



MICHIGAN HEALTHCARE

2019 INDUSTRY CLUSTER WORKFORCE ANALYSIS

MICHIGAN HEALTHCARE

2019 INDUSTRY CLUSTER
WORKFORCE ANALYSIS

EVAN LINSKEY

Economic Analyst

LinskeyE@michigan.gov

(517) 241-8272

IT'S BIGGER THAN DATA.

The Bureau of Labor Market Information and Strategic Initiatives is your one-stop shop for information and analysis on Michigan's population, labor market, and more.

- Our Federal-State Programs division runs the state's cooperative agreements with the U.S. Bureau of Labor Statistics and the U.S. Census Bureau, making us the official source for this information.
- Our Research and Evaluation division conducts workforce research and program evaluation, giving you the insight you need to make smarter decisions.



TABLE OF CONTENTS

4	Key Findings
6	Healthcare Employment and Wages Analysis
8	Analysis of Healthcare Subclusters
10	Key Healthcare Occupations
12	High-demand Healthcare Occupations
13	Healthcare Career Pathway
14	Healthcare Real-time Demand and Employment Projections
16	Healthcare Workforce Demographics
18	Healthcare Talent Pipeline
19	Conclusion

Dear Colleagues,

The Michigan Department of Labor and Economic Opportunity partners with businesses to help them find the talent they need to be successful. To assist with this process, we worked with the Bureau of Labor Market Information and Strategic Initiatives to produce a series of workforce analysis reports, each focusing on a key industry cluster in the Michigan economy. These reports are loaded with useful information on talent, including an analysis of employment, wages, key occupations, demand jobs, talent pipelines, and career pathways. We hope these reports will help our business partners make data-driven workforce decisions and help our state grow a talent system that is second to none.



STEPHANIE BECKHORN
DIRECTOR, WORKFORCE DEVELOPMENT
Michigan Department of Labor
and Economic Opportunity

Dear Colleagues,

The Michigan Bureau of Labor Market Information and Strategic Initiatives is your one-stop shop for information and analysis on Michigan's population, labor market, and more. These reports provide traditional labor market information, but also discuss important topics such as talent pipelines and career pathways. These reports give our workforce partners, employers, and job seekers the insight they need to make smarter decisions. We would like to thank the Department of Labor and Economic Opportunity for partnering with us on these reports.

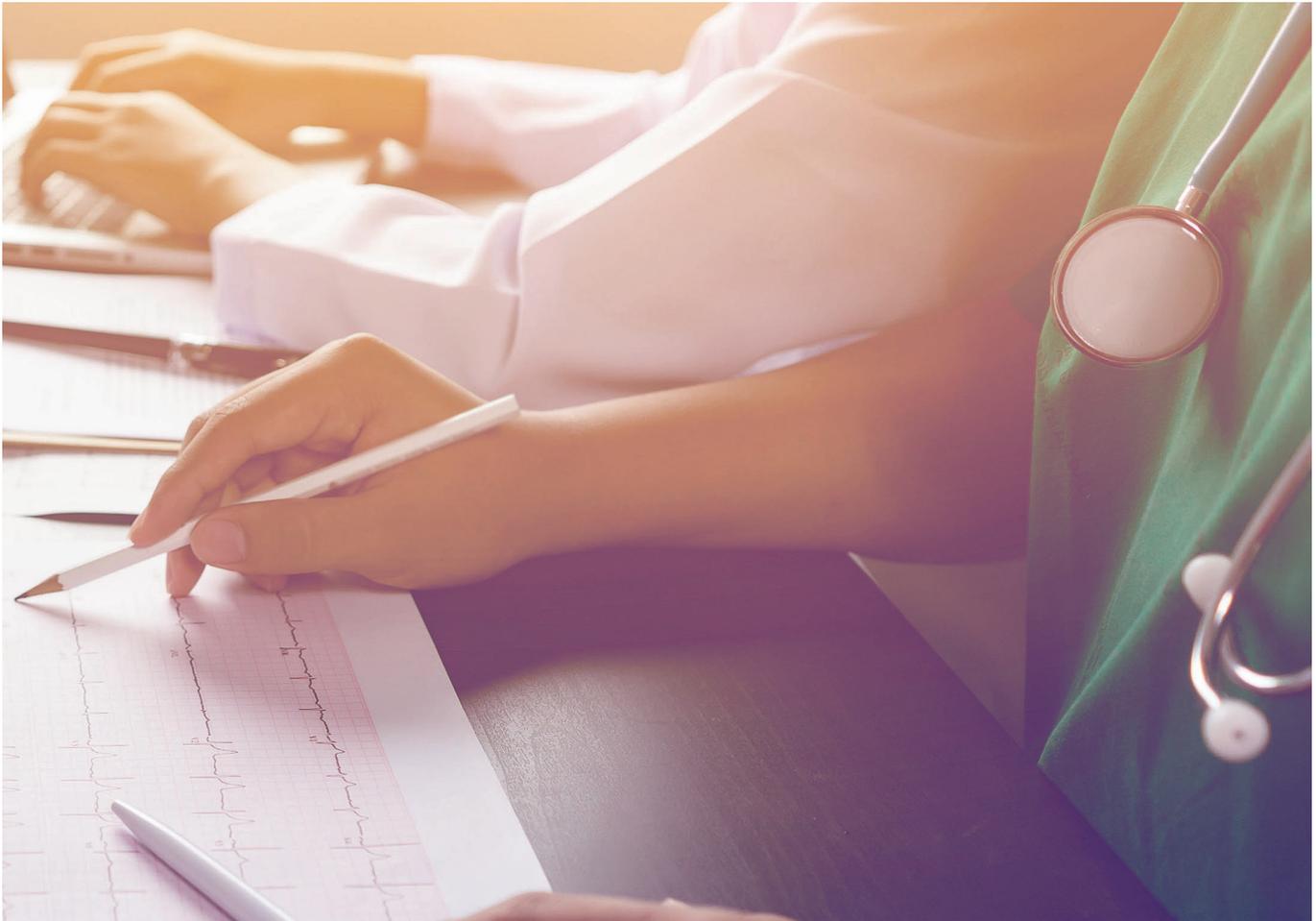


JASON PALMER
DIRECTOR
Michigan Bureau of Labor Market
Information and Strategic Initiatives



Key Findings

- Employment in the Healthcare cluster has grown 24 percent since 2000. Healthcare employment continued to grow throughout the Great Recession in contrast with the contracting statewide economy. The cluster now employs over 675,000 people in the state, which is almost 16 percent of all employment.
- The Hospital subcluster employs nearly 250,000 people, with large growth in both employment and the number of establishments. Hospitals employ a wide variety of occupations due to their size and organizational structure.
- The Healthcare cluster includes a variety of jobs with low education and training requirements such as *Home health aides*, *Nursing assistants*, and *Personal care aides*. These jobs have very high projected growth rates and projected annual openings.
- While Michigan's all-occupation projected growth rate through 2026 sits at 7.0 percent, *Healthcare practitioners and technical occupations* are projected to double this growth rate at 14.2 percent, adding more than 40,000 new jobs over 10 years. From 2016 to 2026, Healthcare support occupations are projected to grow more than triple the statewide rate at 22.7 percent, which is by far the largest projected growth for any major occupational group.
- Since 2013, the number of Healthcare education program completers has declined slightly from 33,000 to 28,500 in 2017. The level of completions also has shifted over the past five years. Those earning certificates and associate degrees have declined, but the number of those completing bachelor's, master's, and doctorate degrees has grown. This may be in part due to some completers going back to school for more education as they climb the career ladder.



