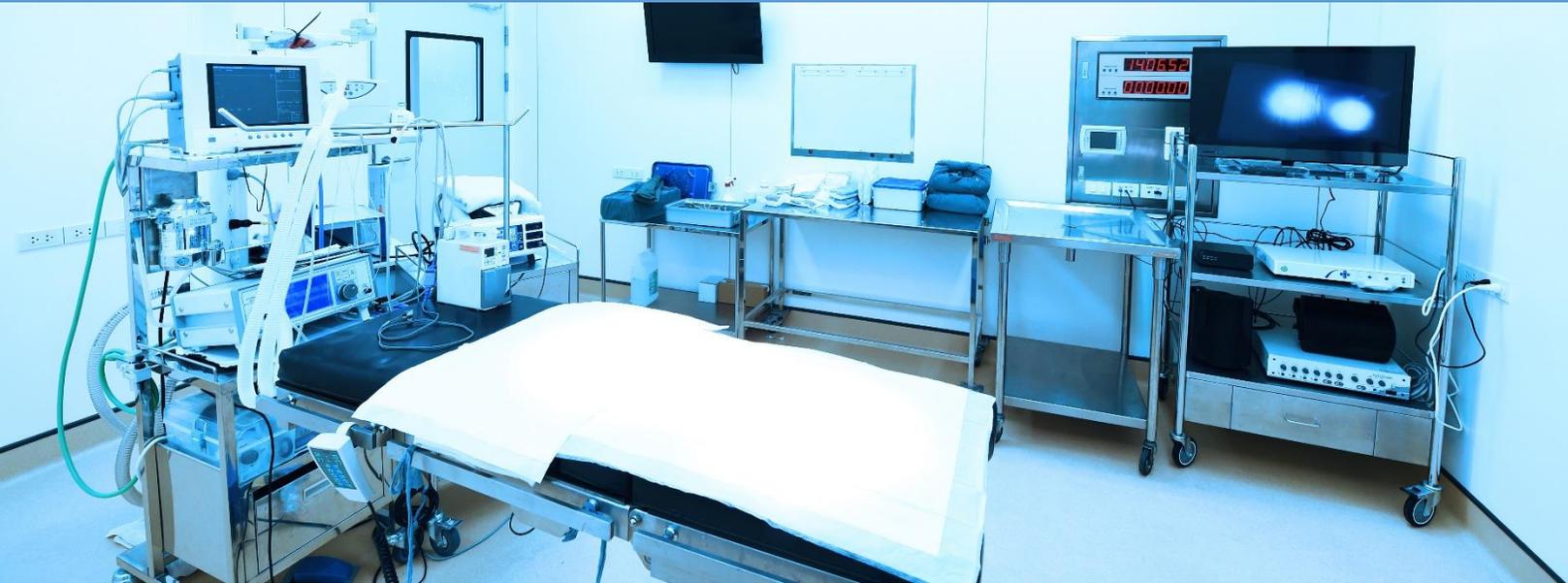


# Medical Devices



3rd

Largest **medical devices** cluster in Florida.



1,522

Employed in the **medical devices** cluster.



16

Establishments in the **medical devices** cluster.



15.7%

Average annual employment growth in the **medical devices** cluster.



182

Job seekers from top 5 occupations in the **medical devices** cluster.

# Industry Overview

The medical devices cluster consists of just five six-digit North American Industry Classification System (NAICS) codes with two subclusters. These include optical instruments, surgical and medical instruments, surgical appliances and supplies manufacturing, and dental equipment. The cluster ranks third in employment ranking in 2015 in the Southwest Florida region.

One major establishment accounts for over 1,000 employees, accounting for virtually all of the employment by this single firm. The 15 other establishments account for less than 100 employees altogether across all five counties. Growth in this cluster has been concentrated in primarily one of the five counties in the Southwest Florida region. After experiencing growth at an exceptionally strong pace between 2009 and 2014, employment decreased by almost 20 percent between 2014 and 2015.

