



MICHIGAN HEALTHCARE

INDUSTRY CLUSTER WORKFORCE ANALYSIS



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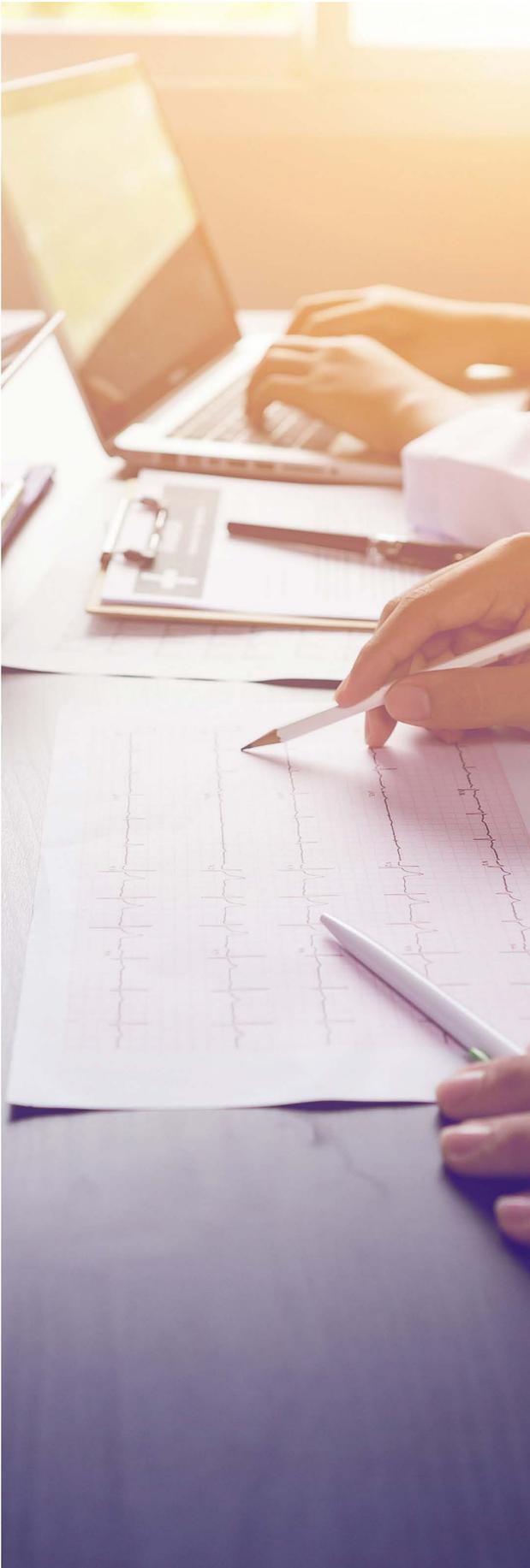
TABLE OF CONTENTS

4	Key Findings
5	Introduction
6	Employment and Wages
8	Subclusters
10	Key Occupations
13	Career Pathway
15	Apprenticeships
16	Real-Time Demand
20	Employment Projections
21	Workforce Demographics
25	Talent Pipeline
26	Conclusion

A teal stethoscope is positioned diagonally across the page, with the chest piece at the bottom center and the earpieces at the top right. The background is a solid light teal color.

ABOUT THIS REPORT

This report is the product of a partnership between the Michigan Center for Data and Analytics and the Michigan Department of Labor and Economic Opportunity. It is designed to explore the Healthcare industry cluster in Michigan through a variety of data sources, including key occupations, education and training requirements, real-time online job ad demand, labor force projections, workforce demographics, the talent pipeline and more. The intention of this report is to support workforce development across the state and to highlight the position of Healthcare in Michigan.



Key Findings

- Over the past decade, employment in Michigan's Healthcare cluster has grown from around 623,000 to 667,000. In 2021, just under one in six private jobs in Michigan were in the Healthcare cluster. The cluster displayed resiliency in employment during the early parts of the COVID-19 pandemic, dropping by just under 5 percent. Although Healthcare employment totals were less impacted by the pandemic, nearly every other aspect of the cluster was heavily affected.
- Key occupations in the Healthcare cluster cover the full spectrum of typical education and training. While some occupations have lower barriers to entry, requiring only a high school diploma and training, many require master's or doctoral-level degrees.
- Several occupations in the Healthcare cluster are among the fastest growing in the state and the nation. For example, at nearly 51 percent projected growth, *Nurse practitioners* are projected to outpace statewide growth of all occupations (8.8 percent) by more than five times.
- Regional labor economies show consistent reliance on the Healthcare sector. Healthcare employment in Michigan's prosperity regions range from 11.7 percent of the Northeast's total regional employment up to 20.1 percent in East Central Michigan.
- The cluster faces a variety of strengths and challenges, including high demand and the need to bolster education and training pipelines, as employers in the sector prepare for the future.



Introduction

An **industry cluster** is a strong concentration of related industries in one location.

These clusters consist of related employers, suppliers, and support institutions in a product or service field. Industry clusters that are heavily prevalent in a particular region fuel the regional economy, generate payrolls, and create innovation by leveraging the knowledge and resources of all involved.

In Michigan, the Healthcare cluster has long been vital to the statewide economy and labor force. With a history of healthcare access for workers and recent pushes for increased coverage, Michigan has 95 percent health insurance coverage according to the latest data from the U.S. Census Bureau. The cluster is also extremely geographically diverse with opportunities across the state as well as across various educational and training levels.

The Healthcare cluster consists of nine healthcare-related subclusters across the economic spectrum ranging from *Hospitals* to *Social services* to *Manufacturing* and more.

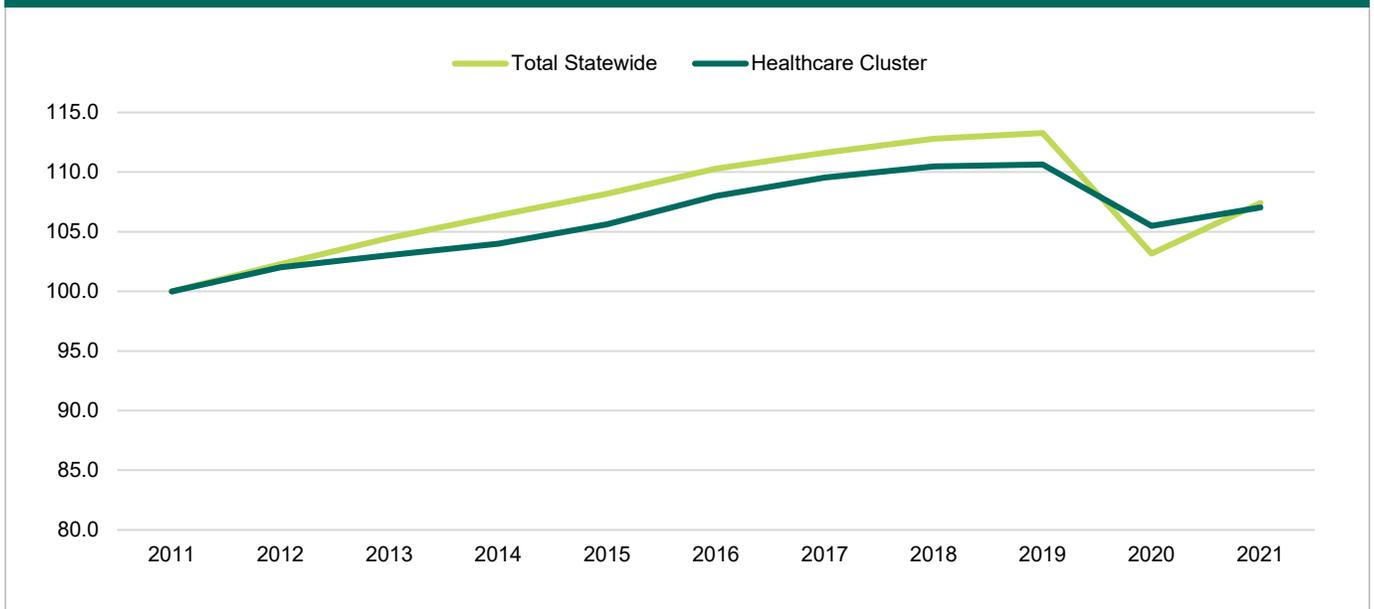
The Healthcare cluster consists of nine subclusters:

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



Employment and Wages

FIGURE 1: EMPLOYMENT INDEX, MICHIGAN HEALTHCARE CLUSTER (INDEX YEAR: 2011)