An **industry cluster** is a geographic concentration of related employers, industry suppliers, and support institutions in a product or service field.

In a practical sense, industry clusters are an organizing framework to permit the selection of significant industry sectors for which in-depth knowledge and expertise on workforce issues are developed by service providers that convene employers. An industry cluster leverages the knowledge and resources of all involved, decreases duplication of effort, and often achieves cost savings for recruitment and training.

The increased demand for healthcare and social services ensures that the Healthcare cluster is an integral component of Michigan's economy now and into the future. Demand for the cluster continues to increase as the population grows and ages.

The Healthcare cluster is comprised of establishments providing a range of goods and services from hospital treatment to pharmaceutical needs.

Nine subclusters highlight the diverse array of activities composing this facet of Michigan's economy.

- Offices of Health Specialists
- Clinical and Ambulatory Healthcare
- Home Healthcare
- Hospitals
- Care Facilities
- Biotechnology
- Pharmacy and Health Retail and Wholesale
- Community and Social Services
- Healthcare-related Manufacturing



Healthcare Employment and Wages Analysis

Average wages have grown from just under \$36,000 per year to more than \$53,000 from 2000 to 2017. Growth has been steady, with only a slight stagnation in wages around the Great Recession.

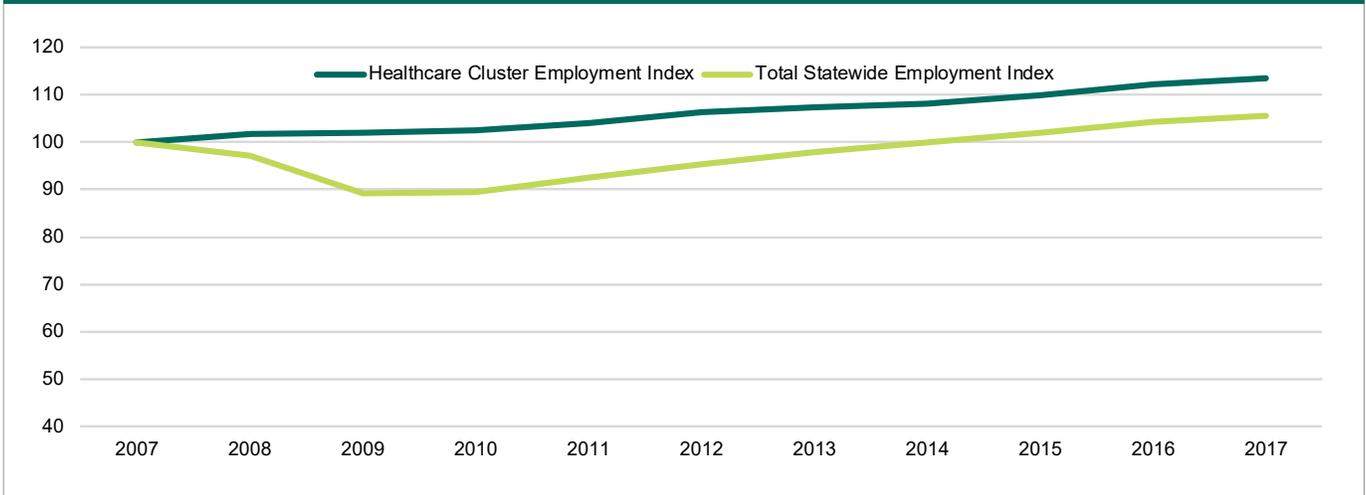
In Figure 1, employment in the Healthcare cluster and the state is indexed to 2007. Each level of 2007 employment was set equal to 100 and changes were graphed from there. Statewide employment took a major dip in the state during the Great Recession, but the Healthcare cluster remained steady throughout, and has since continued to grow.

Healthcare wages were higher and rising through 2017 when compared to pre-recession levels. When indexed to 2007, statewide wages show much the same trend, but clearly dipped during and after the recession, taking more time to recover. A nominal wage index does not reflect changes in wage associated with inflation but can be useful when indexed to compare it to the state as a whole. (Figure 2)

Healthcare employment relative to total statewide employment is a unique cluster in the state because it is significantly larger (24 percent higher) than it was in 2000. Total employment in the state has seen about a 5 percent decline in employment over the same 18-year period. The most recent recession slowed growth, but the cluster did not see any large decline. In 2000, the state employed 543,189 workers in the cluster, but this has grown to 675,940 in 2017. While statewide employment dipped during the recession, Healthcare continued growing steadily.

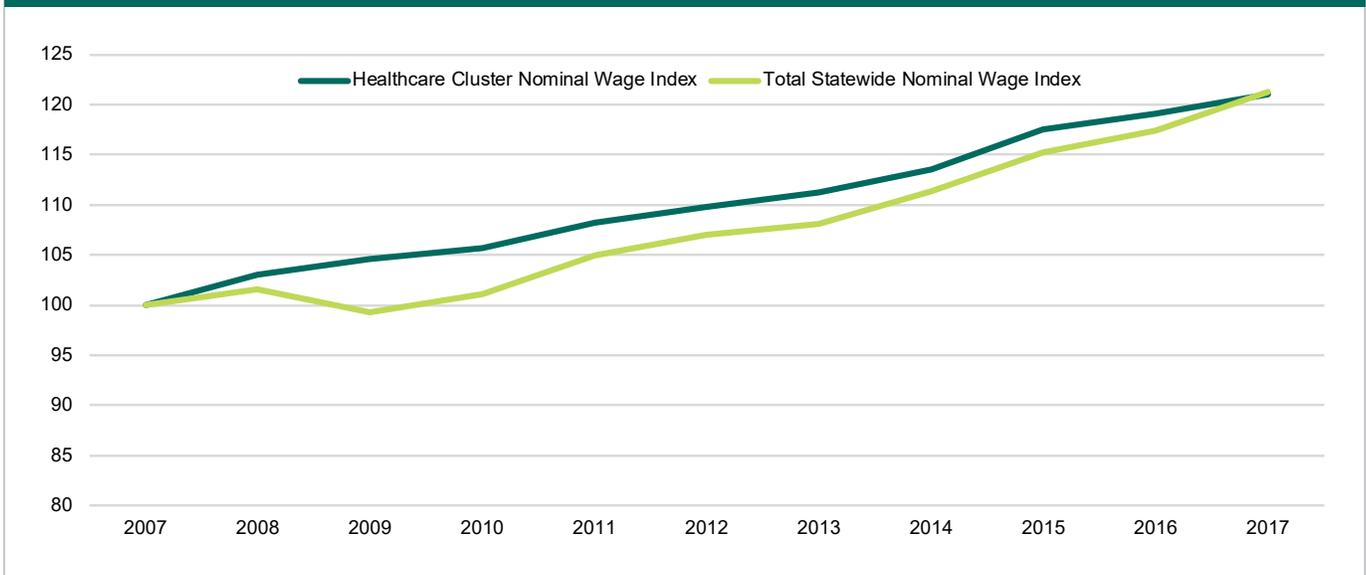
The number of Healthcare establishments has gone up 11.0 percent since 2000. This is impressive growth, but it is relatively mild compared to the 24.4 percent growth in employment. As businesses and industries grow, it is cheaper to add employees than to invest in brick-and-mortar infrastructure. Also, many Healthcare establishments are not tied to one building but can grow while still being classified as one establishment. Some facets of Healthcare, such as home health, are not directly tied to a location and therefore have more flexibility to grow employment.