Encouraging news were announced in late 2016 that Arthrex, the North Naples-based manufacturer of medical devices and surgical supplies, would be expanding its operations in Collier County, with a capital investment of over \$63 million and creating 560 jobs at its corporate campus. These jobs would average \$54,000 in salaries and be corporate in nature. Tax incentives were offered to maintain the company's presence in Collier County. Expectations are that the economic impact of this firm will be substantial and will promote the development of a more industrially diverse regional economy.

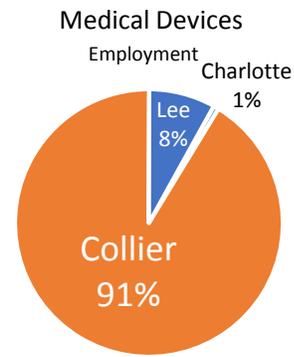
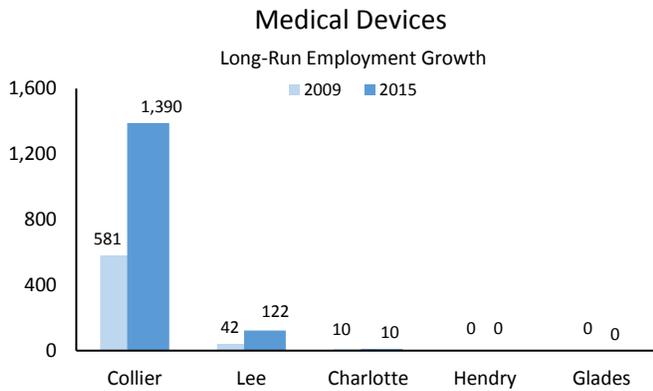
## Economic Profile

The medical devices cluster consists of five six-digit North American Industry Classification System (NAICS) codes with two subclusters: optical instruments and ophthalmic goods, and surgical and dental instruments and supplies. This cluster has very high location quotients, relative to both the state of Florida and the U.S. With a value that exceeds 1, the implication is that employment concentration in this cluster is quite high relative to the state and the country in like industries. The number of employees in the Southwest Florida region in this cluster represents 11 percent of employment in the state for this cluster. Growth in employment was quite high from 2009 to 2013 but it declined by about 20 percent between 2014 and 2015. As is typical, employment in areas of high concentration will experience sharper declines during downturns than areas with less concentration. The 20-percent decrease in employment in Southwest Florida was almost double the rate of decrease in the similar time period (-11.1 percent) for the state. The location quotients for this cluster in the Southwest Florida region were above 2, relative to the state and the U.S., implying that the concentration of employment in this region is extremely high. Employment in the entire state had a location quotient below 1 when compared to the U.S.

Medical Devices Economic Profile		
	Southwest Florida	Florida
Employment, 2015	1,522	14,141
Number of Establishments, 2015	16	291
Short-run employment growth, 2014 to 2015	-19.9%	-11.1%
Long-run employment growth, 2009 to 2015	140.4%	-8.6%
Average annual employment growth, 2009 to 2015	15.7%	-1.8%
Workforce Region Employment Ranking, 2015	3rd	--
Location Quotient, Relative to Florida, 2015	2.27	--
Location Quotient, Relative to United States, 2015	2.03	0.90

Source: County Business Patterns: 2015

# Employment by County



Southwest Florida’s medical devices cluster employed a total 1,522 in 2015. As can be seen in the graphs and the table nearby, employment for this cluster is highly concentrated in Collier County, which represents about 91 percent of total employment for this cluster in this region. As indicated on the bar graph, employment more than doubled between 2009 and 2015 in Collier County. Lee County employment, not as high as Collier, just about tripled over the six-year period. Employment in the remaining three counties was extremely small and insignificant as to the overall employment in those counties.

