



Bio-Medical

Pennsylvania defines industry clusters to serve as the basis for data-driven workforce development policies. An industry cluster includes industries closely linked by common products, labor pools, technologies, supplier chains and training needs. They take on strategic importance for long-term economic planning as changes that benefit one group member will generally impact other members of the cluster.

Industry clusters are comprised of specific six-digit North American Industry Classification System, or NAICS, codes. They are mutually exclusive, so that no two clusters contain the same NAICS code. Currently, there are 12 clusters identified, along with several critical sub-clusters. Combined, these 12 industry clusters account for nearly 82 percent of all employment in the Commonwealth.

Cluster Summary

The Bio-Medical (BM) cluster includes industries that develop and use technology to enhance life from a health perspective. Industries in this cluster include research laboratories, pharmaceutical manufacturing, surgical and medical equipment manufacturing, and imaging centers. This cluster largely represents industries that employ advanced technology and serve as a foundation for enhanced medical services.

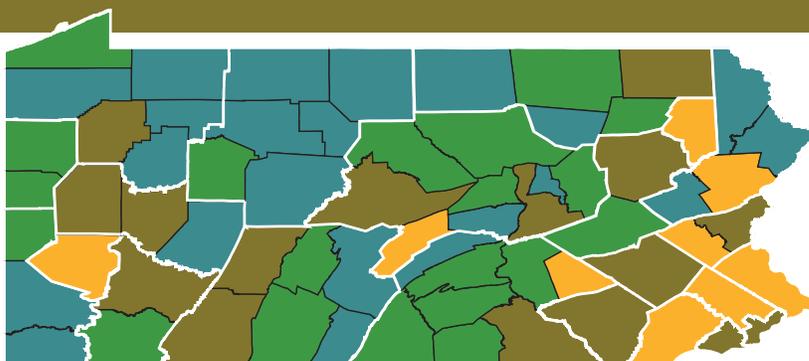
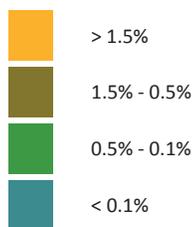
	2009	2014
Employer Units	2,225	2,369
Number of Jobs	82,122	73,585
Percent of Total Pennsylvania Jobs	1.50%	1.30%
Average Annual Wages	\$88,609	\$99,226
Location Quotient	1.27	1.14

Statewide employment within the cluster has declined over the 2009-2014 time period. While the state still maintains a competitive Location Quotient (LQ), it is not as drastic as it once was. Much of the employment decline in the cluster appears to have been in lower-paying jobs as the average wage jumped considerably (more than 11%) over the same time period.



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Percent Employment by County



Major Employers

- Merck Sharp & Dohme Corporation
- Quest Diagnostics Inc
- Aventis Pasteur Inc
- Bayer Healthcare LLC
- Teva Pharmaceuticals USA Inc
- McNeil-PPC Inc



