MHC insight

2024
Michigan Healthcare Workforce Index

Ranking the Health of Michigan's Healthcare Occupations

MHC insight is a service of michigan health council

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Executive Summary

Last year, Michigan Health Council (MHC) collected data regarding current and projected statewide healthcare workforce shortages. The resulting 2023 Michigan Healthcare Workforce Index (MHWI) was the product of those research efforts – a first-of-its-kind, comprehensive index that assessed the "health" of 36 healthcare occupations in Michigan. This is an update to that report, combining new 2022 and 2023 data from Lightcast, the Association of American Medical Colleges (AAMC) and the Accreditation Council for Graduate Medical Education (ACGME).

As was true last time, MHC was able to systematically rank each healthcare occupation on a variety of inputs and make comparisons across occupations. The purpose of ranking and comparing occupations is not to conclude that some occupations are better than others. In a political world of finite resources, MHC's goal is to help decision-makers quickly understand the current state of individual occupations and the collective healthcare workforce across a range of factors. MHC wants decision-makers to use the MHWI as one of many tools to help inform how to invest limited time and resources for maximum impact. While no social science methodology is perfect, MHC believes that the insights and analysis gleaned from the MHWI will spark informed discussions about the best ways to build Michigan's healthcare workforce capacity.

Key Findings:

- Nearly all occupations analyzed are projected to experience workforce shortages between now and 2033.
- The "healthiest" occupation over the next ten years is Optometrists.
- The "unhealthiest" occupation over the next ten years is Nursing Assistants.
- Compared to last year's Index, many occupations moved either up or down in ranking, most significantly including:
  - *Physician Group:* Saw higher wages, and climbed to the second spot.
  - *Licensed Practical Nurses (LPNs) and Licensed Vocational Nurses (LVNs):* Saw higher wages and more growth, and rose into the top ten.
  - *Child, Family and School Social Workers:* Saw higher wages and a small surplus of individuals, and climbed into the top half of the Index.
  - *Nurse Anesthetists:* Much lower wages over this ten year period dropped the occupation to the bottom half of the Index.
  - *Emergency Medical Technicians (EMTs):* A much smaller shortage allowed them to break out of the bottom third.
- Occupations with fewer educational requirements beyond a high school diploma still struggle to break out of the bottom third of the Index due to low wages.
- Mental health occupations requiring a Master of Social Work (MSW) dropped 12 spots due to a six percentage point decline in percentage wage growth between 2012 and 2022.

About MHC Insight

Michigan Health Council (MHC) is a solutions-oriented nonprofit with an eight-decade track record of developing sustainable programming for healthcare employers, educators, and professionals. A partner in building healthcare workforce capacity, MHC is the force behind MHC Insight — Michigan's preeminent resource for data, analysis, and labor market intelligence on critical issues facing Michigan's healthcare workforce.

MHC Insight collects and disseminates healthcare workforce data and research to support stakeholders' efforts to develop systems-level approaches to building healthcare workforce capacity. MHC Insight can help organizations address their specific issues but prioritizes solutions to societal needs that cannot be solved in silos — like bolstering access to care, reducing health inequities, and increasing Michigan's healthcare workforce diversity. The first step in this process is creating a shared understanding of what current data tells us about our workforce.

About Solutions Net

MHC Insight is the force behind Solutions Net, a constellation of products and services that catalyze data on healthcare workforce gaps into actionable talent solutions accessible to organizations statewide. Solutions Net deliverables include: workforce gap analysis, a plan to address prioritized gaps, and briefing documents helping stakeholders execute the plan. This work is supported by a grant from the Michigan Health Endowment Fund.

Methodology

This report highlights labor market information at a statewide and regional level for Michigan. A full healthcare workforce overview is provided within, identifying key components of the labor market including projections, wage, and supply data. MHC analyzes labor market information at the occupation level with 65 occupations, using specific Standard Occupational Classification (SOC) codes to provide more contextualized information. For this report, MHC collapsed several occupations with similar educational requirements (such as physicians or behavioral healthcare occupations) into groups to produce a clearer picture of the supply of professionals for these occupations. These occupation groups combine data for occupations with similar skillsets, educational attainment, and experience requirements.

