Progressive Manufacturing - Medical Devices & Biotechnology

PART ONE: Understanding Indiana's Medical & Biotech Industry

Medicine, biomedicine, and biotechnology conjure images of scientists and doctors, white coats and test tubes but the industry is in fact more diverse than these images would suggest. Manufacturing is a large part of the industry in Indiana along with scientific research and clinical practice. This article will focus on the manufacturing part of this sector. Manufacturers, such as Eli Lilly & Company, conduct the majority of the research and development (R&D) activity within the industry. Thus, while R&D statistics cannot be isolated, looking at manufacturing data best captures this portion of the industry. Using manufacturing data will also capture distribution activities related to the medical and biotech industry. This article will not cover the clinical practice of medicine or related services, because they do not drive, but result from, economic development.

Medical and biotech manufacturing can be divided into three parts: (1) Pharmaceuticals; (2) Surgical, medical, and dental supplies; and (3) Vision health (ophthalmic) goods. Pharmaceuticals can range from zinc ointments to anti-depressant medication while medical equipment can include expensive, high-tech instruments and tongue depressors. Similarly, each area includes both high-tech, high-skill jobs and low- or semi-skilled jobs. Other industries, including plastics, electronics, metal fabrication, and rubber fabrication are also part of the medical and biotechnology sector but are not categorized as such since use of their products is not limited to this sector. The data used in this article are limited to the businesses that earn the majority of their income from medical and biotech manufacturing.

Biomedicine ***is the application of the natural science to clinical medicine.***
Biotechnology ***is the use of living organisms or other biological systems in the manufacture of drugs or for environmental management.***

Who is the Indiana Biomedical Industry? Here is a small sample:

Pharmaceutical Companies

- Alexon-Trend (Seradyn)
- Bayer Corporation
- Cook Pharmaceuticals
- Eli Lilly & Co.
- Mead Johnson
- Pfizer
- Roche Diagnostics
- Schwartz Pharmaceuticals

Medical Device Manufacturers

- BAS Analytic
- Bayer Diagnostics
- Biomet
- Biovona
- Boston Scientific
- Cook Group
- DePuy
- Fort Wayne Metals Research
- Guidant Corporation
- Othy
- Sofamor-Danek
- Ultrexx
- Zimmer

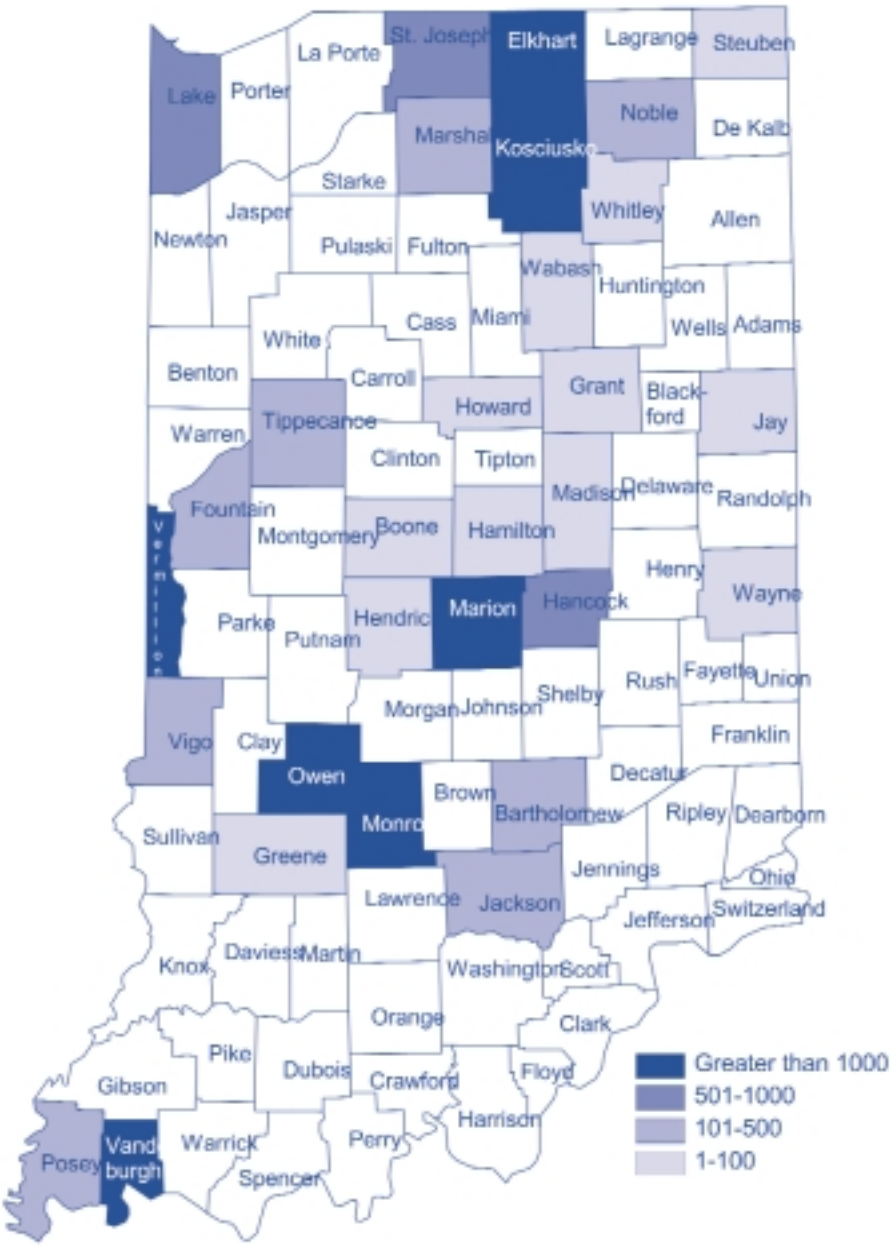
Source: *The Indiana Industrial Directory*, Harris InfoSource.

The Indiana medical and biotech industry is geographically concentrated. Only 33 of the state's 92 counties have some type of biomedical industry and only 16 of these counties have employment greater than 100. Most employment falls into three geographic clusters. The northern cluster forms around St. Joseph, Elkhart, and Kosciusko Counties. The largest cluster is the central triangle formed by Marion and Hancock Counties in the North extending to Monroe and Owen Counties in the south and finally to Vermillion County in the west. The southern cluster is mainly Vanderburgh County.

By Ted Jockel and Leslie Richardson, Indiana Department of Commerce

Next Month— PART TWO: Indiana's Biomedical Industry Today

Because of confidentiality restrictions, exact employment figures cannot be reported. At present, counties with more than 1,000 biomedical industry employees include Elkhart, Kosciusko, Marion, Vanderburgh, Vermillion, Monroe, and Owen Counties. Counties with more than 500 biomedical industry employees are St. Joseph, Lake, and Hancock Counties. Counties with more than 100 biomedical industry employees include Marshall, Noble, Tippecanoe, Vigo, Jackson, Fountain, Bartholomew, and Posey Counties. The remaining counties with biomedical industry employees are Steuben, Whitley, Wabash, Howard, Jay, Boone, Hamilton, Grant, Madison, Wayne, Hendricks, and Greene Counties.

Figure 1: 2nd Quarter 1999 Number of Employees in Biomedical Industry

Source: Bureau of Labor Statistics