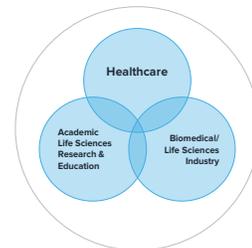
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# Introduction

This regional profile presents quantitative analysis of the current position, recent performance, economic impacts, and overall importance of the healthcare and life sciences sector in Southwest Indiana as an economic driver. The assessment spans the industry’s three core elements or pillars of healthcare, industrial life sciences, and academic life sciences R&D (Figure 1).

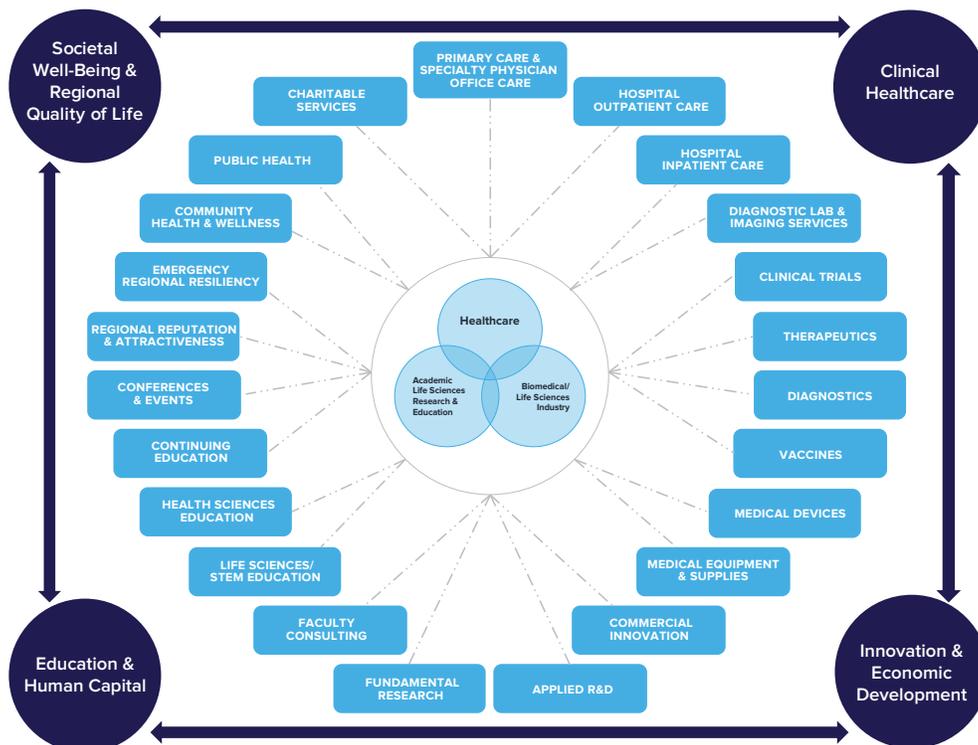
► **Figure 1: Three Core Elements of the Healthcare and Life Sciences Sector**



In addition to the economic impacts presented in this regional profile, it is critical to further consider the broader and truly extensive functional impacts—those that cannot easily or readily be measured in dollars and cents or jobs—generated by the healthcare and life sciences sector presented in Figure 2. In pursuing their missions to advance health and well-being, healthcare and life sciences organizations and the sector writ large, undertake a wide range of activities and thus generate a broad variety of functional impacts. Ultimately, they can be seen to converge around four primary functional benefit domains:

- **Provision of Clinical Healthcare** – Working to sustain the physical health of populations served.
- **Innovation and Economic Development** – Producing products and services needed and valued by society which in turn generate employment, economic output, exports, and public sector revenues.
- **Education and Human Capital Development** – Advancing basic and applied knowledge and building the know-how and skills necessary within the health and life sciences workforce.
- **Societal Well-being and Quality-of-life** – Securing public health and building equitable, diverse, and resilient communities with robust livability, quality-of-place, and quality-of-life.