Data Sources

The MHWI utilized three different quantitative data sources.

- **Lightcast:** Lightcast gathers and integrates economic, labor market, demographic, education, profile, and job posting data from dozens of government and private-sector sources, creating a comprehensive and current dataset that includes both published data and detailed estimates with full United States coverage. Occupation data presents employment and wage information categorized by worker type — Registered Nurses, Welders, Web Developers, etc. Occupation job counts are generated by taking industry job counts from the Bureau of Labor Statistics' (BLS) Quarterly Census of Employment and Wages (QCEW) and combining them with staffing patterns from the BLS Occupational Employment Statistics (OES) dataset. Staffing patterns are unique to industries and show the percentage breakout of each industry into its component occupations. Lightcast regionalizes OES staffing patterns, creating location-specific staffing patterns that take into account the region's particular industry mix. The result is tailored staffing patterns that generate location-specific occupation employment data.

  Basic occupation earnings data come from OES as well. Lightcast unsuppresses earnings data where necessary and models the Metropolitan Statistical Area (MSA)-level earnings native to OES down to the county level. Although OES is not published as a time series, Lightcast has developed one using historical OES data. This time series offers several benefits, including historical occupation earnings back to 2005, reduced volatility between years of published OES data, and the ability to use historical years of OES to unsuppress latest year OES data.

  Occupation employment data goes back to 2001 and is also projected ten years into the future. Projections are generated by applying projected staffing patterns to Lightcast's projected industry employment data.

  Finally, Lightcast provides data on college enrollments and graduates, as reported in the National Center for Education Statistics' (NCES) Integrated Post-Secondary Education Data System (IPEDS) dataset. This includes gender and race/ethnicity data for enrollees by school; graduates by school; Classification of Instructional Program (CIP) code; award level; and data on distance completions, as well as information on tuition and other student fees.

- **Association of American Medical Colleges (AAMC):** AAMC data from the 2021 Michigan workforce profile of residents was utilized to determine a physician retention rate in Michigan. In 2021, the residency retention rate of physicians in Michigan was 45 percent.

- **Accreditation Council for Graduate Medical Education (ACGME):** Data from the 2022–2023 ACGME Data Resource Book was utilized to gain a better understanding of the residency and medical education retention rates in Michigan.

Index Creation

The MHWI was created using a rankings methodology, combining several quantitative inputs. To start, occupations with similar education requirements were grouped together to capture a more accurate picture of their supply. While Lightcast does have specific projections and wage data for physician subspecialties, these subspecialties are different from the descriptions in the ACGME Data Resource Book. Moreover, the residency retention rate provided by AAMC applies across physician subspecialties, but it is possible that certain subspecialties have higher or lower retention rates than that of the overall occupation. As a result, for clarity of analysis, it was more cohesive to collapse the 17 physician subspecialties provided by Lightcast into one larger Physician group.[1]

Next, many behavioral health occupations require a Master of Social Work (MSW). Because there is no way to know what happens to an individual once they receive their MSW (e.g., do they begin practicing, decide to return to school for another degree, become a substance abuse counselor, etc.?) it was necessary to collapse all occupations requiring an MSW – Marriage and Family Therapists; Healthcare Social Workers; Rehabilitation Counselors; Mental Health and Substance Abuse Social Workers; and Substance Abuse, Behavioral Disorder, and Mental Health Counselors – into one group for analysis. This is separate from Social Workers, All Other and Child, Family and School Social Workers, both of which require a Bachelor of Social Work (BSW) and were similarly grouped together. This is also true of Psychologists – a group that combines Clinical and Counseling Psychologists, School Psychologists and All Other Psychologists.

Finally, four dentistry occupations were combined for similar educational and ease of analysis reasons – General Dentists, Orthodontists, Prosthodontists and All Other Specialty Dentists. Oral and Maxillofacial Surgeons were dropped because they were a subspecialty for which education data could not be pulled. This was also true of Orderlies. As a result, MHC's 65 healthcare occupations became 36 for the purposes of this Index.