FIGURE 1: EMPLOYMENT INDEX, MICHIGAN HEALTHCARE CLUSTER



Source: Quarterly Census of Employment and Wages, Michigan Bureau of Labor Market Information and Strategic Initiatives

FIGURE 2: NOMINAL WAGE * INDEX, MICHIGAN HEALTHCARE CLUSTER



Source: Quarterly Census of Employment and Wages, Michigan Bureau of Labor Market Information and Strategic Initiatives

*Nominal wages are not adjusted for inflation.



Analysis of Healthcare Subclusters

Hospitals (248,702 jobs)

Hospitals

Employment in the *Hospital* subcluster has grown nearly 23 percent since 2000. Notably, the number of establishments in this subcluster has nearly doubled from 246 in 2000 to 471 in 2017. These establishments tend to be large and occupationally diverse, employing more than 528 workers on average.

Offices of Health Specialists (132,668 jobs)

Offices of Physicians

Offices of Dentists

Offices of Other Healthcare Practitioners

In step with the *Healthcare* cluster, employment in this subcluster has gone up 31 percent since 2000. Outside of a small dip in 2010, this subcluster has been growing every year. In 2017, there were 12,300 employers in this subcluster, with an average employment of just under 11 employees.

Care Facilities (105,524 jobs)

Nursing Care Facilities (Skilled Nursing)

Residential Intellectual and Developmental Disability, Mental Health and Substance Abuse Facilities

Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly

Care facility employment has grown 26 percent since 2000. This comes with only a 17 percent increase in establishments, so growth in average employment per facility has been the main driver of subcluster growth. With fluctuations in between, total establishment count was nearly the same in 2014 (1,943) and 2000 (1,939). Only since 2014 have establishments grown to 2,264. These facilities are expected to continue to multiply and grow as the average age and life expectancy continue to rise across the nation and the state.

Community and Social Services (51,560 jobs)

Services for the Elderly and Persons with Disabilities

Other Individual and Family Services

Vocational Rehabilitation Services

This subcluster has seen the largest increase in establishments, with a 119 percent increase since 2000. There were 1,642 recorded establishments in this cluster in 2015, but by 2017 the state had 2,144. Meanwhile, employment rose nearly 56 percent.

Pharmacy and Health Retail and Wholesale (41,318 jobs)

Medical, Dental, and Hospital Equipment Merchants and Wholesalers

Drug and Druggist Sundries Merchant Wholesalers

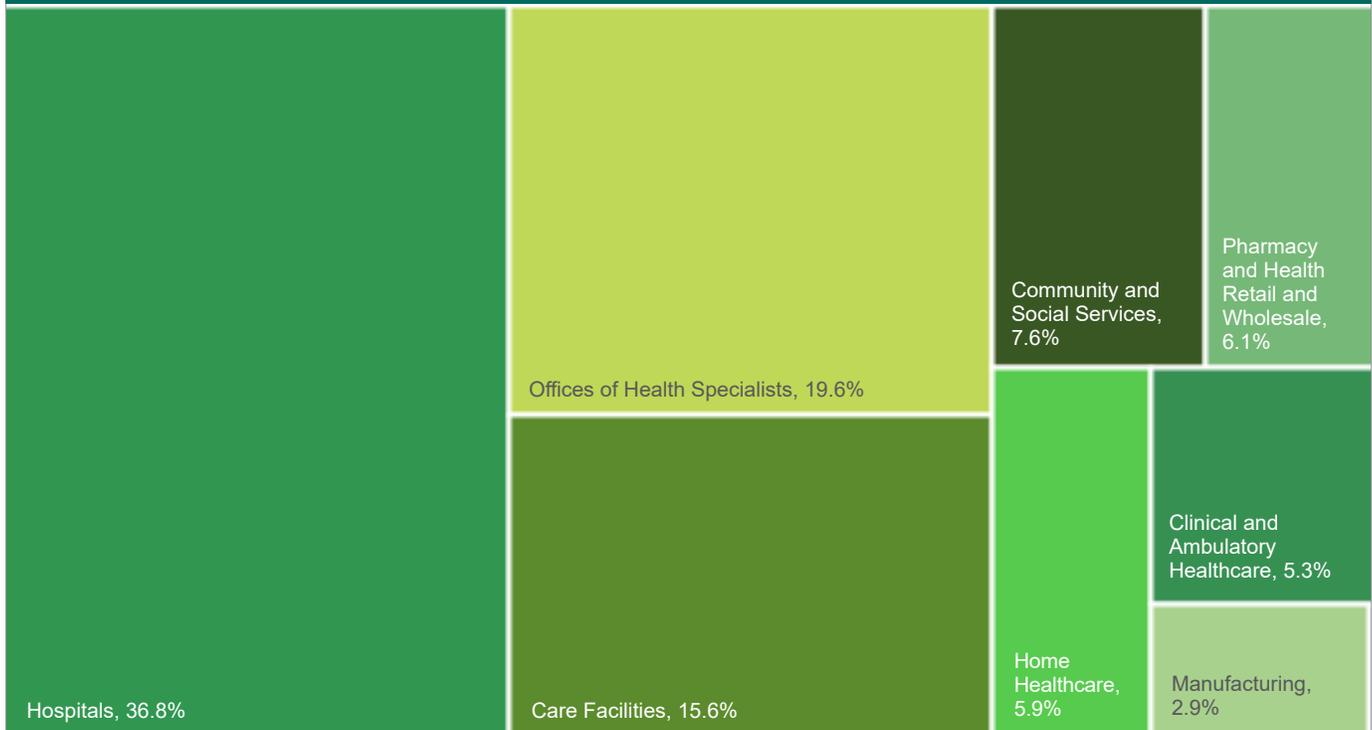
Pharmacies and Drug Stores

Optical Goods Stores

All Other Health and Personal Care Stores

This subcluster has seen minor growth in employment since 2000, increasing 5 percent. However, the number of establishments has risen 38 percent. Real average wages increased 23 percent from 2000 to 2004, but have remained relatively stagnant since then. In 2017 average wages were down slightly from 2004.

FIGURE 3: SUBCLUSTER DISTRIBUTION, MICHIGAN HEALTHCARE CLUSTER, 2017



Source: Quarterly Census of Employment and Wages, Michigan Bureau of Labor Market Information and Strategic Initiatives

Home Healthcare (39,848 jobs)

Home Healthcare Services

As the state’s population continues to age, the *Home healthcare* subcluster has boomed. Since 2000, employment in this subcluster has grown more than 87 percent. These employers also tend to make up slightly larger systems, employing fewer than 32 people per establishment.

Clinical and Ambulatory Healthcare (35,749 jobs)

- Outpatient Care Centers
- Medical and Diagnostic Laboratories
- Other Ambulatory Healthcare Services

In 2000, the state had 23,712 employees in this subcluster. This amounts to more than a 50 percent increase through 2017. These employers tend to be larger than health specialty offices, with an average employment of nearly 26.

Healthcare-related Manufacturing (19,882 jobs)

- Pharmaceutical and Medicine Manufacturing
- Medical Equipment and Supplies Manufacturing

Healthcare manufacturers have declined over the past few decades, but at a slower rate than all manufacturing. Since 2000, establishments have declined nearly 5 percent and employment has dropped more than 14 percent. Notably, real average wages have spiked more than 66 percent since 2000, climbing from slightly less than \$53,000 to nearly \$88,000.

Biotechnology (690 jobs)

- Research and Development in Biotechnology (except Nanobiotechnology)

This subcluster is the smallest as well as one of the most narrowly defined. It is an emerging industry and has gained more recognition nationally in recent years. Previously, these employers were wrapped in with other similar businesses, but this industry has earned separate recognition with new developments and growth in the field.