Medical Devices Employment		
By County		
County	Employment	Percent of Total Employment
Charlotte	10	0.7%
Collier	1,390	91.3%
Glades	0	0.0%
Hendry	0	0.0%
Lee	122	8.0%
<b>Southwest Florida</b>	<b>1,522</b>	<b>100.0%</b>

Source: County Business Patterns: 2015

There are 16 establishments comprising this cluster in Southwest Florida, with about half employing less than 10 workers. Collier County’s concentration of this cluster’s workers is evident in the table below, notwithstanding Lee County’s majority in terms of establishment count.

Medical Devices Establishments										
By County										
County	Number of Employees in Establishment									Total
	1 to 4	5 to 9	10 to 19	20 to 49	50 to 99	100 to 249	250 to 499	500 to 999	1000+	
Charlotte	1	0	0	0	0	0	0	0	0	1
Collier	1	2	0	0	1	1	0	0	1	6
Glades	0	0	0	0	0	0	0	0	0	0
Hendry	0	0	0	0	0	0	0	0	0	0
Lee	3	2	2	2	0	0	0	0	0	9
<b>Southwest Florida</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>16</b>

Source: County Business Patterns: 2015

Collier County accounted for the largest share of changes in employment in the medical devices cluster between 2009 and 2015 and consequently, the largest increase over that time period. Lee County was next in having the largest increase in jobs for this cluster.

Medical Devices Long-Run Employment Growth					
By County					
County	Employment			Percent Change	Average Annual Percent Change
	2009	2015			
Charlotte	10	10		0.0%	0.0%
Collier	581	1,390		139.2%	15.6%
Glades	0	0		N/A	N/A
Hendry	0	0		N/A	N/A
Lee	42	122		190.5%	19.4%
<b>Southwest Florida</b>	<b>633</b>	<b>1,522</b>		<b>140.4%</b>	<b>15.7%</b>

Source: County Business Patterns: 2015

## Employment by Subcluster

The major subcluster of the medical devices cluster is that of surgical and dental instruments and supplies. This subcluster accounts for 99 percent of all employment.

Medical Devices Employment		
By Subcluster		
Subcluster	Employment	Percent of Total Employment
Surgical and Dental Instruments and Supplies	1,512	99.3%
Optical Instruments and Ophthalmic Goods	10	0.7%
<b>Total</b>	<b>1,522</b>	<b>100.0%</b>

Source: County Business Patterns: 2015

The major subcluster of the medical devices cluster is that of surgical and dental instruments and supplies. It is represented by 15 of the 16 establishments that provide employment in the Southwest Florida region. Given that one major establishment accounts for over 1,000 employees, and as shown in the previous table, this accounts for virtually all of the employment by this single firm. The 15 other establishments account for less than 100 employees altogether across all five counties.

Medical Devices Establishments										
By Subcluster										
Subcluster	Number of Employees in Establishment									Total
	1 to 4	5 to 9	10 to 19	20 to 49	50 to 99	100 to 249	250 to 499	500 to 999	1000+	
Surgical and Dental Instruments and Supplies	4	4	2	2	1	1	0	0	1	15
Optical Instruments and Ophthalmic Goods	1	0	0	0	0	0	0	0	0	1
<b>Total</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>16</b>

Source: County Business Patterns: 2015

The growth rate in employment by subcluster over the six-year period (2009-2015) is shown below. The number of employees in the subcluster of surgical and dental instruments and supplies more than doubled during this time, while employment in optical instruments remained unchanged.

## Medical Devices Long-Run Employment Growth

By Subcluster

Subcluster	Employment		Percent Change	Average Annual Percent Change
	2009	2015		
Surgical and Dental Instruments and Supplies	623	1,512	142.7%	15.9%
Optical Instruments and Ophthalmic Goods	10	10	0.0%	0.0%
<b>Total</b>	<b>633</b>	<b>1,522</b>	<b>140.4%</b>	<b>15.7%</b>

Source: County Business Patterns: 2015

## Workforce Ranking

Employment in medical devices in Southwest Florida ranked third when compared to the entire Florida workforce region, with 1,522 workers. Southwest Florida was well below Pinellas 2,692 during this period, but slightly above Broward's 1,367.