Once the occupations were condensed, data for each occupation (or group of occupations) was pulled from Lightcast. The input variables included a measure of current employment (2023 jobs), projected employment (2033 jobs), 2023–2033 openings, 2022 median wage, 2012 median wage and 2023 turnover. In addition, education supply data was pulled from IPEDS, with additional qualitative confirmation occurring through the review of each educational institution's website for up-to-date program specifics.

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[1] The subspecialties are: Anesthesiologists, Cardiologists, Dermatologists, Emergency Medicine Physicians, Family Medicine Physicians, General Internal Medicine Physicians, Neurologists, OBGYNs, Ophthalmologists (Except Pediatric), Orthopedic Surgeons (Except Pediatric), General Pediatricians, Pediatric Surgeons, Pathologists, Psychiatrists, Radiologists, All Other Surgeons, All Other Physicians

These input variables were then combined to create four final ranking variables – Growth, Shortage, Wage, and Turnover. The current employment and projected employment numbers were used in order to calculate the percentage each occupation is expected to grow over the next ten years (Growth). The occupation's 2022 median wage and 2012 median wage were combined to determine by what percentage the occupation's wage had increased (or decreased) over the last ten years of available data (Wage).

Turnover remained in its natural form – a measure that is calculated by comparing total separations to total jobs (separations divided by jobs). A separation is recorded when an individual's Social Security Number that appeared on a company's payroll is no longer present. By comparing separations to the total number of jobs in an occupation, Lightcast can benchmark the level of movement taking place in that occupation (Turnover).

Finally, by comparing how many openings an occupation is expected to have over the next ten years to the educational supply over ten years, an estimate for shortages or surpluses can be calculated. Lightcast's Openings figure estimates the change in growth and replacement jobs (Growth + Replacements = Openings). Growth captures the change in the total number of workers employed in an occupation, while replacement jobs are estimates of workers permanently leaving an occupation and needing to be replaced by new hires. A combination of both numbers indicates total openings for the time frame. Terminal educational completions (i.e., final degree required) from the most recent IPEDS year was multiplied by ten in order to match the ten-year openings numbers from Lightcast, and then a shortage ratio was calculated by looking at the absolute shortage or surplus of the occupation (Openings – Completions) over the expected size of the occupation in 2033 (Openings - Completions / 2033 Jobs). This was the final ranking variable, Shortage.

The Shortage variable was further modified for Physicians, since the number of individuals completing medical school in a state is not a good representation of the physician supply for the state. Using ACGME data for Michigan, 1,840 residents entered the GME pipeline in 2022-2023. By removing those residents who do not complete their education and applying a residency retention rate of 45 percent from AAMC, this resulted in 827 residents available for the Michigan workforce in 2022. Note that the number used was those entering the residency education process in order to account for the various lengths of residency that many subspecialties require.

To verify this number, MHC completed this exercise going back ten years, in order to look at the stability of residency classes in Michigan. The results are plotted in figure 1.[2]

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[2] The number of residents completing and entering will never be equivalent since some physician subspecialties have longer residencies than others.