Key Healthcare Occupations

Occupations are an important level of analysis within the Healthcare cluster. The top 15 key occupations in the cluster (featured in Table 1) are determined by two criteria: the occupation's share of the cluster's total employment and the occupation's share of the state's employment for that occupation. Because the volume of these jobs in the cluster is large, they are fairly representative of the typical wages, education, skills, and demand for the cluster.

Table 1 includes a column that measures the talent gap for each occupation, meaning the difference between the talent supply and employer demand for that occupation. The occupations were each given a separate score for supply and demand based on composite indexes. Shortages or surpluses were then determined based on the differences between the supply and demand scores. More information on Michigan's Occupational Supply and Demand and the Talent Gap variable can be found in *Michigan's Labor Market News*, vol. 74, issue 10.

TABLE 1: KEY OCCUPATIONS, MICHIGAN HEALTHCARE CLUSTER

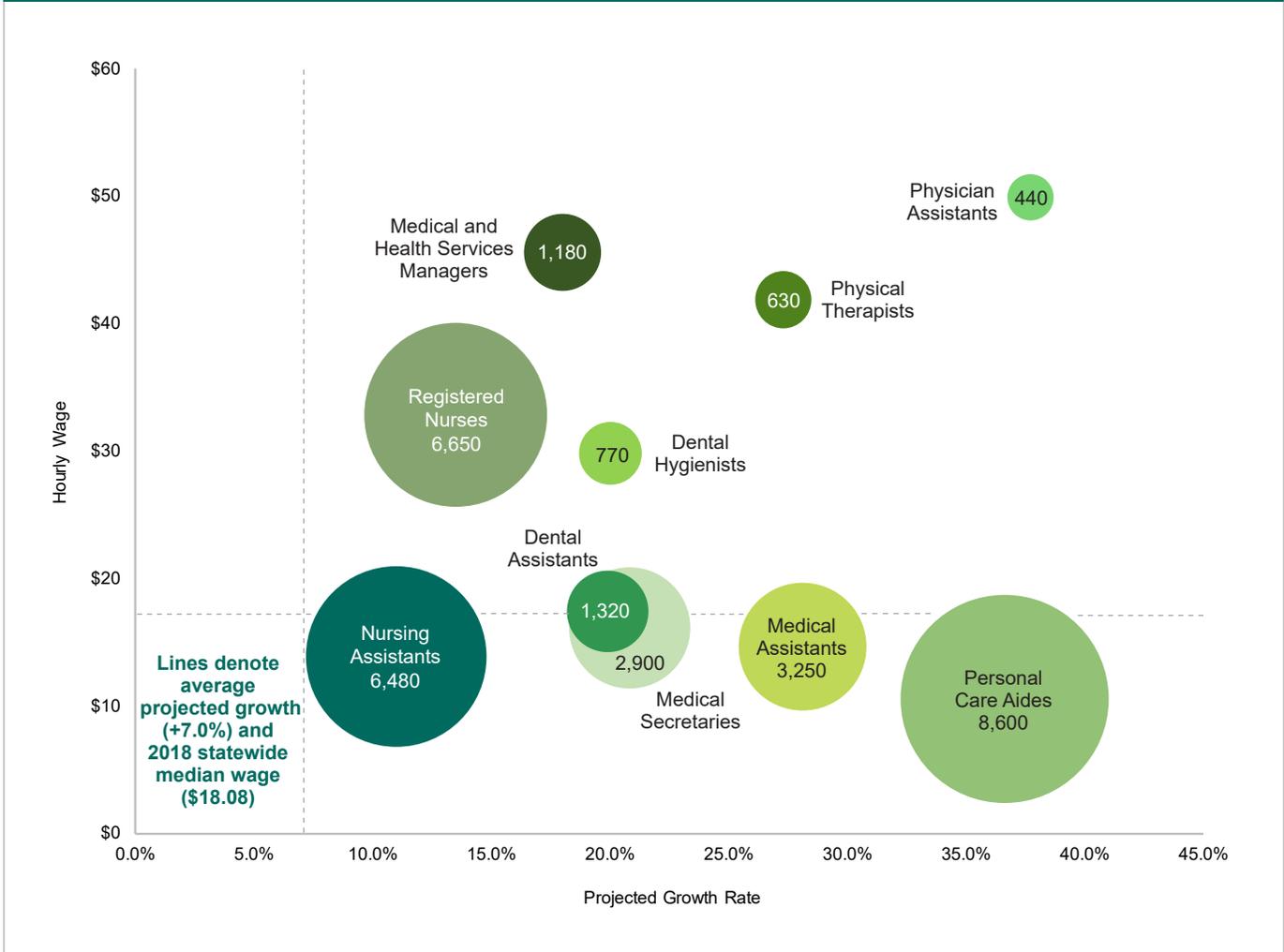
KEY OCCUPATION	CLUSTER EMPLOYMENT	MICHIGAN EMPLOYMENT	CLUSTER WAGE RANGE	ANNUAL OPENINGS	TYPICAL EDUCATION AND TRAINING	TALENT GAP
Dental Assistants	9,240	9,550	\$15–\$21	1,320	Postsecondary Nondegree Award	Shortage
Dental Hygienists	9,950	10,090	\$27–\$34	770	Associate Degree	Shortage
Home Health Aides	21,950	27,100	\$9–\$12	5,310	High School Diploma or Equivalent and Short-term On-the-job Training	Shortage
Licensed Practical and Licensed Vocational Nurses	13,200	14,920	\$20–\$26	1,420	Postsecondary Nondegree Award	Shortage
Medical and Health Services Managers	9,780	10,940	\$35–\$61	1,180	Bachelor's Degree	Shortage
Medical Assistants	22,320	22,790	\$13–\$17	3,250	Postsecondary Nondegree Award	Shortage
Medical Secretaries	24,510	25,830	\$14–\$19	2,900	High School Diploma or Equivalent and Moderate-term On-the-job Training	Balanced
Nursing Assistants	46,640	50,070	\$12–\$16	6,480	Postsecondary Nondegree Award	Shortage
Personal Care Aides	34,700	38,950	\$10–\$12	8,600	High School Diploma or Equivalent and Short-term On-the-job Training	Balanced
Pharmacists	7,740	9,420	\$53–\$63	460	Doctoral or Professional Degree	Balanced
Pharmacy Technicians	11,450	14,390	\$12–\$18	1,150	High School Diploma or Equivalent and Moderate-term On-the-job Training	Shortage
Physical Therapists	7,690	8,250	\$35–\$48	630	Doctoral or Professional Degree	Shortage
Physicians and Surgeons, All Other	14,440	16,370	\$29–\$100+	540	Doctoral or Professional Degree and Internship/Residency	Surplus
Receptionists and Information Clerks	17,060	31,460	\$11–\$16	4,660	High School Diploma or Equivalent and Short-term On-the-job Training	Balanced
Registered Nurses	86,780	94,090	\$28–\$38	6,650	Bachelor's Degree	Balanced

Sources: Cluster employment, Michigan employment, and Wage range: Occupational Employment Statistics, Michigan Bureau of Labor Market Information and Strategic Initiatives (2017); Annual Openings: Long-term Occupational Projections (2016–2026), Michigan Bureau of Labor Market Information and Strategic Initiatives; Typical Education and Training: Bureau of Labor Statistics; Michigan's Occupational Supply and Demand and the Talent Gap: Linskey, Evan. 2018. "An Analysis of Occupational Supply and Demand in the Michigan Labor Market." Michigan's Labor Market News, Vol. 74, Issue 10.