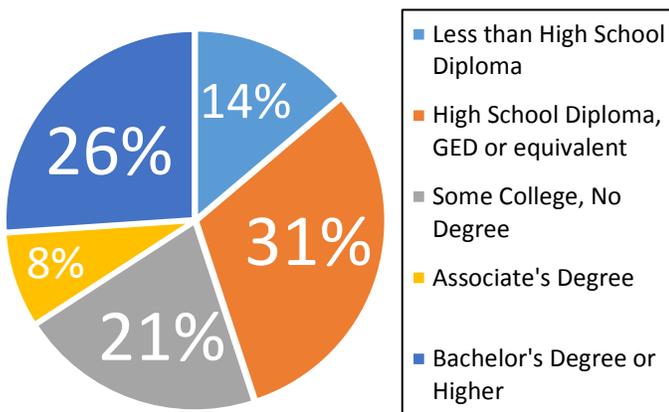
Medical Devices Workforce Rankings		
Rank	Workforce Region	Employment Level
1	Northeast Florida	3,260
2	Pinellas	2,692
<b>3</b>	<b>Southwest Florida</b>	<b>1,522</b>
4	Broward	1,367
5	South Florida	1,030
6	North Central Florida	908
7	Central Florida	700
8	Flagler Volusia	661
9	Palm Beach County	659
10	Brevard	409
11	Suncoast	333
12	Tampa Bay	320
13	Citrus Levy Marion	255
14	Pasco Hernando	150
15	Research Coast	90
16	Heartland	70
17	Polk	70
18	Capital Region	20
19	Escarosa	20
20	North Florida	10
21	Gulf Coast	10
22	Okaloosa Walton	10
23	Florida Crown	0
24	Chipola	0

Source: County Business Patterns: 2015

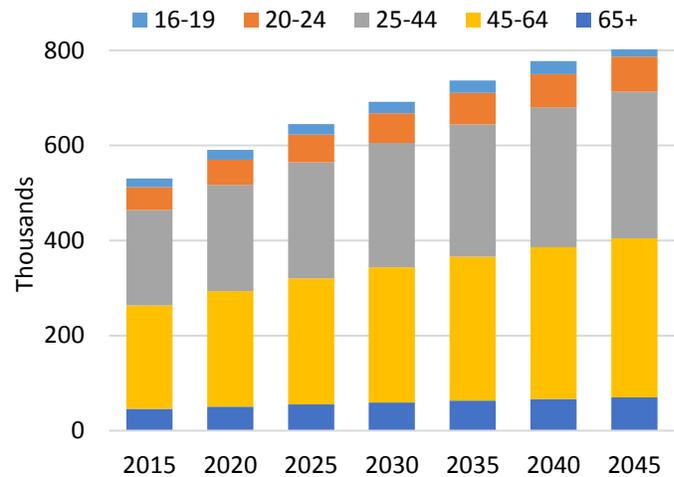
# Workforce Profile

Many companies choose to operate in Southwest Florida due to its workforce. Of the region's adult population, 26 percent have a Bachelor's Degree or higher, while 86 percent have at least a high school diploma. Florida Gulf Coast University conferred 2,331 Bachelor's Degrees to students during the 2015-2016 academic year, while Florida Southwestern State College, with its four campuses throughout the region, conferred 1,942 Associate's Degrees and 341 Bachelor's Degrees during the 2014-2015 academic year. Other educational institutions serving the area include Hodges University in Naples and Kaiser University in Fort Myers. Meanwhile, regional training programs, such as CareerSource Florida, provide training programs and certificates in numerous areas. Furthermore, the composition of the workforce is expected to change as the population grows over the next 25 years. Southwest Florida's population is expected to grow 50 percent by 2045, expanding the region's customer base while increasing its labor force by 54 percent.