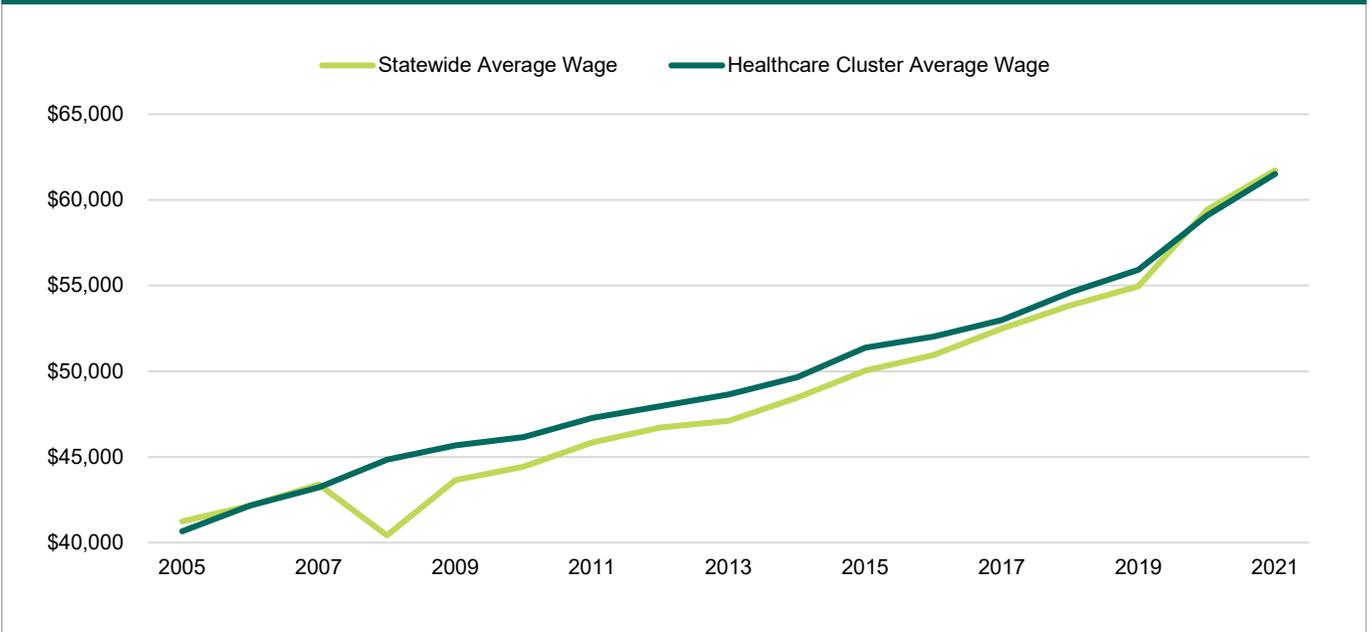


Source: Quarterly Census of Employment and Wages, Michigan Center for Data and Analytics

Figure 1 displays both total statewide employment as well as employment in the Healthcare cluster indexed to 2011. Over the past decade, employment in the cluster has grown from roughly 623,000 to 667,000. The cluster displayed resiliency in employment during the early parts of the COVID-19 pandemic. Between 2019 and 2020, employment in the cluster dropped by just over 32,000 before recovering slightly in 2021. Total employment recovered slightly in 2021. The Healthcare cluster is the largest of the eight clusters with over 80,000 more jobs than the second largest cluster (586,000 jobs in Manufacturing). With 667,000 jobs, just under one in six private jobs in Michigan are in the Healthcare cluster.



FIGURE 2: NOMINAL WAGE*, MICHIGAN HEALTHCARE CLUSTER



Source: Quarterly Census of Employment and Wages, Michigan Center for Data and Analytics
 *Nominal wages are not adjusted for inflation.

Since the Great Recession, Healthcare wages have mostly been above statewide total average wages with the gap narrowing in recent years. The average salary in Healthcare is \$61,500, which is closely aligned with the statewide average of \$61,700. Figure 2 shows both cluster and statewide average annual earnings back to 2005. During the Great Recession, Healthcare wages outpaced statewide wages by as much as \$4,400. This gap closed during the ensuing recovery. In 2019, Healthcare wages were about \$1,000 higher than the average statewide wage. These fell behind in 2020 as statewide wages rose roughly \$4,500 compared to Healthcare wages which only rose \$3,200.

Subclusters

FIGURE 3: SUBCLUSTER EMPLOYMENT DISTRIBUTION, MICHIGAN HEALTHCARE CLUSTER, 2021



Source: Quarterly Census of Employment and Wages, Michigan Center for Data and Analytics

Biotechnology, 0.2%

Hospitals

Hospitals

Of the roughly 667,000 individuals in Michigan’s Healthcare cluster, nearly 244,000 (37 percent) work within the *Hospitals* subcluster. This could be individuals working physically in a hospital or for a hospital system. Unsurprisingly, the largest occupation in this subcluster is *Registered nurses* with more than 72,000 employed, totaling just under 30 percent of employment in this subcluster. Wages across the Healthcare subclusters vary greatly, but average wages are just over \$68,600 within this subcluster. This is slightly higher than the average wage for the entire cluster, which is \$61,500.

Offices of Health Specialists

Offices of Dentists

Offices of Other Healthcare Practitioners

Offices of Physicians

The second-largest subcluster in Healthcare is *Offices of health specialists*, with just over 133,000 jobs. The subcluster experienced losses in employment during 2020 but rebounded quickly in 2021. Currently, *Offices of health specialists* only sits at about 2,000 fewer jobs than 2019 pre-pandemic employment levels. Average annual wages in this subcluster are above \$75,000. This subcluster consists of below-average earners like *Home health and personal care aides* and specialists like *Dentists* or *Physicians*, which are among the highest earners in Healthcare overall.

Care Facilities

Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly

Nursing Care Facilities (Skilled Nursing)

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

Care facilities has just under 89,000 jobs statewide, accounting for more than 13 percent of employment in the Healthcare cluster. Wages in this subcluster are relatively low with an average wage of nearly \$37,700 in 2021. This is the second-lowest average wage among the Healthcare subclusters.

Community and Social Services

Individual and Family Services

Vocational Rehabilitation Services

Community and social services contains 9.3 percent of Healthcare employment, nearly 62,000 jobs. These industries cover a wide range of fields including crisis intervention centers, hotline centers, and other self-help organizations. Average wages in this subcluster are the lowest at \$35,500 annually.

Pharmacy and Health Retail and Wholesale

All Other Health and Personal Care Stores

Drug and Druggist Sundries Merchant Wholesalers

Medical, Dental, and Hospital Equipment Merchants and Wholesalers

Ophthalmic Goods Merchant Wholesalers

Optical Goods Stores

Pharmacies and Drug Stores

This subcluster covers several related industries totaling nearly 43,000 jobs in 2021. This number is up slightly from 2011 when the state had just over 38,000 jobs across these industries. The subcluster has an average wage of roughly \$67,300, although wages vary greatly with wholesale industries paying more than store-related industries.

Clinician and Ambulatory Health Care

Medical and Diagnostic Laboratories

Other Ambulatory Health Care Services

Outpatient Care Centers

At \$61,000, average wages in *Clinician and ambulatory health care* are very near the cluster average. This subcluster has more than 36,500 jobs with nearly 22,300 of those in *Outpatient care centers* alone.

Home Health Care

Home Health Care Services

Home health care makes up 5.6 percent of Healthcare employment in Michigan—more than 37,200 jobs. The large majority of this employment comes from *Home health and personal care aides* (21,900 employed). This subcluster has an average wage of about \$40,000 making it the third lowest-paying subcluster.

Manufacturing

Medical Equipment and Supplies Manufacturing

Pharmaceutical and Medicine Manufacturing

The *Manufacturing* subcluster is the second-smallest within Healthcare. However, it is the second-highest paying with an average annual wage in 2021 of nearly \$92,000.

Biotechnology

Research and Development in Biotechnology (except Nanobiotechnology)

The highest-paying subcluster within Healthcare in Michigan is also the smallest: *Biotechnology*. The *Biotechnology* subcluster did not emerge in its current form until industry definitions shifted around 2017. Currently, the subcluster only holds about 1,200 jobs, although this has been increasing every year. The subcluster also has the highest average wages at more than \$136,500, more than double the cluster's average wage.

Key Occupations

Occupational analysis is important to understanding an industry cluster. Key occupations are chosen by a favorable mix of criteria that include the occupation's share of the cluster's total employment, the concentration within the cluster, and the projected outlook for that occupation. Due to the occupations having large volumes within the cluster, they are generally representative of the expected wages, education, and skills within the industry cluster.

- Key occupations in the Healthcare cluster cover the full spectrum of typical education and training. While some occupations have lower barriers to entry, requiring only a high school diploma and on-the-job training, several also require master's or doctoral-level degrees.
- With more than 100,000 *Registered nurses* (RNs) in the state, around one in 40 (2.5 percent) jobs in the state are RNs. This occupation is the third largest in the state only slightly trailing *Retail salespersons* and *Fast food and counter workers*. RNs have opportunities outside of Healthcare with positions in education, government, insurance, and other industries.
- Many key Healthcare occupations are almost entirely captured within the Healthcare cluster in terms of employment. This proportion can be seen by comparing the Cluster Employment column with the Michigan Employment column. Some occupations, such as *Maids and housekeeping cleaners*, are spread across numerous industries while other occupations, such as *Physician assistants*, are almost entirely within the cluster.