- Key Healthcare occupations ranging from *Personal care aides* to *Physicians and surgeons* show a variety of typical education and training requirements. *Home health aides* and *Personal care aides* only require short-term, on-the-job-training and are projected to grow by over 35 percent from 2016 to 2026.
- One occupation on the list shows a surplus in our talent gap analysis: *Physicians and surgeons*. This is largely due to the substantial number of medical schools within our state. Retaining this talent — rather than watching these individuals leave the state upon graduation — still proves difficult and falls beyond the scope of this measure.
- Many of these key occupations employ a large number of Michiganders. *Registered nurse* is the largest occupation in the state that requires beyond a high-school equivalency and shows large projected growth moving forward, as do most *Healthcare* occupations.
- Support occupations are extremely important in the Healthcare field. Someone looking to work in this fast-growing field who is not as interested in the Healthcare aspect could consider positions such as *Receptionists and information clerks*, *Maids and housekeeping cleaners*, and *Office clerks*.
- Apprenticeships fill the talent pipeline of several Healthcare occupations across the state. *Pharmacy technicians*, *Home health aides*, and *Dental assistants* are a few of the occupations represented with historic programs. Other occupations such as *Medical assistants* have been the focus of apprenticeships created in recent years.

FIGURE 4: HIGH-DEMAND OCCUPATIONS, MICHIGAN HEALTHCARE CLUSTER



Sources: Wages: Occupational Employment Statistics, Michigan Bureau of Labor Market Information and Strategic Initiatives; Projected Growth Rate: Long-term Occupational Projections (2016–2026), Michigan Bureau of Labor Market Information and Strategic Initiatives; Michigan’s Occupational Supply and Demand and the Talent Gap: Linskey, Evan. 2018. “An Analysis of Occupational Supply and Demand in the Michigan Labor Market.” Michigan’s Labor Market News, Vol. 74, Issue 10.

High-demand

This figure includes occupations that show a favorable mix of projected long-term job growth, projected annual job openings, and median wages. It does not reflect current hiring demand. Wages displayed are median wages for 2018. Circle size denotes average projected annual openings.

As mentioned previously, the *Registered nurse* occupation employs a massive number of workers and is projected to have a large number of openings moving forward. Several occupations on the graph stand out for having large projected growth rates through 2026. The line at 7 percent shows the expected average growth for all occupations over the projections period. Most occupations here are projected to grow at two to five times that rate. The median state wage in 2018 was \$18.08 an hour for all occupations. Many of the above occupations well surpass that number, with

those close to it such as *Dental assistants* (\$17.63) only typically requiring a postsecondary nondegree award, while others such as *Medical assistants* require even less. Some occupations, such as *Personal care aides*, stand out not only for having an extremely high projected growth rate, but also a large number of annual openings due in part to a large amount of turnover. Occupations in the Healthcare cluster can provide skills that (when supplemented with future training) can lead to career advancement.

Healthcare Career Pathway *Associate degree can also qualify for these positions.

Home Health Aide \$23,260 High School Diploma	Nursing Assistant \$29,710 Certificate* Medical Assistant \$31,900 Certificate*	Licensed Practical Nurse \$48,500 Certificate*	Registered Nurse \$70,590 Bachelor's Degree* State License	Nurse Practitioner \$103,210 Master's Degree State License Physician Assistant \$108,200 Master's Degree State License
--	--	---	--	---

Source: Occupational Employment Statistics (2018 Statewide Median Annual Wage), Michigan Bureau of Labor Market Information and Strategic Initiatives

Career pathways identify the career opportunities in an industry, entry-level to advanced, and show how an individual can grow his/her career in the industry.

"A Practical Guide to Developing Career Pathways," May 2018, Talent and Economic Development of Michigan

High School Diploma or Equivalent and Short-term Training

Community Health Workers
 Home Health Aides
 Maids and Housekeeping Cleaners
 Personal Care Aides
 Receptionists and Information Clerks

Many occupations in the Healthcare cluster require education and training beyond a high school diploma, but those looking to enter the workforce in this cluster without long-term training still have plenty of options. *Home health aides* and *Personal care aides* typically require short-term training but are projected to boom in the coming years. These five occupations have median wages ranging from \$11 to \$14 an hour.

Postsecondary Certificate or Moderate-term Training

Licensed Practical and Licensed Vocational Nurses
 Massage Therapists
 Medical Assistants
 Medical Records and Health Information Technicians
 Nursing Assistants

The Healthcare cluster employed nearly 675,000 people in 2017, and includes many occupations that require one year or less of training. In 2017, the state had roughly 13,200 *Licensed practical and licensed vocational nurses* (LPNs), with projected annual openings above 1,400. This position does not require extensive training, is hiring, and can pay more than \$20 an hour. These five occupations have median wages ranging from \$17 to \$23 an hour.

Associate Degree/Long-term Training/ Apprenticeships

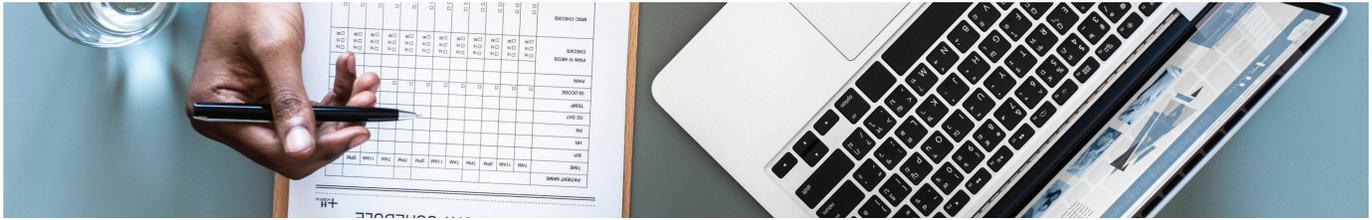
Dental Hygienists
 Diagnostic Medical Sonographers
 Physical Therapist Assistants
 Radiologic Technologists
 Respiratory Therapists

The Healthcare cluster has a wide array of occupations that pay well, have high projected growth, and do not typically require a bachelor's degree. For example, *Physical therapist assistants* have a projected 30.7 percent growth between 2016 and 2026. The state is projected to need almost 1,200 more *Physical therapist assistants* in 2026 than it had in 2016. These five occupations have median wages ranging from \$25 to \$29 an hour.

Bachelor's Degree or Higher

Healthcare Social Workers
 Health Specialties Teachers, Postsecondary
 Physical Therapists
 Physician Assistants
 Registered Nurses

This level of education and training includes many occupations from the Healthcare practitioners and technical occupations major group such as *Nurse practitioners* and *Physicians and surgeons*, but also includes some occupations from social service or education backgrounds. Among these occupations, the state has nearly 94,000 *Registered nurses* employed. These five occupations have median wages ranging from \$26 to \$50 an hour.



Real-time Demand for Healthcare Employment

Because of the large share of Healthcare jobs in Michigan, a high number of job advertisements are posted for jobs in the cluster. With employment numbers rising in recent years, job ads are expected to do the same.

Many of the key Healthcare occupations have a large number of job postings including *Registered nurses*, *Physical therapists*, and *Medical assistants*. Key Healthcare occupations are posted for an average of roughly 29 days, directly in line with the statewide average for all occupations. Large occupations such as *Registered nurses* and *Medical assistants* are both posted for an average of nearly 30 days, while more specialized occupations such as *Psychiatrist* or *Physicians and surgeons* are typically posted for longer durations. This suggests that they may be more difficult jobs to fill.