► **Figure 2: The Functional Impacts of the Healthcare and Life Sciences Sector**



Source: TEconomy Partners, LLC

# Regional Healthcare and Life Sciences Industry

## SIZE AND STRUCTURE OF THE INDUSTRY

Healthcare and life sciences firms combine to employ more than 20,000 in the 4-County Southwest Indiana region. The industrial life sciences segment accounts for nearly 1,700 of these jobs, with nearly half of the employment within the pharmaceutical manufacturing subsector. The region is home to major employers such as Mead Johnson Nutrition and AstraZeneca. The region's larger healthcare segment is made up of large hospitals and health systems including Deaconess Health System and Ascension St. Vincent Evansville.

Healthcare and life sciences act as major drivers of the regional economy and high-quality jobs. The industry has seen rapid 6.1% job growth since 2015, helping to bolster an overall private sector employment decline during this period of 1%. Average wages in the industry reach nearly \$66,000 annually, well above those for their private sector counterparts.

► **Table 1:** Southwest Region Healthcare and Life Sciences Industry Employment by Subsector, 2020

Healthcare and Life Sciences Subsectors	Southwest Regional Employment
<b>Life Sciences</b>	<b>1,671</b>
Biomedical Manufacturing	1,420
<i>Pharmaceutical Manufacturing</i>	753
<i>Medical Instruments, Devices, and Supplies Manufacturing</i>	89
<i>Other Key Supporting Industries</i>	578
Biomedical Distribution	74
Biomedical Research & Development (Industry, NEC)	177
<b>Healthcare</b>	<b>18,712</b>
Hospitals	9,494
Physician and Other Health Practitioner Offices	6,742
Medical Testing	260
Ambulatory Healthcare Services	1,347
Outpatient Care Centers	870
<b>Total</b>	<b>20,383</b>

Source: TEconomy analysis of 2020 U.S. Bureau of Labor Statistics QCEW Data enhanced by Emsi.

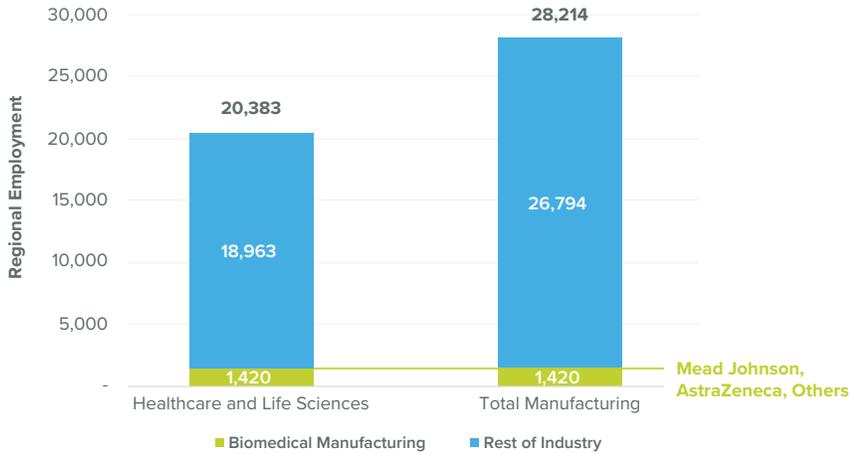
► **Table 2:** Southwest Region Healthcare and Life Sciences Industry, 2020

LS/HC Major Sector	Establishments, 2020	Employment, 2020	Location Quotient, 2020	Employment Change, 2015-2020	Average Wages, 2020
Healthcare	542	18,712	1.26	7.9%	\$64,274
Life Sciences	44	1,671	1.00	-10.1%	\$85,064
HC/LS Total	586	20,383	1.23	6.1%	\$65,978
Total Regional Employment	7,336	185,805	1.00	-1.0%	\$46,535

Source: TEconomy analysis of 2020 U.S. Bureau of Labor Statistics QCEW Data enhanced by Emsi.

In a production-intensive region and state, the 1,420 industrial life sciences manufacturing jobs in the Southwest Indiana region account for 5% of all regional manufacturing jobs (Figure 3).

► **Figure 3: Southwest Region Life Sciences Manufacturing Employment Compared to Total Manufacturing, 2020**



Source: TEconomy analysis of 2020 U.S. Bureau of Labor Statistics QCEW Data enhanced by Emsi.