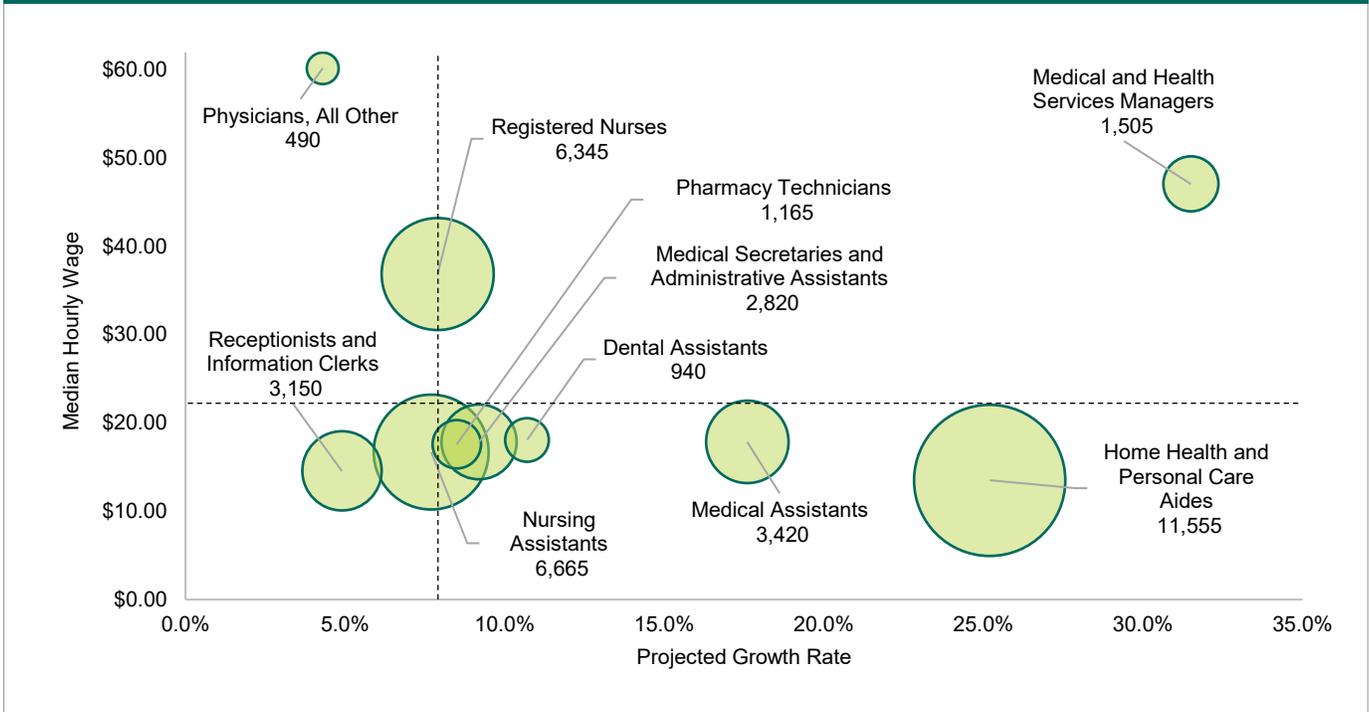
FIGURE 4: KEY OCCUPATIONS, MICHIGAN HEALTHCARE CLUSTER, 2021

KEY OCCUPATION	CLUSTER EMP.	MICHIGAN EMP.	CLUSTER WAGE RANGE (HOURLY)	ANNUAL OPENINGS	TYPICAL EDUCATION AND TRAINING OJT: ON-THE-JOB TRAINING
Registered Nurses	92,470	102,480	\$30–\$38	6,345	Bachelor's Degree
Home Health and Personal Care Aides	71,100	79,170	\$11–\$14	11,555	High School Diploma or Equivalent and Short-term OJT
Nursing Assistants	36,440	41,200	\$14–\$18	6,665	Postsecondary Nondegree Award
Medical Assistants	22,580	23,650	\$14–\$18	3,420	Postsecondary Nondegree Award
Medical Secretaries and Administrative Assistants	19,960	21,110	\$14–\$18	2,820	High School Diploma or Equivalent and Moderate-term OJT
Receptionists and Information Clerks	14,410	26,540	\$14–\$18	3,150	High School Diploma or Equivalent and Short-term OJT
Pharmacy Technicians	11,460	15,520	\$14–\$18	1,165	High School Diploma or Equivalent and Moderate-term OJT
Dental Assistants	10,940	11,150	\$14–\$23	940	Postsecondary Nondegree Award
Physicians, All Other	10,730	11,820	\$29–\$100+	490	Doctoral or Professional Degree and Internship/Residency
Medical and Health Services Managers	10,670	12,830	\$37–\$61	1,505	Bachelor's Degree
Pharmacists	8,710	10,170	\$48–\$63	355	Doctoral or Professional Degree
Clinical Laboratory Technologists and Technicians	8,360	9,250	\$18–\$31	885	Bachelor's Degree
Licensed Practical and Licensed Vocational Nurses	8,350	10,680	\$23–\$29	1,115	Postsecondary Nondegree Award
Dental Hygienists	7,680	7,750	\$29–\$37	505	Associate Degree
Physical Therapists	7,250	8,000	\$36–\$48	485	Doctoral or Professional Degree
Maids and Housekeeping Cleaners	6,500	16,750	\$14–\$15	3,640	No Formal Education Credential and Short-term OJT
Billing and Posting Clerks	6,430	11,430	\$18–\$23	1,470	High School Diploma or Equivalent and Moderate-term OJT
Radiologic Technologists and Technicians	6,120	6,300	\$23–\$30	555	Associate Degree
Substance, Behavioral, and Mental Health Counselors	5,860	8,560	\$19–\$29	1,025	Bachelor's Degree
Nurse Practitioners	5,630	5,830	\$48–\$60	595	Master's Degree
Social and Human Service Assistants	4,940	9,960	\$14–\$18	1,490	High School Diploma or Equivalent and Short-term OJT
Physician Assistants	4,860	5,010	\$48–\$61	435	Master's Degree
Healthcare Social Workers	4,740	5,530	\$23–\$31	640	Master's Degree and Internship/Residency
Respiratory Therapists	4,620	4,820	\$28–\$30	345	Associate Degree
Child, Family, and School Social Workers	4,380	13,530	\$18–\$23	1,420	Bachelor's Degree

Source: Cluster employment, Michigan employment, and Wage range: Occupational Employment and Wage Statistics, Michigan Center for Data and Analytics (2021); Annual Openings: 2020–2030 Long-term Occupational Projections, Michigan Center for Data and Analytics; Typical Education and Training: U.S. Bureau of Labor Statistics

Note: Cluster employment is the total count of the occupation within the defined industry cluster, while Michigan employment is the total count of that occupation in the state across all industries.

FIGURE 5: KEY OCCUPATIONS, MICHIGAN HEALTHCARE CLUSTER, 2021



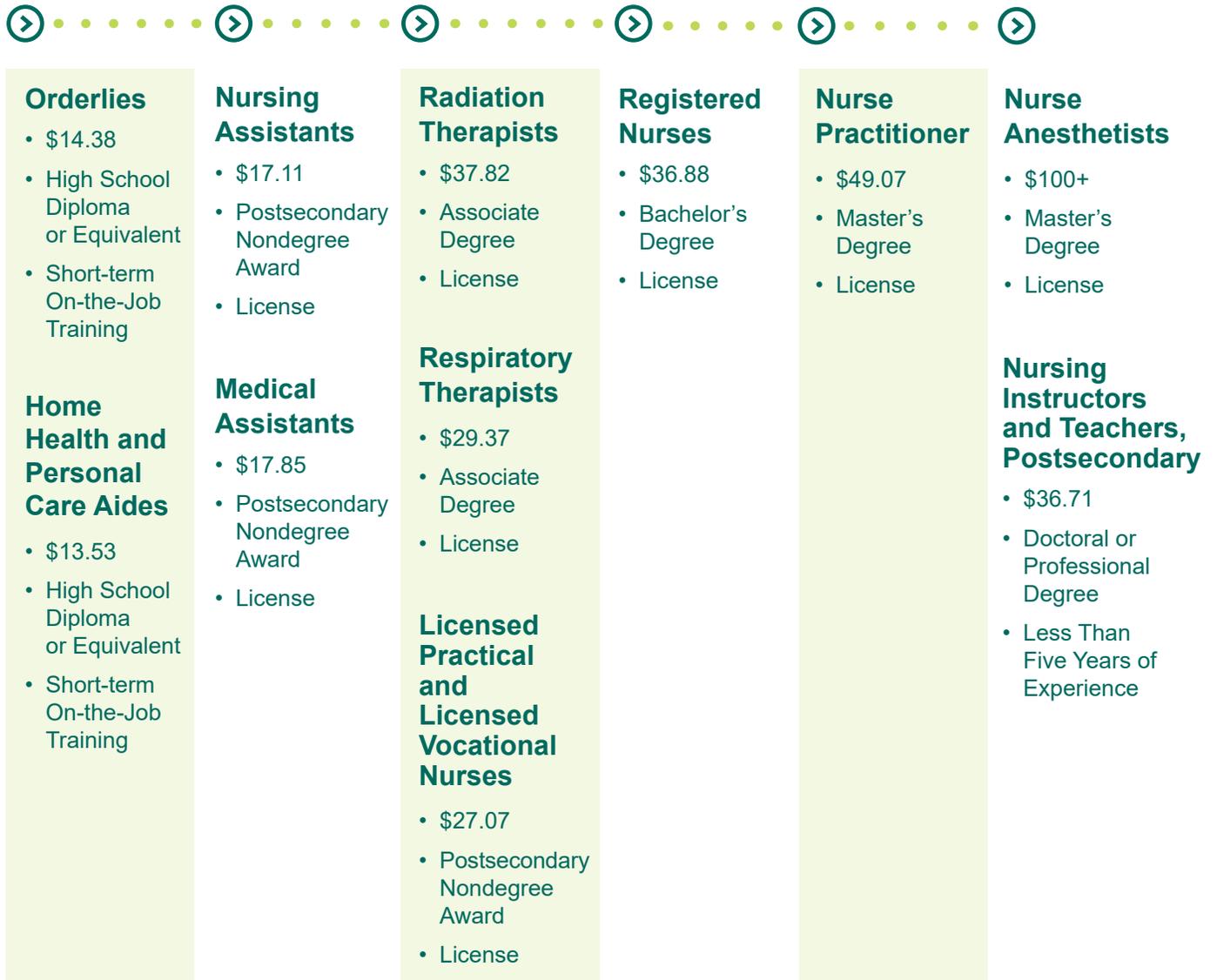
Source: 2021 Occupational Employment and Wage Statistics, Michigan Center for Data and Analytics (Wages); 2020–2030 Long-term Occupational Projections, Michigan Center for Data and Analytics (Projected Growth Rate and Annual Openings)

Several key occupations within the Healthcare cluster are displayed in Figure 5 and show a mix of projected long-term growth, projected annual openings, and cluster median wages. The circle sizes are determined by projected annual openings. The lines at 8.8 percent and \$21.73 indicate statewide projected employment growth through 2030 and the statewide median wage from 2021.