## Educational Attainment



## Projected Labor Force



## Medical Devices Occupations

By Total Employed

Occupation	Total Working Across All Industries	Number of Available Applicants	Number of Graduates	Entry Wage	Median Wage	Experienced Wage	Education Level
Stock Clerks and Order Fillers	7,147	150	0	\$9.28	\$11.39	\$13.33	High School/GED
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	549	19	0	\$18.83	\$32.57	\$50.33	PSAV
Medical and Clinical Laboratory Technologists	433	3	0	\$22.97	\$27.73	\$30.60	Some College
Medical and Clinical Laboratory Technicians	191	10	0	\$12.37	\$17.43	\$21.39	Some College
Medical Scientists, Except Epidemiologists	55	0	0	\$25.19	\$31.19	\$42.55	Master's Degree or Higher

Source: Florida Department of Economic Opportunity, Occupational Supply/Demand Report

# Cluster Highlights

## KEY COMPANY ANNOUNCEMENTS

- In December 2016, Arthrex, a global manufacturer of medical devices and supplies, announced it would expand its operations in Collier County, adding 560 new jobs. In addition to manufacturing products, the company trains surgeons on the medical devices. New jobs as well as spillover effects from this move will have positive impacts on jobs in this cluster. The new jobs are expected to pay – on average - \$54,000 a year, with annual benefits of \$17,000 and will be more corporate in nature.
- Also in December 2016, Arthrex announced plans to expand its capital investment more than \$63 million in Southwest Florida. Arthrex could receive more than \$5.9 million in incentives from the state and the county for its expansion.

## EVENTS, AWARDS AND RECOGNITIONS

- In 2016, FORTUNE magazine ranked Arthrex as the 62nd in its list of “100 Best Companies to Work For” and the 33rd out of the top 50 companies for giving back to communities. The magazine also ranked Arthrex 3rd out of a list of 15 best workplaces in the nation for manufacturing and production.

## Companies

- Arthrex  
[www.arthrex.com](http://www.arthrex.com)
- D& D Machine and Hydraulics  
[www.ddpumps.com](http://www.ddpumps.com)
- Dawning Technologies  
[www.dawning.com](http://www.dawning.com)

## Education & Training

Florida’s system of higher and post-secondary education provides hundreds of training programs generating advanced degrees and occupational certificates that prepare students for productive careers in our region. The state university system includes 13 institutions, while community colleges number 28. Furthermore, there are 84 private universities and occupational and technical schools in the state. A list of the top educational institutions producing graduates that work in the medical devices cluster would include the following:

- Florida Gulf Coast University  
[www.fgcu.edu](http://www.fgcu.edu)
- University of Miami  
[www.miami.edu](http://www.miami.edu)
- Florida State University  
[www.fsu.edu](http://www.fsu.edu)
- University of Central Florida  
[www.ucf.edu](http://www.ucf.edu)
- University of South Florida  
[www.usf.edu](http://www.usf.edu)
- Florida Atlantic University  
[www.fau.edu](http://www.fau.edu)
- Florida International University  
[www.fiu.edu](http://www.fiu.edu)
- Miami-Dade College  
[www.mdc.edu](http://www.mdc.edu)
- University of Florida  
[www.ufl.edu](http://www.ufl.edu)

# Cluster Definition

Medical devices is the cluster made up of surgical manufacturers, dental, optical, and ophthalmic goods manufacturing. It also includes veterinary instruments and supplies. The cluster is made up of five NAICS industries that are part of two subcluster categories, as shown on the table below.

Medical Devices Breakdown of Subclusters	
Subcluster/NAICS Description	6-Digit NAICS Code
<i>Optical Instruments and Ophthalmic Goods</i>	
Optical Instrument and Lens Manufacturing	333314
Ophthalmic Goods Manufacturing	339115
<i>Surgical and Dental Instruments and Supplies</i>	
Surgical and Medical Instrument Manufacturing	339112
Surgical Appliance and Supplies Manufacturing	339113
Dental Equipment and Supplies Manufacturing	339114

*Source: U.S. Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School*