## Mead Johnson—100 years of Production History, Growth, and Investments in Evansville

Dating back to World War I, when supplies of potato starch were cut off from Germany, Mead Johnson Nutrition Company has operated a major production facility in Evansville. Mead Johnson, a global leader in pediatric nutrition products, develops, manufactures, markets, and distributes more than 70 products globally. Today, more than 100 years after Edward Mead Johnson moved the company to Indiana from New Jersey, the firm remains a major employer in Evansville, with the manufacturing plant, a number of key business and medical/scientific functions, as well as the first research facility established under Mead Johnson's Pediatric Nutrition Institute.

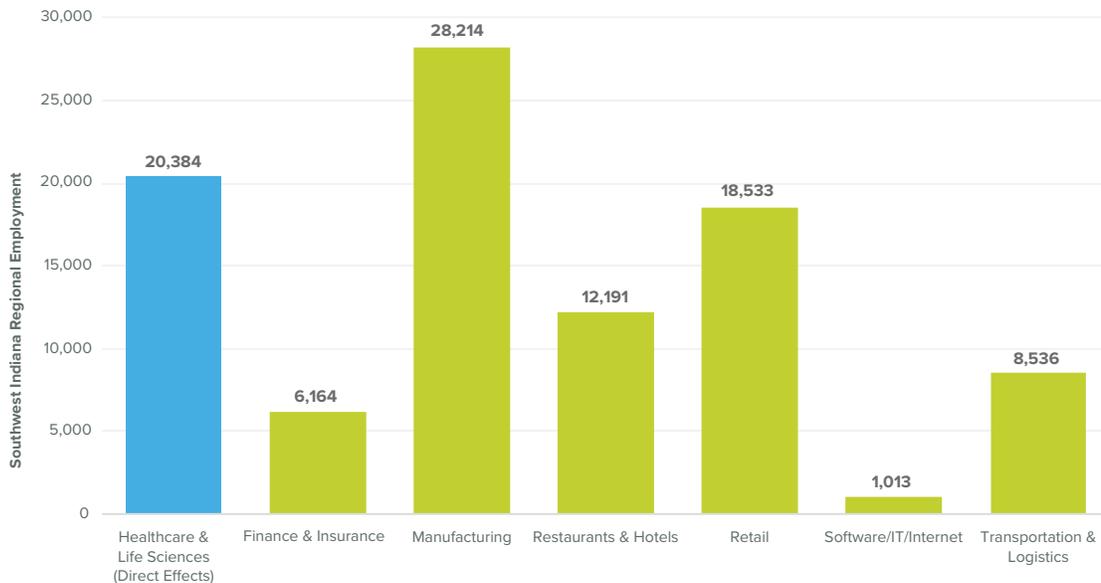


## COMPARATIVE IMPORTANCE OF THE INDUSTRY

Healthcare and life sciences represent a leading sector in the Southwest Indiana region (Figure 4). When compared against other major industries, the sector is among the largest in terms of total regional jobs second only to manufacturing.