The key occupations show a mix of long-term growth rates with many exceeding the state’s projected growth rate of 8.8 percent. With a base year of 2020, many occupations show projected employment growth that is in part due to recovery from an early pandemic starting point. Healthcare is generally an exception, as the early stages of the pandemic caused relatively fewer job losses in this cluster than other industries. Both *Home health and personal care aides* and *Medical and health services managers* have projected growth rates of roughly three times the state’s projected growth. Many occupations with slightly below-average projected growth are still slated to have a large number of openings, including *Registered nurses*, which are projected to have an annual average of more than 6,300 openings.

The cluster shows a mixture of median hourly incomes by occupation with wages generally correlated with further postsecondary education and training. Some occupations, such as *Registered nurses*, earn wages over \$15 per hour greater than the statewide median. Other occupations that are large within the cluster, such as *Home health and personal care aides*, earn median hourly wages that are well below the statewide hourly average.

Potential Healthcare Career Pathway



Pathway Source: <https://careerwise.minnstate.edu/careers/transportation-systems-infrastructure-pathway.html>

Wage Range: 2021 Occupational Employment and Wage Statistics, Michigan Center for Data and Analytics

Typical Education and Training: U.S. Bureau of Labor Statistics

High School Diploma or Equivalent and Short-term Training

Customer Service Representatives
Janitors and Cleaners, Except Maids and Housekeeping Cleaners
Maids and Housekeeping Cleaners
Office Clerks, General
Receptionists and Information Clerks

Individuals seeking employment in the Michigan Healthcare cluster with a high school degree or equivalent and/or short-term training have a number of occupational opportunities. These occupations provide great options for those interested in working in Healthcare without having to obtain further postsecondary education or longer-term training and can offer a wide array of wages. Many of these occupations are not unique to the Healthcare cluster. They could be an opportunity for someone who is working in another industry to make the switch to Healthcare-related work. Combined, there are nearly 27,000 employees in the Michigan Healthcare cluster who are either *Receptionists and information clerks* or *Office clerks, general*.

Postsecondary Certificate or Moderate-term Training

Dental Assistants
Medical Assistants
Medical Secretaries and Administrative Assistants
Nursing Assistants
Pharmacy Technicians

Many occupations within Michigan's Healthcare cluster require a high school diploma and moderate-term training or a postsecondary certificate. Individuals looking for advanced wages without obtaining a postsecondary degree or completing an apprenticeship may find these occupations a valuable opportunity to advance their career. The highlighted occupations in this category all have more than 10,000 employees working in Healthcare statewide.

Associate Degree or Long-term Training or Apprenticeships

Dental Hygienists
Opticians, Dispensing
Physical Therapist Assistants
Radiologic Technologists and Technicians
Respiratory Therapists

Completing an associate degree, apprenticeship, or long-term training (longer than 12 months) can provide several pathways to occupations that often pay above the statewide median hourly wage of \$21.73. Most of the occupations highlighted in this tier are placed here due to their associate degree requirements, although the cluster also has a number of occupations that can be reached with long-term training. The first three occupations in this list all have median wages above \$29.00.

Bachelor's Degree or Higher

Medical and Health Services Managers
Nurse Practitioners
Pharmacists
Physical Therapists
Registered Nurses

Occupations in this section require a bachelor's degree and many require post-graduate education as well. Many of these jobs in this category also require years of experience, additional training, and in some instances, internships or residencies. A wide variety of occupations appear in this education and training group for the Michigan Healthcare cluster, from managers to several types of nurses. *Registered nurses* are one of the largest occupations in the state that require postsecondary education, with more than 92,000 in the Healthcare cluster alone.



Apprenticeships

In 2021, the Healthcare cluster was home to more than 1,500 active registered apprentices across Michigan. Just over 49 percent of these apprentices were in *Nursing care facilities (skilled nursing)* while another 33.2 percent were in *Pharmacies and drug stores*. Women are extremely well represented in the cluster, accounting for 72.4 percent of active apprentices. This is compared to the statewide share, where women make up 11.6 percent of all apprentices. There was also an above-average share of Healthcare-related apprentices among people of color, while veterans were underrepresented. South Central Michigan had the largest share of active apprentices in the cluster at 52.4 percent. This was followed by the Detroit Metro region at 40.1 percent.

Among new registered apprentices in Healthcare, participation has varied greatly. These changes are partially due to the creation and elimination of programs. From 2009 to 2013 and 2015 to 2017 there were under 100 new apprentices each year. However, 2014 saw nearly 700 new apprentices and 2018 saw over 1,600. In 2021, there were more than 700 new apprentices. From 2008 to 2019, the number of Healthcare apprenticeship completers was less than 100, on average. In 2019 there was a large spike to 588 completers and in 2021 there were 528.

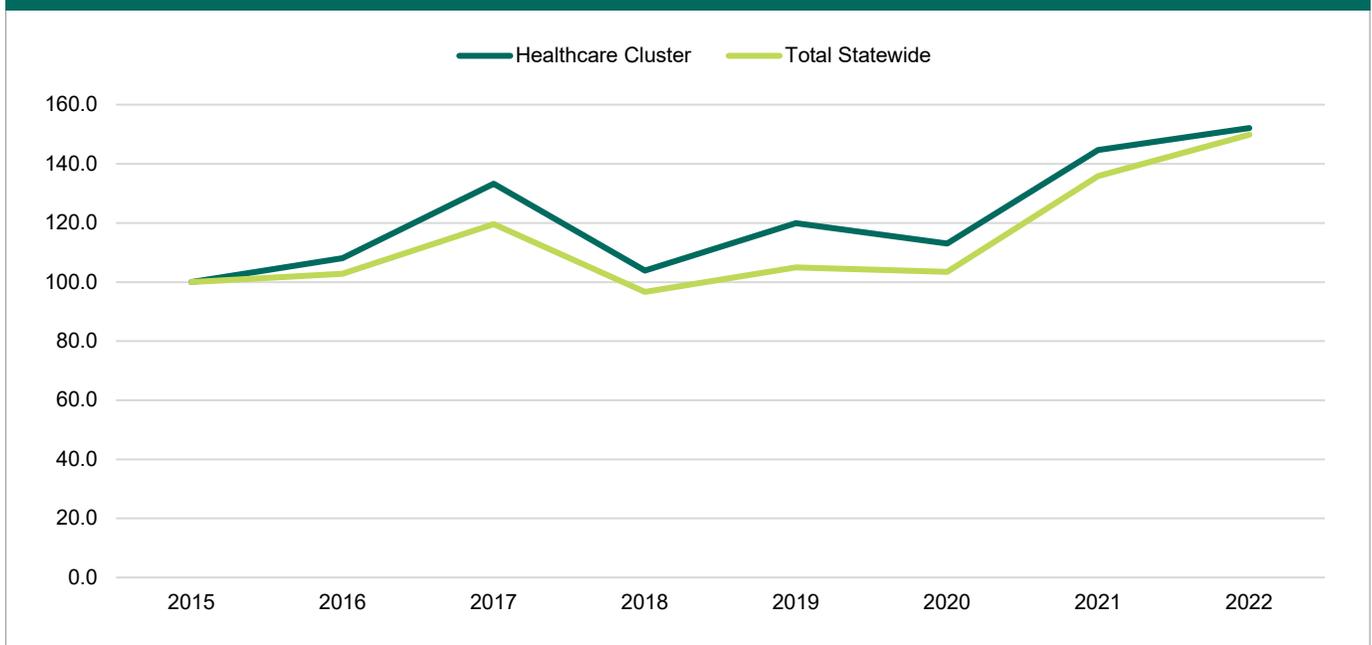
Real-Time Demand

Real-time demand is measured as the number of job advertisements posted online for an occupation or industry. The data is provided by Burning Glass Technologies, The Conference Board Help Wanted Online. Over time, online job advertisements have become more prevalent as technology becomes a more prominent method of communication. The use of online job postings still varies by industry with some areas of the economy being more reliant on methods such as word-of-mouth or local advertisements. Online job advertisements, however, can provide a mix of information about an industry cluster such as total available ads, top requested skills and certifications, minimum education requirements, and more.

Healthcare is a large industry cluster within Michigan. Because of this, job ads in the cluster often follow similar trends as the state overall. This is shown in Figure 6 as the Healthcare and statewide trend lines move in the same pattern, however, with Healthcare always slightly above Michigan. In Figure 6, online job advertisements in the Healthcare cluster and the state are indexed to 2015. Each level of 2015 online job advertisements were set equal to 100 and the changes were calculated from there. In 2022, the cluster had 1.5 online job advertisements for every one online job ad in 2015.