Source: The Conference Board, Help Wanted Online® (HWOL)

Top skills in postings for key occupations include:

Pediatrics
 Critical care
 Geriatrics
 Quality assurance
 Patient electronic medical record

Other key abilities, knowledge, and skills listed reveal a heavy emphasis on bedside manner skills, education and training knowledge, an understanding of psychology and mental health, and the importance of software and the skill to learn new technologies.

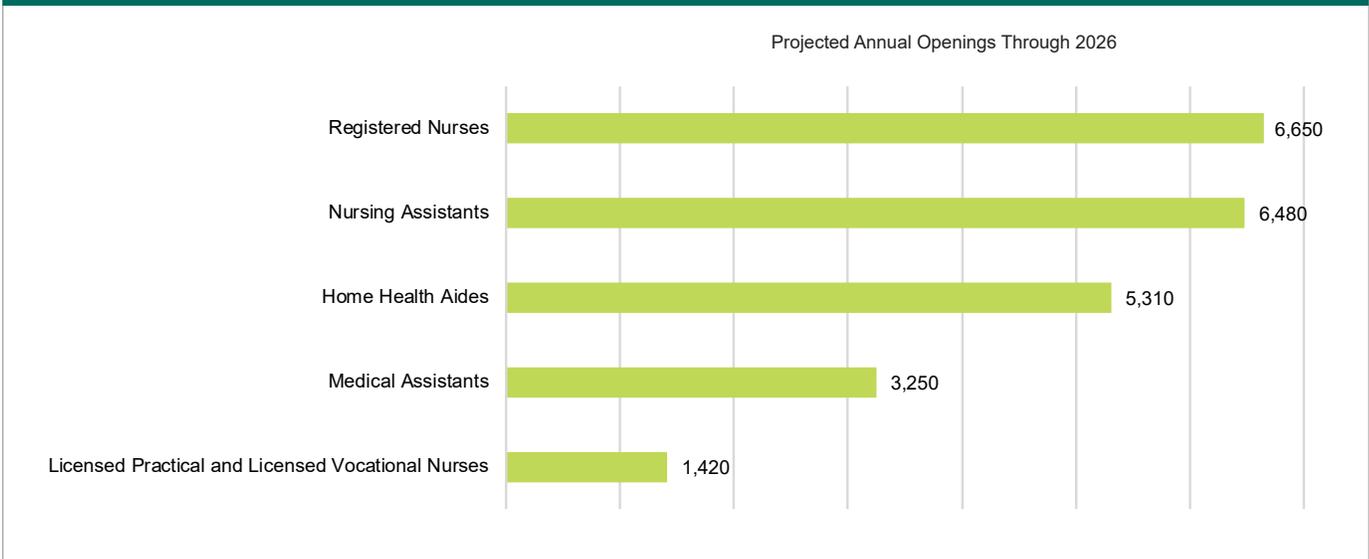
Real-time demand is measured as the number of job advertisements posted online for an occupation.

Healthcare Employment Projections

Projections do not exist for clusters, but projections through 2026 do exist for many industries and occupations that make up the industry.

- Statewide, all occupations are projected to grow an average of 7.0 percent from 2016 to 2026. *Healthcare practitioners and technical occupations* are projected to double this growth rate at 14.2 percent, adding more than 40,000 jobs through 2026. *Healthcare support occupations* are projected to grow more than triple the statewide rate at 22.7 percent, which is by far the largest projected growth for any major group.
- *Healthcare practitioners* and *Healthcare support occupations* are each projected to have around 20,000 annual openings over the projected period. These openings come from a combination of labor force exits, transfers to occupations outside of the groups such as management or education, and openings due to growth in the group.
- Among Healthcare practitioners, many of the projected top-growing occupations typically require graduate educations. In fact, seven of the top 10 occupations in terms of percentage growth require it, including *Physician assistant*, *Nurse practitioners*, and *Physical therapists*.
- Many projected high-numeric growth occupations exist in the Healthcare support group but do not require large amounts of training. For example, *Home health aides* typically only need short-term training and are projected to have employment levels nearly 13,000 higher in 2026 than in 2016. Other occupations such as *Medical assistants*, *Nursing assistants*, and *Dental assistants* are projected to have large numeric change and typically require a postsecondary non-degree award.

FIGURE 5: OCCUPATIONS WITH THE MOST PROJECTED ANNUAL OPENINGS THROUGH 2026, MICHIGAN HEALTHCARE CLUSTER



Source: Industry and Occupational Employment Projections (2016–2026), Michigan Bureau of Labor Market Information and Strategic Initiatives

FIGURE 6: OCCUPATIONS WITH THE MOST PROJECTED PERCENT GROWTH THROUGH 2026, MICHIGAN HEALTHCARE CLUSTER

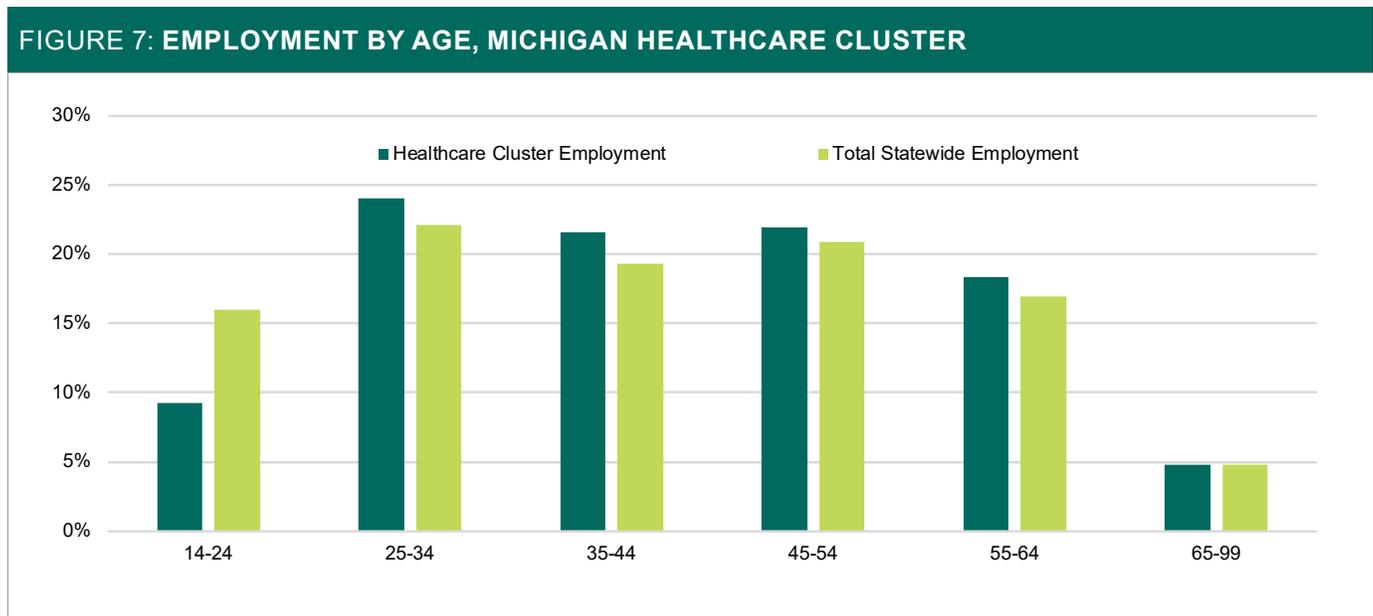


Source: Industry and Occupational Employment Projections (2016–2026), Michigan Bureau of Labor Market Information and Strategic Initiatives

- Healthcare-related industries also often show high projected growth. This makes sense with the close connection between Healthcare industries and occupations. Many Healthcare occupations fall almost entirely within Healthcare industries. This is not true for all clusters. For example, some types of engineers work in the Energy cluster, but they also may work in the Construction or Manufacturing clusters or fall entirely outside of the cluster designation.
- The *Ambulatory (outpatient) healthcare services* industry is projected to grow more than 30 percent over the projected period, potentially adding 62,000 more jobs through 2026.
- *Nursing and residential care facilities* are projected to add nearly 17,000 more jobs with a growth rate of 15.8 percent to bring total employment in the industry up to 123,520.