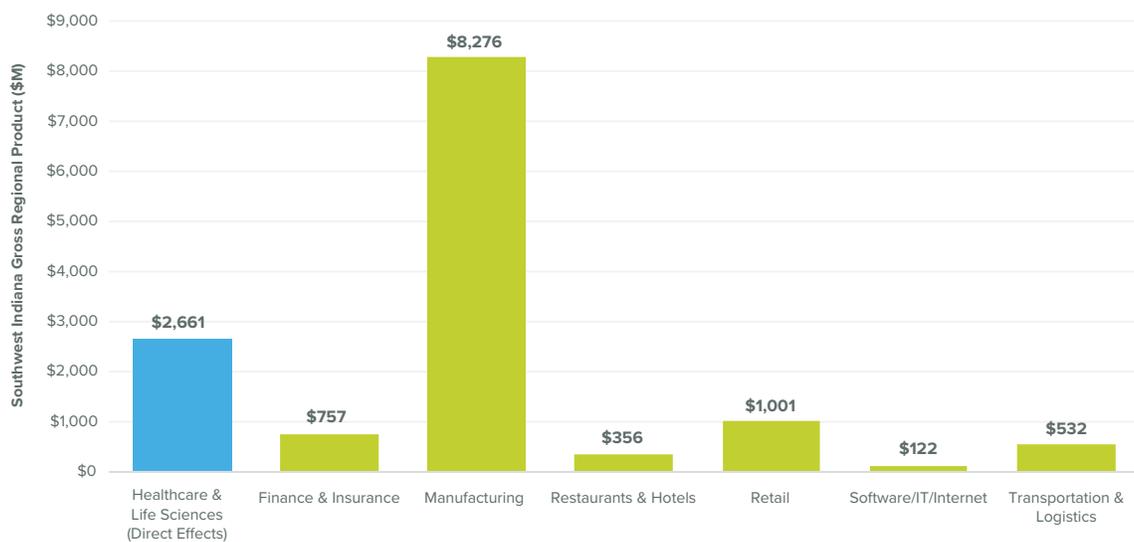
The strong value-adding nature of healthcare and life sciences, and its value to the region as an outsized economic driver is evident in the sector's contribution to regional GDP (Figure 5). In the Southwest Indiana region, the industry contributes 12.9% to regional GDP.

► **Figure 4: Southwest Region Healthcare and Life Sciences Employment Compared to Other Industries, 2020**



Source: TEconomy analysis of Southwest Regional IMPLAN impact model and Emsi data.

► **Figure 5: Southwest Region Healthcare and Life Sciences Gross Regional Product Compared to Other Industries, 2020**



Source: TEconomy analysis of Southwest Regional IMPLAN impact model and Emsi data.



# Regional Healthcare and Life Sciences Ecosystem

Southwest Indiana contributes to the state’s healthcare and life sciences innovation ecosystem. Highlights from the regional ecosystem assessment include:

- Twelve percent of Southwest Indiana postsecondary graduates were in a STEM-related field in 2020, contributing not only to healthcare and life sciences industry talent pipelines but also to broader advanced industry workforce and talent needs.
- In 2020, Southwest Indiana colleges and universities had \$243,000 in life sciences-related R&D expenditures.
- High-growth potential healthcare and life sciences companies are being funded in the region with three companies receiving VC investments of more than \$16 million in the latest 3-year period.
- The region acts as a key site for clinical trials with 461 active trials utilizing Southwest Indiana regional site locations since 2019.

## **CASE STUDY:**

### **Building the Community, Building Talent in the Evansville Region**

Evansville and the Southwest Indiana region are proactively working to advance talent development and strong career opportunities for its community—areas critical to developing a high-functioning advanced industry ecosystem, including for the healthcare and life sciences sector. The region’s Talent 2025 initiative is targeting a set of specific goals in its strategic plan—specifically, bringing 5,000 high-paying new jobs to the region; increasing the region’s population by 10,000, developing a globally-competitive and highly trained workforce, reducing poverty, and improving community health. In December 2021, the Evansville Region was awarded \$50 million in a state READI grant to enable components of its Talent 2025 plan.

# Regional Healthcare and Life Sciences Impacts

To estimate the economic importance of the Southwest Indiana region’s healthcare and life sciences sector an IMPLAN economic impact model representing the 4-county region including Evansville was developed and used. The sector’s 20,383 healthcare and life science employees (direct effect) and the \$243,000 in related academic research are used to drive the various sectors of the model to estimate additional direct, indirect, and induced effects and total impacts. The economic impact model (based upon input-output analysis) estimates the flow of goods and services between sectors and between inputs and final demand (indirect effects). Additionally, the spending of wages within the regional economy by the employees of these sectors are also captured (induced effects). This spending and re-spending of dollars within the economy is described as the “ripple effect” and when combined across all three types of effects provides an estimate of the total impacts. Impact effects are estimated for employment, labor income, value added, output, and tax revenues (federal and state/local estimated separately, see text box for the definitions of each of these).