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

FIGURE 6: ONLINE JOB ADVERTISEMENTS INDEX, MICHIGAN HEALTHCARE CLUSTER (INDEX YEAR: 2015)



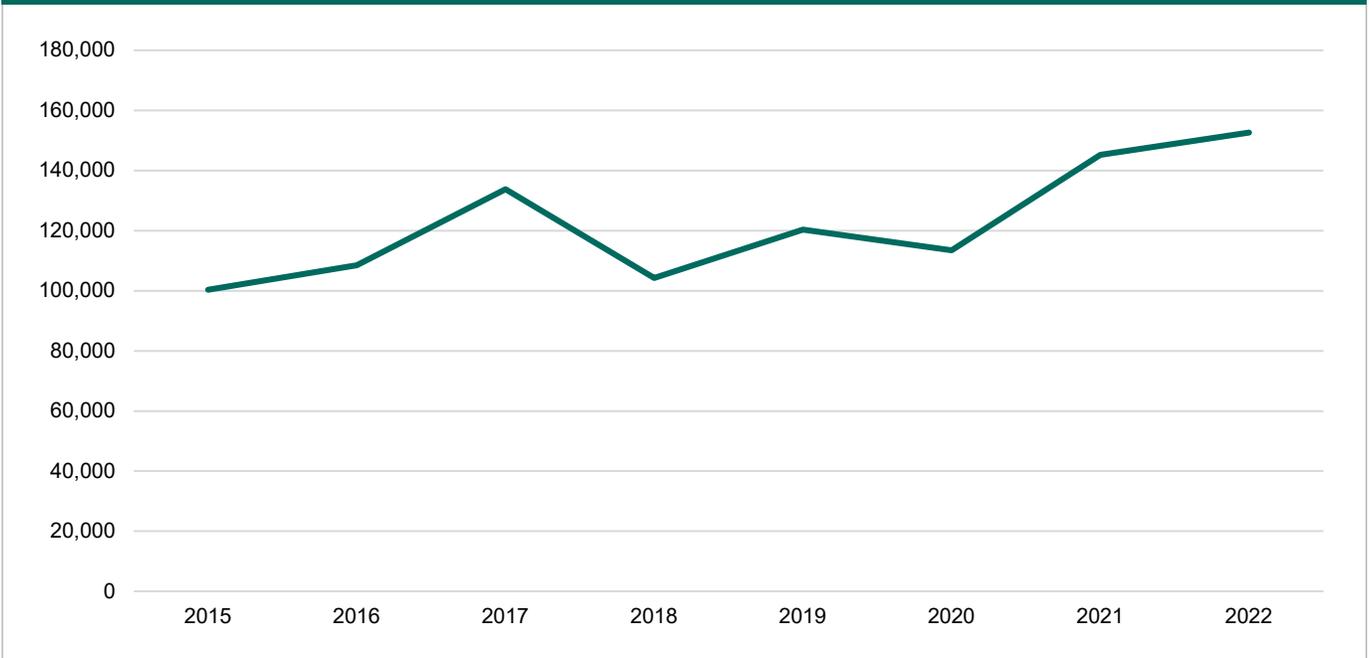
Source: The Conference Board Help Wanted OnLine, Burning Glass Technologies

Online job advertisements for the cluster increased between 2020 and 2022 during the initial years of the COVID-19 pandemic (Figure 7). Online job advertisements dropped across the state in the beginning of 2020. This pushed online advertisements to reach all-time highs in 2021 and 2022 as the state began its recovery from initial pandemic impacts. One of the occupations contributing most to the overall growth in Healthcare is *Registered nurses*. This occupation had the largest numerical increase from 2020 to 2022. *Registered nurses* are not only a standout in Healthcare, but a standout at the statewide level too. It has been one of the top posted occupations since 2020. There is an increasing demand for *Registered nurses*, but it also suggests the Healthcare cluster has adopted the practice of posting job openings online at a higher pace than other industry clusters that are more accustomed to offline advertising methods.

Minimum education requirements in online job advertisements for Healthcare are spread across many different degree levels, as the key occupations demonstrate. Online job ads are more heavily concentrated in high school diplomas or equivalent, bachelor's degrees, and associate degrees. However, master's and doctoral degrees still play an important part in the cluster.



FIGURE 7: ONLINE JOB ADVERTISEMENTS, MICHIGAN HEALTHCARE CLUSTER



Source: The Conference Board Help Wanted OnLine, Burning Glass Technologies



The top 10 certifications and baseline or specialized skills are determined from the number of times the skill or certification is listed in an online job advertisement for the specific time period (July 2021 to June 2022). Certifications are designated credentials earned by an individual to verify skills or knowledge gained to perform a job. Baseline skills are often called foundational skills and are defined as the common, nonspecialized skills that cut across a broad range of occupations. Lastly, specialized skills include professional and job-specific skills requested in job advertisements.

Certifications and Skills Requested in Michigan Healthcare Cluster Online Job Ads

Top 10 Certifications

- Advanced Cardiac Life Support (ACLS) Certification
- American Registry of Radiologic Technologists (ARRT) Certification
- Basic Cardiac Life Support Certification
- Basic Life Saving (BLS)
- Certified Medical Assistant
- Certified Nursing Assistant
- Emergency Medical Technician (EMT)
- First Aid CPR AED
- Licensed Practical Nurse (LPN)
- Registered Nurse

Note: Driver's license is not listed here but did appear in the top 10 certifications for every industry cluster.

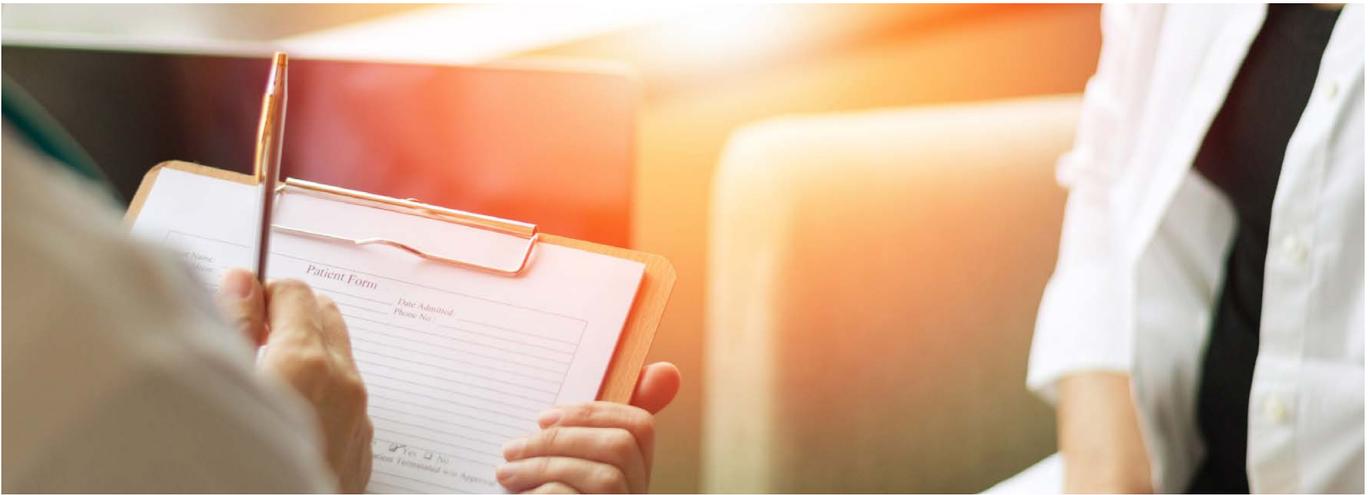
Top 10 Baseline Skills

- Building Effective Relationships
- Communication Skills
- Computer Literacy
- Organizational Skills
- Physical Abilities
- Planning
- Problem Solving
- Research
- Teamwork/Collaboration
- Writing

Top 10 Specialized Skills

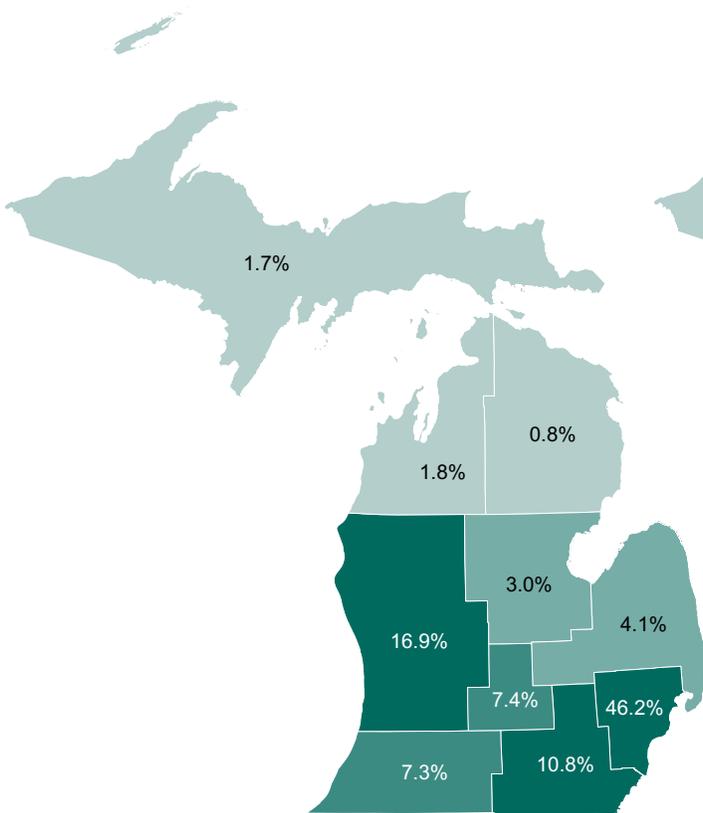
- Cardiopulmonary Resuscitation (CPR)
- Customer Service
- Life Support
- Medical Coding
- Patient Care
- Patient/Family Education and Instruction
- Quality Assurance and Control
- Scheduling
- Teaching
- Treatment Planning