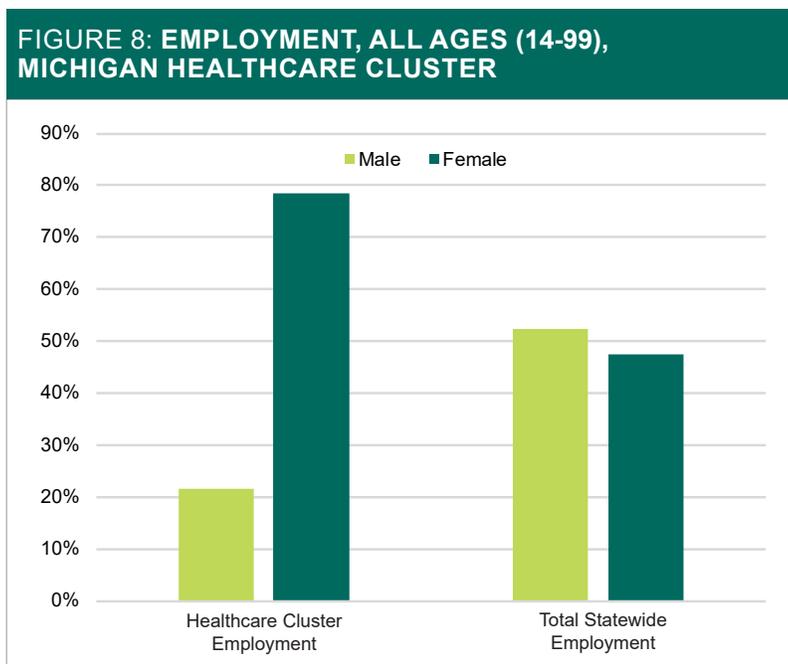
Healthcare Workforce Demographics

Demographic and educational attainment information is useful in identifying workforce characteristics and evaluating potential workforce disparities. Gaps in education, skills, or training may result in impediments to economic growth if left unresolved. Maintaining the employment of a young workforce may require employers to adapt to the interests those workers value. The following figures display characteristics of the Healthcare workforce in Michigan.



Source: Longitudinal Employer-Household Dynamics program, U.S. Census Bureau

Healthcare by age is very nearly in line with the overall statewide numbers. The percent of workers older than 65 years is exactly the same as the statewide economy, 4.8 percent. These workers likely will retire soon and need to be replaced. Youth are also underrepresented in the group due to the higher levels of typical education and training required in the cluster.

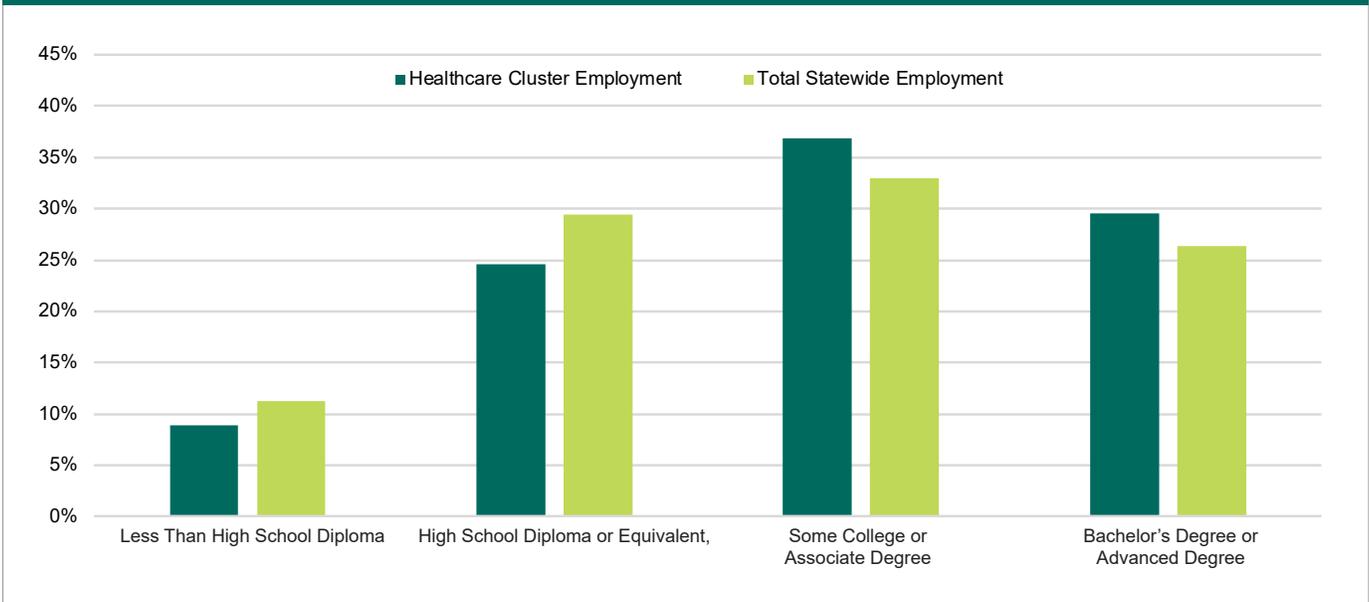


Nearly four in five employees are female in the Healthcare cluster. Healthcare continues to be heavily reliant on female workers (78.4 percent). Nearly four in five employees are female. Statewide, females make up slightly less than half of total employment (47.5 percent). Understanding the sex and age demographics of the Healthcare cluster can be crucial to understanding present and future issues within the cluster as well as areas of the population to target moving forward.

Source: Longitudinal Employer-Household Dynamics program, U.S. Census Bureau



FIGURE 9: EMPLOYMENT BY EDUCATION, MICHIGAN HEALTHCARE CLUSTER



Source: Longitudinal Employer-Household Dynamics program, U.S. Census Bureau

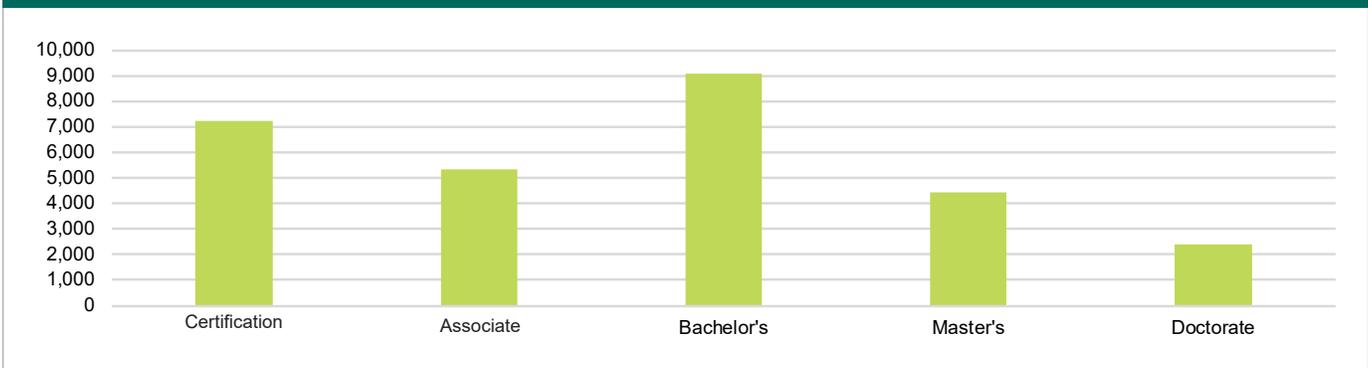
The level of educational attainment in the Healthcare cluster is typically higher than the overall statewide level. Healthcare can be a highly specialized cluster requiring training, especially at the highest level, due to the vast number requiring advanced degrees. Many of the occupations requiring low levels of training have high levels of turnover.