The results of the full economic impact analysis, shown in Table 3, capture the 20,384 direct healthcare and life sciences jobs (including estimated academic research jobs) within the Southwest Indiana region, and how the spending of the sector’s institutions and actors ripple through the broader regional economy. The nearly \$2.7 billion in value added to the regional economy, as discussed with Figure 5, appears as the direct effect in Table 3. Combined, the components and subsectors of the healthcare and life sciences sector are estimated to generate direct output of more than \$5.1 billion in 2020. Importantly, considering the number of public and non-profit institutions captured within, the sector generates more than \$82 million in state and local tax revenues annually (including taxes of all types).

## Economic Impact Measures

- **Employment** or the total number of jobs analyzed and estimated; includes the direct jobs captured as part of the healthcare and life sciences sector and indirect/induced jobs generated and supported through purchases and expenditures.
- **Labor Income**, also known as total compensation, is the total amount of income—including salaries, wages, and benefits (individual and company payments)—received by employees, proprietors, and other supplier and supported workers in the economy.
- **Value Added** captures the difference between an industry’s total output and the cost of its intermediate inputs; sometimes referred to as the industry or sector’s “contribution to GDP.”
- **Output**, also known as production, sales, or business volume, is the total value of goods and services produced by the healthcare and life sciences sector in the economy along with the value of goods and services produced throughout the regional economy due to the ripple effects of sector spending. For public/non-profit entities, such as universities and hospitals, expenditures, rather than revenue, are often the truest measure of this economic activity. The total output impacts are often referred to as the total economic impact.
- **State/Local and Federal Government Tax Revenues** includes the estimated revenues to federal and state/local governments from all sources as a result of the direct, indirect, and induced impacts estimated.

► **Table 3:** Economic Impact of the Southwest Indiana Region Healthcare and Life Sciences Industry, 2020

Impact Type	Employment	Labor Income (\$M)	Value Added (\$M)	Output (\$M)	State & Local Tax Revenues (\$M)	Federal Tax Revenues (\$M)
Direct Effect	20,384	\$1,837.71	\$2,661.42	\$5,137.40	\$82.33	\$333.22
Indirect Effect	8,032	\$423.54	\$638.67	\$1,261.11	\$41.78	\$83.14
Induced Effect	7,964	\$294.58	\$619.62	\$1,106.61	\$68.74	\$68.03
Total Impact	36,381	\$2,555.83	\$3,919.72	\$7,505.12	\$192.85	\$484.38
Multiplier	1.78	1.39	1.47	1.46		

Source: TEconomy analysis of Southwest Indiana regional IMPLAN impact model.



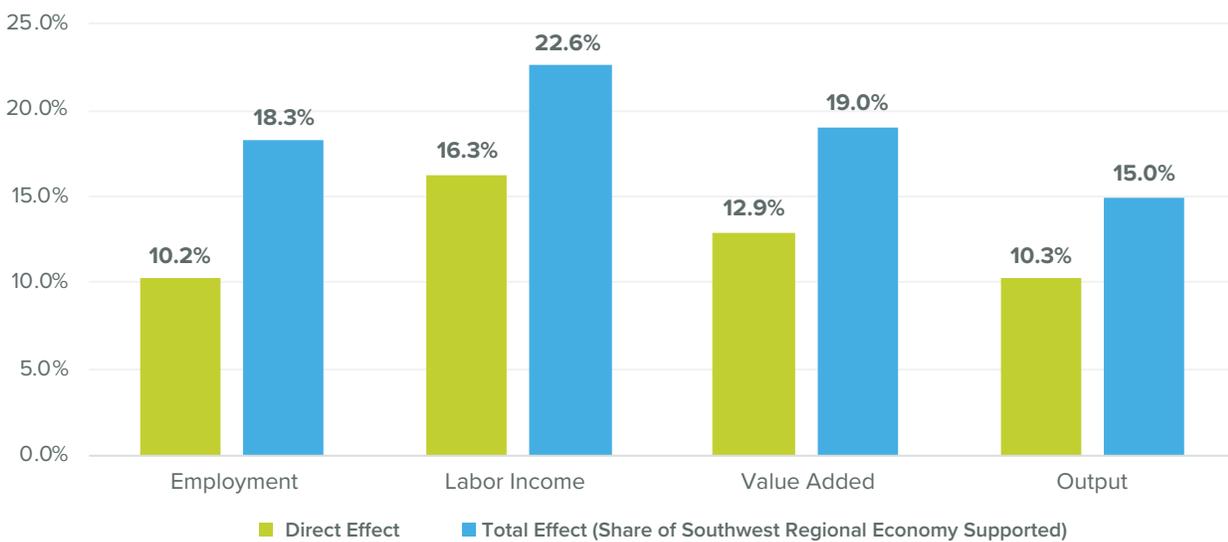
### AstraZeneca—a Global Biopharmaceutical Company with Major Manufacturing Presence in Mount Vernon