Source: The Conference Board Help Wanted OnLine, Burning Glass Technologies

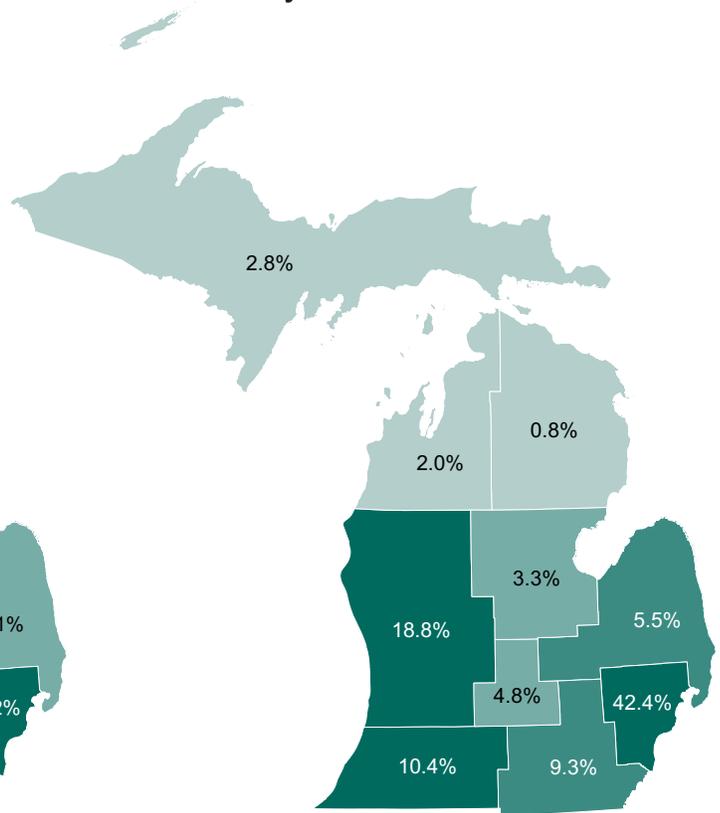


Since Healthcare is a dominant industry cluster in Michigan, its share of online job advertisements across regions closely aligns to the overall shares across the state. A couple of regions that stand out slightly are the South Central and the Southwest regions. South Central Michigan holds a share of Healthcare job ads that is slightly less than its share of overall job ads in the state. In contrast, Southwest Michigan holds a share of Healthcare job ads that is slightly higher than its share of overall statewide ads.

Share of Total Job Advertisements by Michigan Prosperity Region, July 2021 to June 2022



Share of Healthcare Cluster Job Advertisements by Michigan Prosperity Region, July 2021 to June 2022



Source: The Conference Board Help Wanted OnLine, Burning Glass Technologies

Employment Projections

Projections do not exist for industry clusters as a whole but they do exist for industries and occupations that make up the industry cluster. Although projections through 2030 show nearly 9 percent growth in total statewide employment, it is important to remember that these projections begin with a base year of 2020, where total employment was down compared to prior years.

Several occupations in the Healthcare cluster are among the fastest growing in the state and the nation. At nearly 51 percent projected employment growth, *Nurse practitioners* are expected to outpace statewide growth by more than five times. In total, *Nurse practitioners* are projected to grow from more than

5,100 to 7,700 jobs statewide. These top five fastest growing occupations (Figure 8) have a variety of typical education requirements ranging from high school degrees to master's degrees.

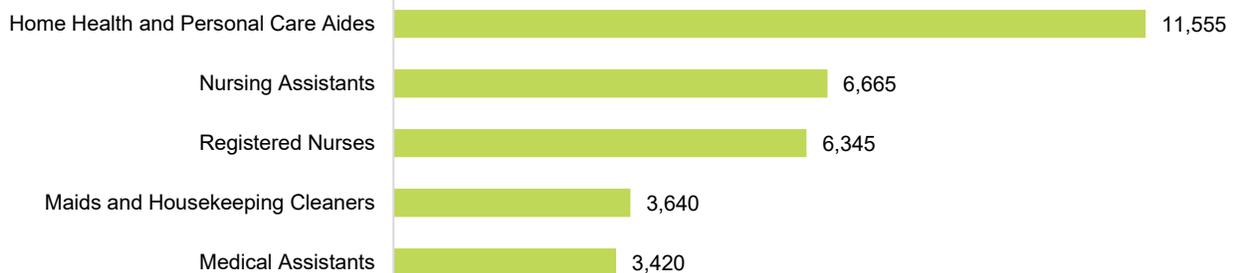
Figure 9 shows the occupations in the Healthcare cluster with the greatest number of projected annual openings through 2030. Of these, only *Registered nurses* require a postsecondary degree while the other four occupations all typically require nondegree awards or some training. With more than 11,500 annual openings, *Home health and personal care aides* are projected to have the seventh most annual openings of any occupation in the state.

FIGURE 8: MICHIGAN HEALTHCARE CLUSTER OCCUPATIONS WITH THE MOST PROJECTED GROWTH THROUGH 2030



Source: 2020–2030 Occupational Employment Projections, Michigan Center for Data and Analytics

FIGURE 9: MICHIGAN HEALTHCARE CLUSTER OCCUPATIONS WITH THE MOST PROJECTED ANNUAL OPENINGS THROUGH 2030



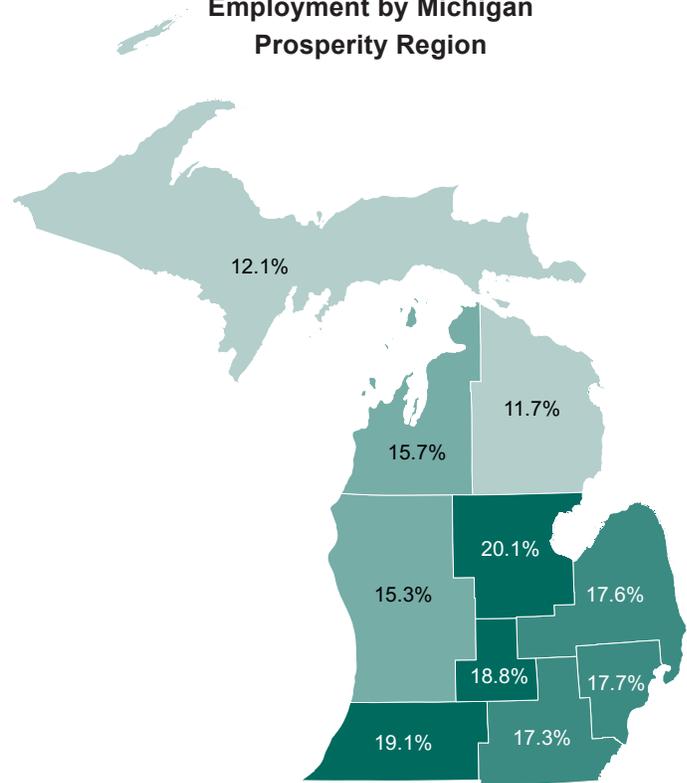
Source: 2020–2030 Occupational Employment Projections, Michigan Center for Data and Analytics

Workforce Demographics

Data on workforce demographics such as gender, age, education, and race and ethnicity are important to identifying industry cluster characteristics and evaluating potential disparities. Understanding and addressing gaps in education and skills across demographic groups can aid in the growth of an industry cluster. In order to maintain a young workforce across an industry cluster, employers may need to acclimate to what their workforce values, such as opportunities for financial and professional gain. The following section displays characteristics of the Healthcare cluster workforce in Michigan. These data analyses rely on the Longitudinal Employer-Household Dynamics and may vary slightly from industry data published by the Quarterly Census of Employment and Wages due to limitations of data availability and differences in collection time periods.

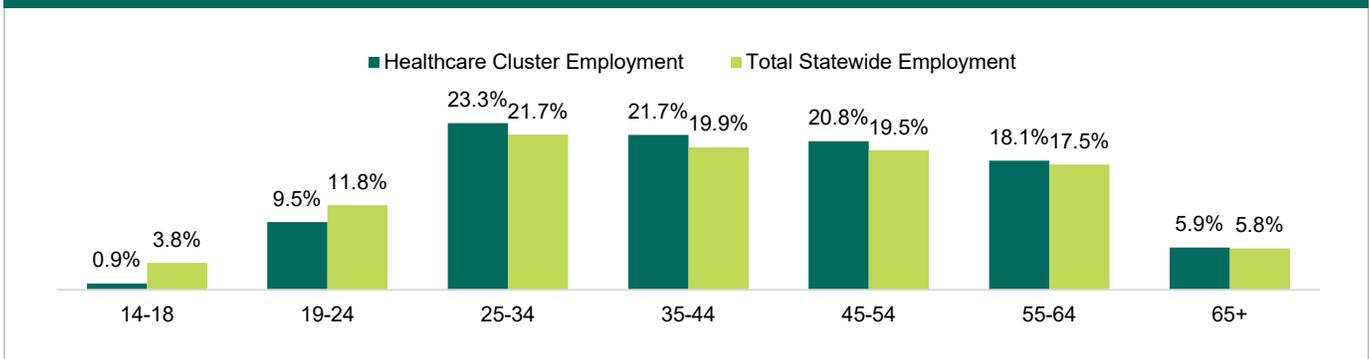
Regional economies show similar reliance on Healthcare employment ranging from 11.7 percent to 20.1 percent. The Healthcare cluster is most heavily represented in the East Central, South Central, and Southwest prosperity regions. At 11.7 percent, the Northeast has the smallest concentration of Healthcare and even this is larger than the shares held by many other sectors in the region.

