

# **The Medical Products Industry Cluster in Tampa Bay and Florida**

An Analysis Performed by

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## *Preface*

*This study was commissioned by the Florida Medical Manufacturers Consortium and performed by the Center for Economic Development Research, College of Business Administration, University of South Florida. The purpose of the study is to describe the extent of clustering and quantify the economic impacts of the Medical Products Industry Group in Tampa Bay and Florida. The Center for Economic Development Research provides information and conducts research on issues related to economic growth and development in the Nation, in the state of Florida, and particularly in the central Florida region. The Center serves the faculty, staff, and students of the College of Business Administration, the University, and individuals and organizations in the Tampa Bay region and statewide. Activities of the Center for Economic Development Research are designed to further the objectives of the University and specifically the objectives of the College of Business Administration.*

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## EXECUTIVE SUMMARY

The purpose of this research is to describe the extent of clustering of the medical manufacturing and associated industries in Tampa Bay and Florida. The Medical Products Industry Group consists of three segments: the Pharmaceutical Segment, the Biotech Segment, and the Medical Devices Segment. We determine the industries that combine with the group to form the Medical Products Industry Cluster. We determine the direct economic effects, or baseline contributions, of the industries in the Medical Products Industry Group in Tampa Bay and Florida. We also review the data to ascertain the quality and number of direct jobs in the Medical Products Industry Group. Finally, we estimate the economic contribution of the Medical Products Industry Cluster in Tampa Bay and Florida.

To analyze the extent of clustering of the Medical Products Industry Group, we observe whether the component industries in the group have similar supplier-industries. For the Medical Products Industry Group in Tampa Bay, Wholesale Trade exhibits the greatest supplier relationship to the group, followed by a number of service oriented supplier-industries. And, some of the primary industries provide inputs for other primary industries in the Medical Products Industry Group. Similar results are noticed in the analysis of Florida statewide, with some variation in the rankings and minimal substitution of individual supplier-industries. In general, the similarity of supplier-industries between the various primary industries leads us to conclude that the Medical Products Industry Group functions as an economic cluster.

Baseline contributions refer to the measures of output, employment, and labor income in the Medical Products Industry Group. We used the *IMPLAN™ Professional* software to determine the levels of each measure in Tampa Bay and Florida in 2004, which is the latest year we have data available from IMPLAN.

Baseline Contributions, Tampa Bay			
<u>Segment</u>	<u>Employment</u>	<u>Output</u> (Millions 2004\$)	<u>Labor Income</u> (Millions 2004\$)
Pharmaceutical	1,073	841.92	69.16
Biotech	2,684	241.73	137.09
Medical Devices	<u>8,712</u>	<u>2,388.54</u>	<u>683.17</u>
Total	12,469	3,472.19	889.42

In Tampa Bay, baseline industry output measured almost \$3.5 billion. Of this amount, more than two-thirds was produced by the Medical Devices Segment. There were nearly 12,500 baseline employees in the Medical Products Industry Group. These employees earned labor income of over \$889 million. These measures were heavily weighted in the Medical Devices Segment. Baseline contribution measures in Florida followed a similar pattern to Tampa Bay, except on an order of magnitude of about 3 to 4 times the levels in Tampa Bay.

Baseline Contributions, Florida

<u>Segment</u>	<u>Employment</u>	<u>Output</u> <u>(Millions 2004\$)</u>	<u>Labor Income</u> <u>(Millions 2004\$)</u>
Pharmaceutical	4,149	3,327.18	296.62
Biotech	18,045	1,883.68	1,184.99
Medical Devices	<u>26,398</u>	<u>6,997.77</u>	<u>2,045.91</u>
Total	48,592	12,208.63	3,527.52

Baseline output in the Medical Products Industry Group was over \$12.2 billion. Baseline employment totaled almost 48,600 workers, who earned more than \$3.5 billion in labor income. The baseline contribution amounts in Florida measured by output were composed of about 60% in the Medical Devices Segment, 25% in the Pharmaceutical Segment, and 15% in the Biotech Segment.

We used the State of Florida Unemployment Insurance data to ascertain the number of jobs in the Medical Products Industry Group. The latest annualized data available is for 2005.