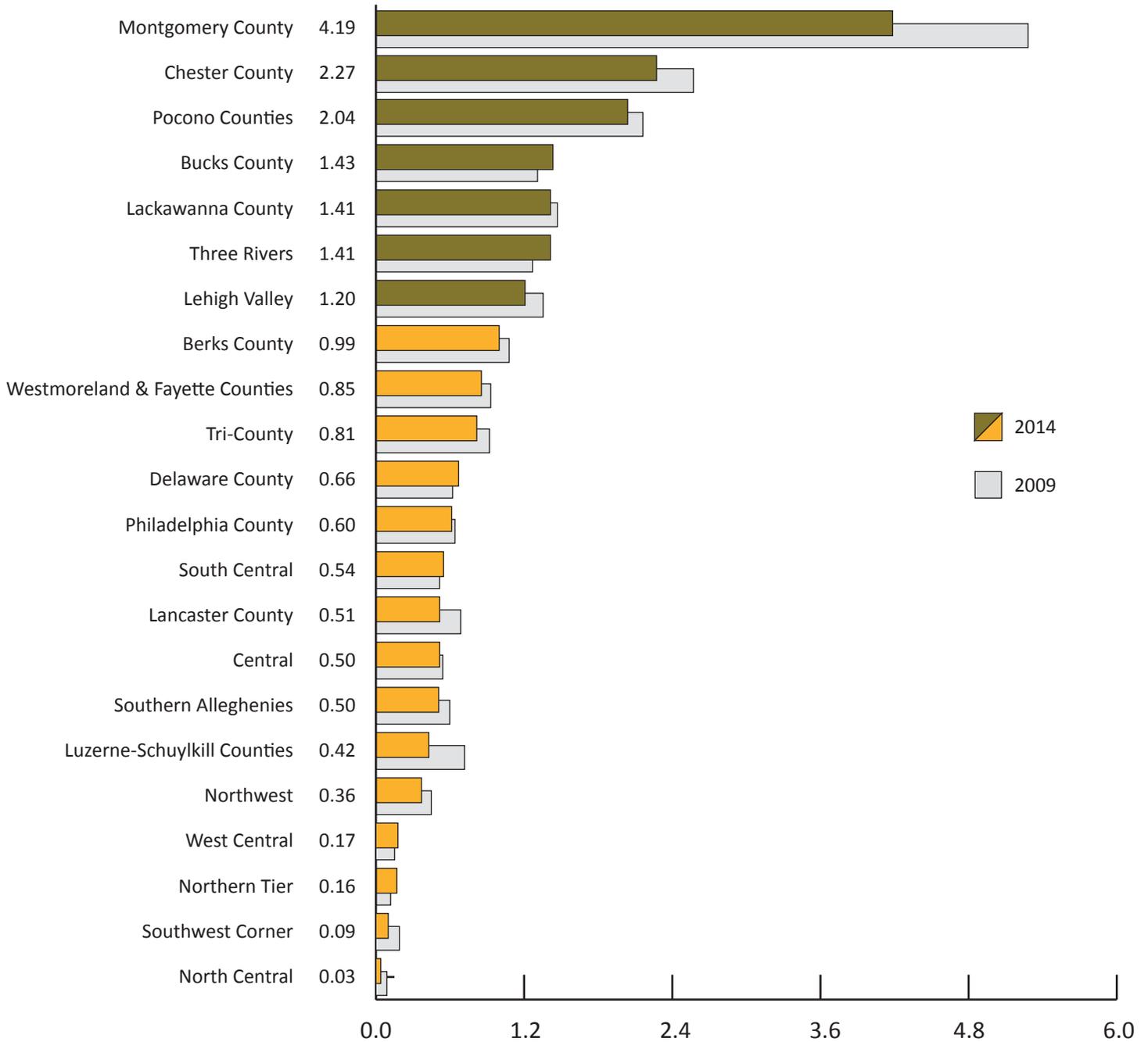
Top Industries Based on Employment

- Physical, Engineering & Biological Research
- Pharmaceutical Preparation Manufacturing
- Medical Laboratories
- Surgical & Medical Instrument Manufacturing
- Other Biological Product Manufacturing
- Surgical Appliance & Supplies Manufacturing
- Diagnostic Imaging Centers
- Electromedical Apparatus Manufacturing
- Social Science & Humanities Research
- Dental Laboratories
- Dental Equipment & Supplies Manufacturing
- Ophthalmic Goods Manufacturing
- Medicinal & Botanical Manufacturing
- Optical Instrument & Lens Manufacturing
- In-Vitro Diagnostic Substance Manufacturing
- Laboratory Apparatus & Furniture



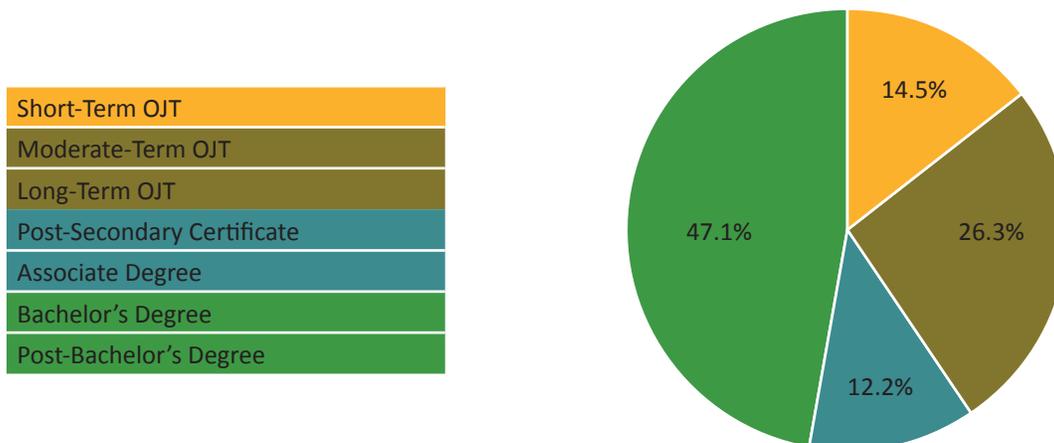
Employment Concentration

A location quotient, or LQ, compares a cluster's share of local employment to its share of national employment. This value can be used when evaluating the strength of an industry cluster within an area. A quotient greater than one indicates that the cluster has, on average, more employees locally than typically expected implying a possible competitive advantage. While the Montgomery County Workforce Development Area (WDA) has the highest LQ of any area, it has declined significantly since 2009. Only Bucks County and Three Rivers WDAs have LQs greater than one and have also slightly increased their competitiveness since 2009.



Educational Requirements

This graph illustrates the minimum educational attainment levels for jobs found in this cluster's various industries. Postsecondary education is very important to jobs found in this cluster as nearly 68 percent of BM jobs require some formal postsecondary education to enter employment. This cluster offers the fewest opportunities for employment to low-skilled workers.



Occupations with Significant Employment

The following table lists occupations that are typically employed within the BM cluster. They may not all be identified as High Priority Occupations (HPOs), but are reflective of the cluster's staffing needs. The BM cluster employs at least 1,200 people in each of these 15 occupations.

SOC Code	Occupation	Cluster Wage 2014	Job Openings	
			Industry Cluster	All Industries
19-2031	Chemists	\$87,801	92	177
19-1042	Medical Scientists	\$97,677	84	150
51-9111	Packaging & Filling Machine Operators	\$36,246	55	440
29-2011	Medical & Clinical Laboratory Technologists	\$61,278	65	260
19-4021	Biological Technicians	\$53,216	75	170
51-9061	Inspectors, Testers, Sorters, Samplers & Weighers	\$50,498	53	640
51-2092	Team Assemblers	\$32,856	35	843
29-2012	Medical & Clinical Laboratory Technicians	\$46,540	56	303
41-4011	Sales Representatives, Technical & Scientific Products	\$109,231	43	402
43-4051	Customer Service Representatives	\$44,371	49	3,709
43-9061	Office Clerks, General	\$40,981	31	3,274
17-2112	Industrial Engineers	\$91,374	51	438
43-6014	Secretaries	\$40,907	25	2,256
11-1021	General & Operations Managers	\$145,230	33	1,678
15-1132	Software Developers, Applications	\$104,127	36	488