Healthcare Cluster Share of Total Employment by Michigan Prosperity Region



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

FIGURE 10: MICHIGAN HEALTHCARE CLUSTER EMPLOYMENT BY AGE, THIRD QUARTER 2021

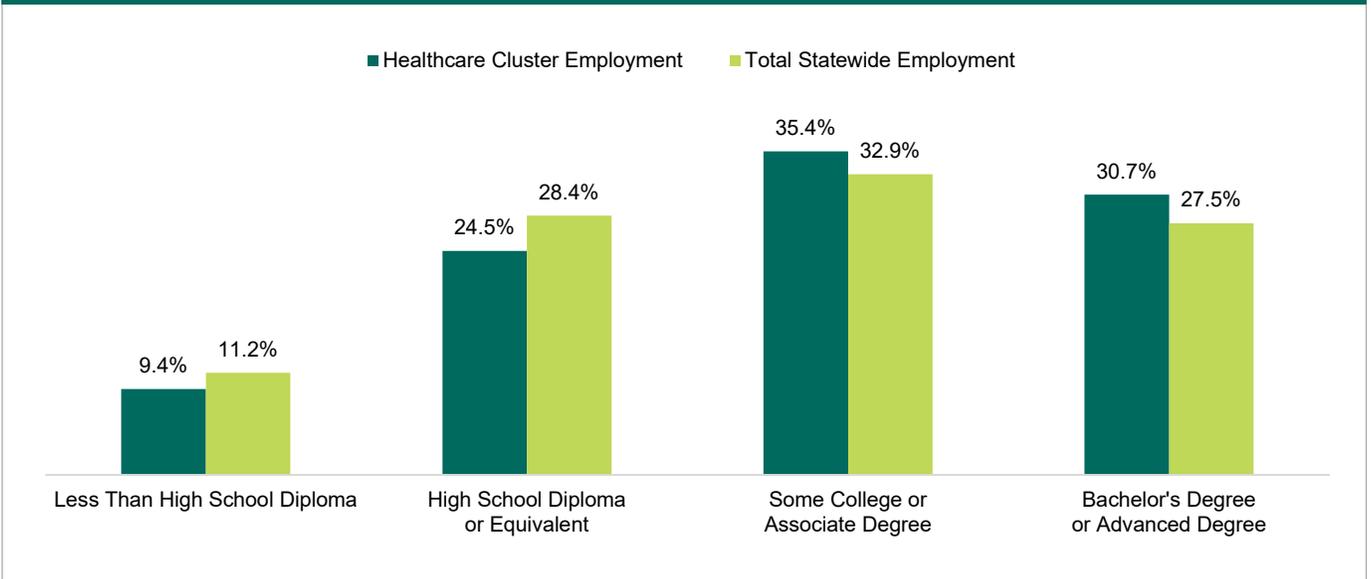


Source: Third Quarter 2021 Longitudinal Employer-Household Dynamics program, U.S. Census Bureau

The age distribution within the Healthcare cluster is fairly in line with the age distribution of all workers across the state with one notable exception in the youth (under 25) cohort. This is largely due to age and education requirements of many jobs. Given the private, and often high-stakes nature of the work, fewer jobs are available to those under 18. This disparity quickly recovers as the age 25-to-34 Healthcare cohort outpaces the comparable statewide group.



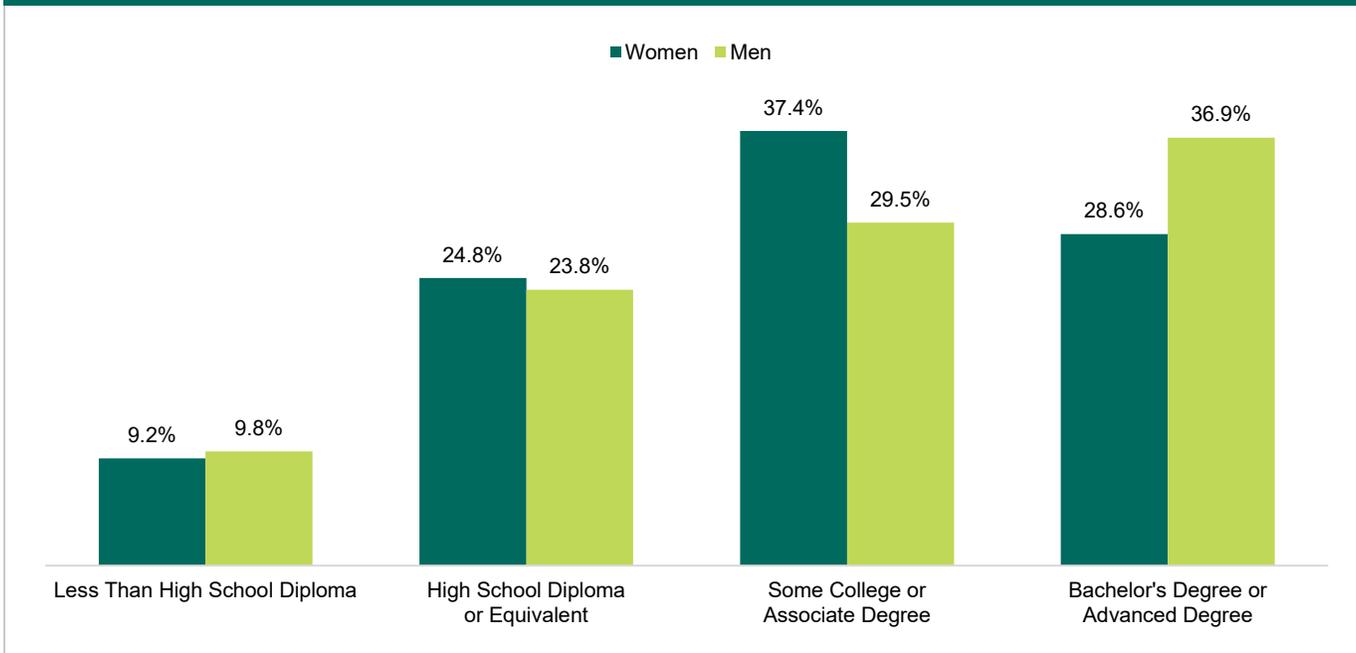
FIGURE 11: MICHIGAN HEALTHCARE CLUSTER EMPLOYMENT BY EDUCATION, THIRD QUARTER 2021



Source: Third Quarter 2021 Longitudinal Employer-Household Dynamics program, U.S. Census Bureau

Educational attainment in the Healthcare cluster is slightly higher than total statewide employment. Most of the disparity is captured by the individuals with some college or an associate degree. Over 35 percent of employees in Healthcare fall within this education category compared to 33 percent statewide. With slightly elevated educational requirements in the Healthcare cluster, it can take more time to fill openings than other industry sectors.

FIGURE 12: MICHIGAN HEALTHCARE CLUSTER EMPLOYMENT BY EDUCATION AND GENDER, THIRD QUARTER 2021

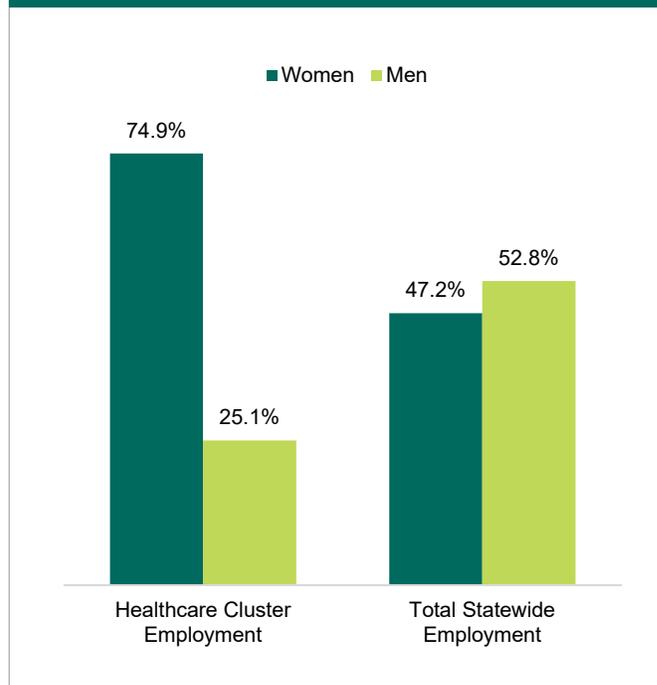


Source: Third Quarter 2021 Longitudinal Employer-Household Dynamics program, U.S. Census Bureau

Educational attainment is relatively equal between men and women at the lower ends but diverges at higher levels. Women are nearly 8 percentage points more likely to be in the some college or associate degree cohort. Many of these occupations require direct patient interaction while having lower wages than those with higher levels of education. Comparatively, the share of men is just over 8 percentage points higher in bachelor's degree or advanced degree. Wages climb with education for both men and women, but women continue to get paid less than men at all levels.

The most notable disparity in the Healthcare cluster is its large reliance on women for the employed workforce. Statewide, women make up roughly 47 percent of employment in all industries. Meanwhile, in Healthcare, women make up nearly 75 percent (480,000) of all employment. This disparity results in almost 319,000 more women working in the cluster than men (161,000). This heavy reliance on women may limit the future talent pool if trends do not change.