AstraZeneca employs nearly 700 in its production site in Mount Vernon, making it one of Posey County’s largest employers and one of the firm’s largest manufacturing facilities in North America. The company, a British-Swedish multinational pharmaceutical and biotechnology firm, has been producing biopharmaceutical products in Mount Vernon since 2015. Its products manufactured here, primarily diabetes drugs, but also cardiovascular, HIV, hepatitis, and cancer therapeutics are shipped across the U.S. and globally. To continue to support and advance talent development, AstraZeneca has established a local scholarship program in partnership with University of Southern Indiana focused in science and technology for students seeking careers in the pharmaceutical industry. The company also has an active internship program for talent development and recruitment.

From a total impact perspective, **the Southwest Indiana region’s healthcare and life sciences sector generates and supports more than \$7.5 billion—every \$1 of direct output generates an additional \$0.46 within the regional economy.** This economic impact also generates and supports additional employment in the region. A total of **more than 36,000 Southwest Indiana region jobs are supported by the sector** with the non-direct additional employment almost equally split between indirect (supplier) and induced jobs. Every job within the Southwest Indiana region’s healthcare and life sciences sector supports 0.78 additional jobs in the regional economy.

While these numbers seem impressive at face value, the importance of the Southwest region’s healthcare and life sciences sector to the broader regional economy is more fully appreciated through the metrics in Figure 6. As shown in the figure, the sector supports at least 15% of the regional economy across the four major impact metrics.

► **Figure 6: Southwest Region Healthcare and Life Sciences Impacts Share of Regional Economy, 2020**



Source: TEconomy analysis of Southwest Indiana regional IMPLAN impact model.



## Major Capital Projects: Investments and Impacts

Maintaining and operating a world class health and life sciences ecosystem requires building, maintaining, expanding, and upgrading a large base of physical infrastructure and capital equipment. The 2017 purchase of Mead Johnson by Reckitt Benckiser Group generated investments and facility enhancements at the Evansville location these investments, occurred prior to 2019. Recent investments by Deaconess Health Systems include new medical office buildings which opened in 2020, a new 150,000 square foot GI Specialty Clinic on the Gateway Campus, expected to be completed by spring 2022 and the renovation of the Midtown Hospital emergency department also expected to be completed in 2022. These investments supported more than 400 construction jobs in 2020.

### Major Southwest Indiana Healthcare and Life Science-Related Capital Projects

Organization/Project	\$ Investment	Completion Year
Deaconess Health Systems, New medical office buildings, new GI specialty clinic at Gateway Campus, renovation of Midtown Hospital emergency department	\$60+ million	2020, 2022

# Conclusion

This regional profile readily demonstrates that healthcare and life sciences represent a significant economic engine for Indiana's Southwest region; moreover, they also play a central role in providing economic and social resilience for the region on an ongoing basis and during public health emergencies. The Southwest Indiana region benefits greatly from the long-term investments that have been made by key private sector corporations such as Mead Johnson Nutrition (Reckitt Benckiser Group), AstraZeneca, and others and organizations such as Deaconess Health System and St. Mary's Health creating a complete healthcare and life sciences ecosystem – an ecosystem that spans a complete range of activity from basic and translational research, through each step in the value added development and production of products, technologies, and services onwards into distribution and their use in the marketplace.