Healthcare Talent Pipeline

Data for education program completers of instructional programs is available from the National Center for Education Statistics. This data can be used to estimate ever-changing levels of supply for some occupations in the labor market. Total educational program completers are counted for programs that are known to lead students into Healthcare-related occupations. A number of factors can shift completers, such as changing typical requirements for an occupation or an increase in students during periods of high unemployment.

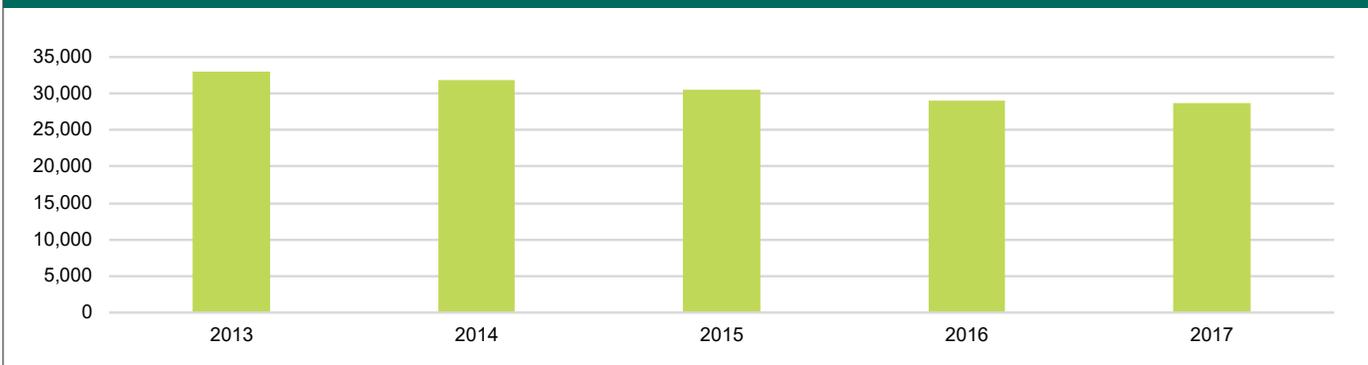
- Though the total number of completers has declined over recent years, this appears to be a return to normal levels from a spike in enrollment that happened during the Great Recession. In 2017, health-related programs numbered 28,720, which is higher than 2008 (26,380).
- The more notable trend may be the shift from lower levels of education to higher levels. In 2013, 36.6 percent of the completers were earning some sort of certificate. In 2017, this number dropped to only 25.4 percent of all completers earning certificates. This may in part be due to the clear trend between higher education and students trying to prepare themselves for future economic downturns. It could also be in part due to some of the 12,057 certificate completers from 2013 following a career ladder and completing bachelor's or even master's by 2017 to advance their careers.
- A shift toward bachelor's degrees may also show the shift toward preferring bachelor's degrees when becoming a registered nurse. More than half of completers under the *Registered nursing, Nursing administration, Nursing research, and Clinical nursing instructional programs* completed a bachelor's degree in 2017. In 2013, less than 45 percent of individuals in these programs were getting bachelor's degrees. Roughly 38 percent of all health-related bachelor's degrees in 2017 were from these registered nurse programs. Meanwhile, completers receiving associate degrees have dropped from 44 percent to 35 percent of all completers.

FIGURE 10: HEALTHCARE-RELATED PROGRAM COMPLETERS BY AWARD LEVEL, MICHIGAN, 2017



Source: National Center for Education Statistics (NCES), Integrated Postsecondary Education Data System (IPEDS)

FIGURE 11: HEALTH-RELATED PROGRAM COMPLETERS TREND, MICHIGAN



Source: National Center for Education Statistics (NCES), Integrated Postsecondary Education Data System (IPEDS)

Conclusion

The Healthcare cluster is a large part of Michigan's economy, employing nearly 16 percent of the total employees in the state. Areas of employment in the cluster range from *Hospitals* to *Manufacturing*. Projections for the Healthcare industry are among the highest for all industries in the state going forward. Many industries and occupations are doubling or tripling the statewide growth rate of 7 percent.

Strengths

High Demand

Healthcare has become ingrained as a cornerstone of the service economy and the economy as a whole, and it will only become more important and prevalent moving forward. As the state population continues to age, demand will rise. Technological advances and new research also will increase the demand for and importance of quality healthcare.

Educational Pipelines

Most career pathways are relatively well-understood in the Healthcare cluster. Lines between degrees and occupations tend to be clear and consistent. Promotions and areas for growth such as moving from professional to educator are also relatively well-defined throughout the cluster.

Local and Personal

The cluster has a unique advantage in how it is distributed throughout the state. If someone is hoping to find work in their community, chances are healthcare jobs exist locally. Whether community health centers or urgent care centers, some type of healthcare employment appears across the state.

Well-Understood and Concentrated System

The Healthcare cluster is one of the more well-known and understood clusters in the economy. Data is often readily available on a variety of subjects related to the cluster, and many of the top occupations are concentrated in the cluster. Some areas of the economy, such as *Information technology*, can be much more widespread and difficult to pin down.

Challenges

Aging Population

The aging population will put a strain on the areas of healthcare that tend to be most focused on older populations, such as extended-care facilities or oncology. It also will cause issues as the most experienced employees in the field retire in larger numbers.

Educational Capacity

Career and technical education programs, certificate programs, colleges, and universities have limited capacity to train, and increasing size often takes years of investment and planning.

Reliance on Low-Paying Jobs

Some of the fastest-growing occupations in the field make well below the statewide median wage and may need to offer other benefits such as free training or room for growth to attract new employees. Retaining these workers will also prove challenging while balancing the needs of employees with a potential rising cost of healthcare.

Reliance on Extremely High-Paying Jobs

On the other end of the career spectrum is a reliance on extremely specialized occupations requiring decades of training. For some specializations, there may be years between an increase in demand and a sufficient supply to meet it. Helping young students realize that they want to go to medical school may not bear fruit for the labor market until they are nearly 30, after years of university, medical school, residency, and potentially other specializations in the form of fellowships. Those who go through this much training are then rewarded with extremely high pay and the ability to negotiate many other aspects of their job. Attracting these highly trained professionals to all corners of the state may prove to be difficult.



EVAN LINSKEY
ECONOMIC ANALYST



STATE OF MICHIGAN

Department of Technology, Management and Budget

Bureau of Labor Market Information and Strategic Initiatives

Detroit Office

Cadillac Place
3032 West Grand Boulevard
Suite 9-150
Detroit, Michigan 48202
(313) 456-3100

Lansing Office

Victor Office Building, Floor 5
201 North Washington Square
Lansing, Michigan 48933
(517) 335-2472