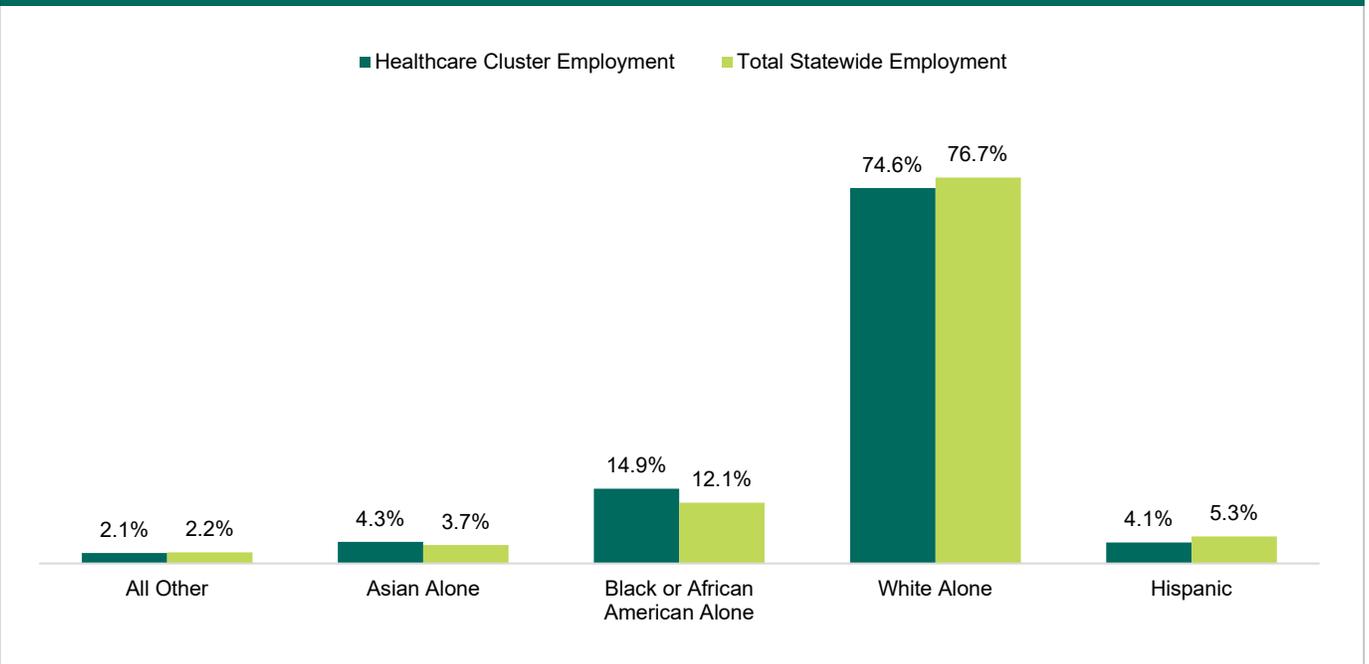
FIGURE 13: MICHIGAN HEALTHCARE CLUSTER EMPLOYMENT BY GENDER, THIRD QUARTER 2021



Source: Third Quarter 2021 Longitudinal Employer-Household Dynamics program, U.S. Census Bureau



FIGURE 14: MICHIGAN HEALTHCARE CLUSTER EMPLOYMENT BY RACE AND ETHNICITY, THIRD QUARTER 2021



Source: Third Quarter 2021 Longitudinal Employer-Household Dynamics program, U.S. Census Bureau

Generally, employment by race and ethnicity in the Healthcare cluster is in line with total statewide employment in all industries. The two exceptions are the Black or African American alone as well as white alone. Those who are Black or African American alone make up nearly 15 percent which is nearly 3 percentage points higher than statewide. White alone employment in the cluster is roughly 2 percentage points lower than the statewide rate.

Talent Pipeline

Data for education program completers of instructional programs are available from the National Center for Education Statistics. These data can be used to estimate ever-changing levels of supply for some occupations in the labor market. There are no officially defined programs for clusters. Certain programs are more likely to lead to work in the Healthcare cluster than others, but there are opportunities across the educational spectrum including business, social work, and manufacturing programs to name a few. This section will highlight only a few of hundreds of possible programs that can lead to a job in the Healthcare cluster. Many factors can shift completers, such as increase in student enrollment during periods of high unemployment or difficulties attending school during a pandemic. For example, demand for workers may be causing upward pressures on programs while other factors such as a lack of instructors are causing total completers to decrease.

The most common program leading to careers in the Healthcare cluster is *Registered nursing/registered nurse*. In 2021, the state had 3,881 completers reported for bachelor's-level nursing programs. These came from 28 unique programs across the state. The number of completers statewide has been slowly climbing in recent years, up from 3,211 in 2017. At the bachelor's level, Eastern Michigan University reported

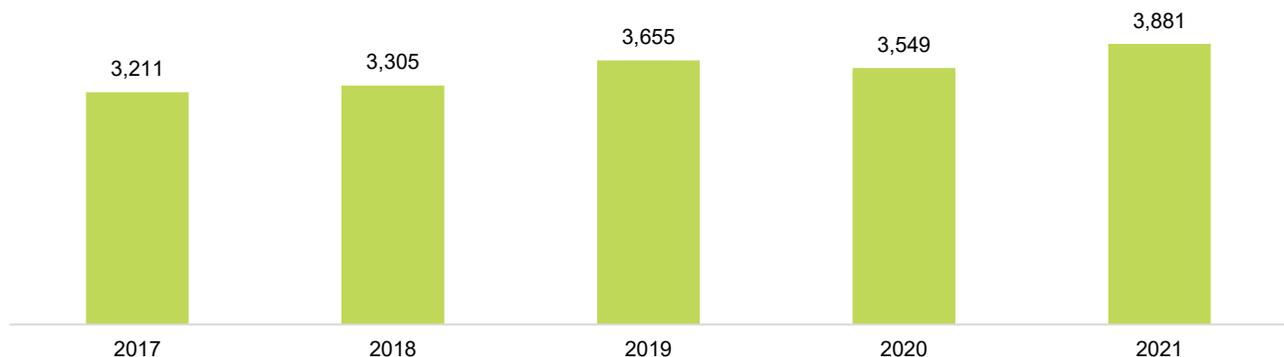
the most nursing program completers in 2021 (500). Other common bachelor's programs in the state are *Social work* (1,039 completers) *Health/health care administration/management* (356) and *Public health, general* (330) to name just a few.

Doctorates are also critical to Healthcare with *Medicine* leading the way in the state with 917 completers coming from six programs. Other top programs for completers are *Pharmacy* (331), *Osteopathic medicine/osteopathy* (281), *Dentistry* (277), and *Physical therapy/therapist* (261).

Other important Healthcare-related programs that are typically short-term certificates include *Nursing assistant/aide and patient* (162) as well as *Emergency medical technology/technician (EMT Paramedic)* (120). These programs are typically only captured in the data if they are completed at federally funded institutions. There are likely further short-term training programs in the state at unreported educational centers. Other common programs in this tier include *Phlebotomy technician/phlebotomist* (90), *Pharmacy technician/assistant* (62), and *Medical insurance coding specialist/coder* (55).

Numerous other programs could lead to employment within the Healthcare cluster including those in business, hospitality, and service.

FIGURE 15: MICHIGAN BACHELOR'S-LEVEL REGISTERED NURSING/REGISTERED NURSE COMPLETERS



Source: National Center for Education Statistics, Integrated Postsecondary Education Data System

Conclusion

Strengths

High Demand

The Healthcare cluster continues to be a key sector in the state, given its large size and everyday importance. Many occupations in the cluster are projected to grow at rates well outpacing the expected statewide employment growth. As the state population continues to age, demand will rise. Technological advancements and new research will also increase the demand for and the importance of quality healthcare.

Clear Educational Pipelines

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

Geographically Diverse

The cluster has a unique advantage in how it is distributed well throughout the state. An individual hoping to find work in their community likely has local job openings available. For example, whether it's community health centers, nursing homes, or urgent care centers, some type of healthcare employment appears in nearly every Michigan community.

Well-Understood Sector

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 heavily concentrated in the cluster rather than being shared across the economy.





Challenges

Educational Capacity

Career and technical education programs, certificate programs, colleges, and universities have limited capacity to train Healthcare-driven individuals. Increasing the size and number of programs can take years of investment and planning. Increased training capacity may also be limited unless the number of postsecondary instructors can be expanded.

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 may prove challenging while balancing the needs of employees with lowering the cost of healthcare.

Reliance on Occupations Requiring Years of Education

Many occupations in the Healthcare cluster take years of training. This education can be extremely costly and prohibit potential workers from reaching the labor market. For some specializations there may be years between an increase in demand and a sufficiently trained supply to meet that demand. Helping young students realize that they may want to pursue these lengthy may not create changes in the labor force for

a decade if they start the path right out of high school. After years of university, medical school, residency, and potential fellowships, an employee is likely to be 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.

Diversity, Equity, and Inclusion

The Healthcare cluster is overwhelmingly reliant on female employment and although the cluster's racial makeup is close to that of the state's, minority workers are not evenly spread throughout the cluster. If the cluster is eager to grow, employers may need to focus on diversifying talent attraction to pools that they have not historically reached. Also, with the cluster's reliance on occupations that typically require high levels of education, barriers preventing individuals from completing programs should continue to be addressed to ensure the largest available talent pool possible, as well as one that better understands and represents the community it serves.



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