Tampa Bay Unemployment Insurance Data

<u>Segment</u>	<u>Firms</u>	<u>Covered Jobs</u>	<u>Jobs paying &lt;\$36k</u>	<u>Jobs paying &gt;\$36k</u>
Pharmaceutical	23	1,171	18	1,153
Biotech	146	1,720	3	1,717
Medical Devices	<u>119</u>	<u>7,048</u>	<u>1,080</u>	<u>5,968</u>
Total	288	9,939	1,101	8,838

Florida Unemployment Insurance Data

<u>Segment</u>	<u>Firms</u>	<u>Covered Jobs</u>	<u>Average Wage</u>
Pharmaceutical	94	4,141	\$55,416
Biotech	779	10,741	\$69,845
Medical Devices	<u>522</u>	<u>25,434</u>	<u>\$49,390</u>
Total	1,395	40,316	\$55,458

In 2005, there were 288 firms in Tampa Bay and 1,395 in Florida that were a part of the Medical Products Industry Group. In Tampa Bay, these firms employed 9,939 workers, almost 90% of which were paid more than the statewide average wage. Over 70% of the Medical Products Industry Group employment in Tampa Bay was in the Medical Devices Segment. In Florida, there were more than 40,000 workers employed in the Medical Products Industry Group. Of these, about 65% were employed in the Medical Devices Segment, 25% were in the Biotech Segment, and 10% in the Pharmaceutical Segment. Average wages were highest in the Biotech Segment, and closely followed by the Pharmaceutical Segment. On average, wages of \$55,458 throughout the Medical Products Industry Group in Florida were significantly higher than the statewide average wage of just over \$36,000.

We also estimate the economic contribution of the Medical Products Industry Cluster to Tampa Bay and Florida in 2004. The economic stimulus is the existence of jobs in the Medical Products Industry Group. When we virtually remove these jobs, including the value of the output they produce and the income earned by their employees, a ripple effect occurs throughout the economy. The indirect effect is the impact to supplier-industries while the induced effect results from the loss of consumer spending by the displaced workers. We report this total economic contribution in terms of output, employment, and labor income.

Economic Contributions, Tampa Bay

<u>Segment</u>	<u>Employment</u>	<u>Output</u> <u>(Millions 2004\$)</u>	<u>Labor Income</u> <u>(Millions 2004\$)</u>
Pharmaceutical	5,752	1,486.87	263.42
Biotech	5,280	507.01	227.16
Medical Devices	<u>25,957</u>	<u>4,411.21</u>	<u>1,359.56</u>
Total	36,989	6,405.09	1,850.15

Economic Contributions, Florida

<u>Segment</u>	<u>Employment</u>	<u>Output</u> <u>(Millions 2004\$)</u>	<u>Labor Income</u> <u>(Millions 2004\$)</u>
Pharmaceutical	22,136	5,832.86	1,068.33
Biotech	37,932	3,931.44	1,880.67
Medical Devices	<u>75,386</u>	<u>12,834.37</u>	<u>4,011.78</u>
Total	135,454	22,598.67	6,960.78

In 2004, the number of jobs provided by firms associated with the Medical Product Industry Cluster was almost 37,000 in Tampa Bay and over 135,000 in Florida. This is a multiple of almost three times the number of direct jobs in the Medical Products Industry Group. The labor income earned by workers in these jobs exceeded \$1.85 billion in Tampa Bay and more than \$6.96 billion in Florida. Workers in these jobs produced output valued at more than \$6.4 billion in Tampa Bay and nearly \$22.6 billion in Florida.

As the effects of the economic activity of the Medical Products Industry Group ripple through the economy, there is added economic activity. The total economic contribution, in terms of the value of the output produced, is over 2.8% of the value of all economic activity in Tampa Bay. In Florida, output in the cluster represents more than 2.2% of total economic activity. The Medical Product Industry Cluster represents a substantial contribution to the diverse economy of the Tampa Bay region and to Florida. The economic contributions are both growing and sustainable. In terms of business life cycle, the economic contribution is characteristic of an industry in the early stages of maturation, one which has not yet reached its peak and which has significant room for further growth.