The operations of this value-chain in the Southwest Indiana region are supported by community talent development programs and higher education programs from the University of Evansville, the University of Southern Indiana, and Ivy Tech - Evansville that supply the well-educated and skilled talent needed to fill demands across the sector. Similarly, the region is attracting the capital resources needed to develop, scale, and grow healthcare and life sciences enterprises—though like most regions of the country continued growth in resources are necessary.

The sector is expected to continue to grow, however, this growth could be dependent on how the regional ecosystem responds to forces of change and the opportunities presented for growth in healthcare and nutrition products and services rooted in new technologies in genomics, gene editing, regenerative medicine, synthetic biology, advanced health data analytics, personalized medicine, and other emerging fields of opportunity. Ongoing investment will be needed, and attention paid to sustaining and optimizing the regional ecosystem conditions to continue to allow the sector to thrive.

Information presented within the report leads to the following key conclusions:

- Healthcare and life sciences represent an important advanced industry for Southwest Indiana's regional economy.
- The sector directly employs nearly 20,400 in the region and supports a further 16,000 regional jobs through its indirect and induced expenditure impacts.
- The direct jobs supported demonstrate high average wages of nearly \$66,000 (about \$20,000 higher than the Southwest Indiana region's average job), and total compensation levels (wages and benefits) per industry job of more than \$90,100.
- These impacts are generated by a sector that is particularly well-rounded and diverse in the Southwest Indiana region including industry presence in child nutrition, biopharmaceuticals, biotech, and clinical healthcare.
- The sector is providing wide ranging functional impacts that collectively provide access to high-quality clinical healthcare, an innovation pipeline leading to economic development, opportunities for individual advancement through STEM education and high-quality jobs and sustaining a high regional quality of life.

**It is clear that past and future investments in the infrastructure and talent that advance Indiana's and the Southwest Indiana region's life sciences and healthcare capacity represent a fundamental good—enhancing the quality of life for Hoosiers, boosting the Southwest regional economy, and providing a proactive means of response in the face of public health emergencies.**

# THE IMPACT OF THE HEALTHCARE AND LIFE SCIENCES SECTOR IN INDIANA'S SOUTHWEST REGION

**\$7.5 B**

total economic impact generated by the Southwest region's healthcare and life sciences sector

## THE HEALTHCARE AND LIFE SCIENCES SECTOR IN INDIANA'S SOUTHWEST REGION IS:



### A powerful economic engine for the region

Diverse in its employment opportunities, creating demand for work across R&D, manufacturing, warehousing, distribution, and all business functions that support the value chain.



### Growing

The combined healthcare and life sciences sector grew by 6.1% from 2015 to 2020.



### Well-rounded and connected

Because of its highly collaborative nature, it assured resiliency during the pandemic.

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The functional impacts of the healthcare and life sciences sector on the Southwest Indiana region are those that are a positive impact generated for an economy, society or for individuals through the mission-focused activities of an organization, institution, industry, or specific project including:

- Working to sustain the physical health of populations served.
- Producing products and services needed and valued by society which, in turn, generate employment, economic output, exports, and public sector revenues.
- Advancing basic and applied knowledge and building the know-how and skills necessary within the healthcare and life sciences workforce.
- Securing public health and building equitable, diverse, and resilient communities with robust livability, quality-of-place and quality-of-life.

# HEALTHCARE AND LIFE SCIENCES REGION

4 Counties

Gibson, Posey, Vanderburgh, Warrick



## EFFECT

## Employment

## Output

## Gross Regional Product

EFFECT	Employment	Output	Gross Regional Product
<b>DIRECT</b>	20,384	\$5.1B	\$2.7B
<b>INDIRECT &amp; INDUCED</b>	15,996	\$2.4B	\$1.2B
<b>TOTAL SUPPORTED IMPACT SHARE OF REGIONAL ECONOMY</b>	18.3%	15.0%	19.0%

Compared to the next largest direct GRP sectors:  
**\$8.3B** Manufacturing  
**\$1.0B** Retail



## \$1 = +46¢

Every \$1 of all goods and services produced by the healthcare and life sciences sector, generates an additional \$0.46 within the Southwest Indiana regional economy.



## \$192.9M

Amount of state and local tax revenue generated and supported by the healthcare and life sciences sector in the Southwest region.