Figure 1: Medical Residency Trends
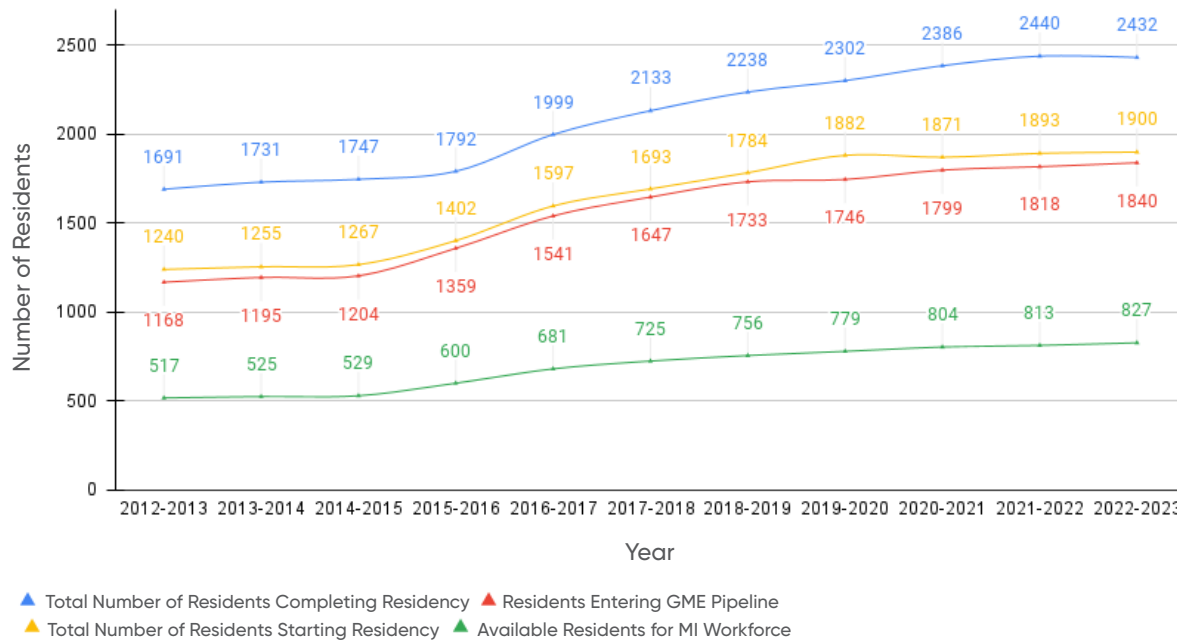
While the size of the residency classes in Michigan has increased since 2012, the number of medical schools in Michigan has also increased in this time frame, resulting in more residency slots needing to be available, and thus accounting for the increase in residency classes around the state. It is also important to note that several other occupations offer the option for residency – Dentists, Pharmacists, Nurse Practitioners and Physician Assistants – but there is no data tracking mechanism comparable to that of Physicians.[3] As a result, MHWI shortage figures for these occupations are most likely a best-case scenario, since it is probable that individuals may be relocating to other states in order to pursue job opportunities either pre- or post-residency.

Each occupation was then ranked from 1 to 36 on each ranking variable (e.g., because Dentists had the lowest Turnover, they were ranked as the number one occupation on Turnover). However, Dentists also had a middle-of-the-pack Growth number, resulting in Dentists ranking 28th on that variable. Across the board, for each variable, a lower number means the occupation is well-positioned on that variable, while a higher number means the occupation is faring poorly compared to other occupations. These rankings were then summed by occupation (e.g., Dentists – #28 Growth, #2 Shortage, #11 Wage, #1 Turnover = 42), and re-ranked so that occupations with the smallest overall sum were highest (or "healthiest") on the list. In the event of a tie, priority was given to the occupation with the lower rank on Shortage.

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[3] MHC Insight conducted a survey of Michigan pharmacists in 2023 and determined that 66 percent of pharmacy clinical specialists, and 70 percent of community pharmacists, remain in Michigan post graduation. While the data is not used in the report because of the survey style, it is a good starting point for understanding pharmacy retention.

The most significant changes in ranking are largely due to the variance in data from updating the Wage input to the base years of 2012 and 2022. The Index methodology ranking is all relative, so as the Wage base years update, the placement of an occupation relative to another occupation can be different.

Each MHWI variable received equal weight during the summation procedure; however, many versions of this methodology were tested to determine if weighting one variable more (e.g., a 35 percent weight applied to Shortage) would result in a different version of the results. No matter how many versions were tested, each occupation tended to remain in the third of the list in which it was placed without using any weights.

Table 1: Michigan Healthcare Workforce Index

Occupation	Overall Rank	Rank Growth	Rank Shortage	Rank Wage	Rank Turnover	2024-2023 Rank Change
Optometrists	1	10	18	9	3	1
Physician Group	2	35	6	4	2	10
Nurse Practitioners	3	1	16	21	11	–2
Diagnostic Medical Sonographers	4	12	3	28	9	4
Physician Assistants	5	4	22	12	15	2
Licensed Practical and Licensed Vocational Nurses	6	16	7	5	27	10
Physical Therapists	7	6	11	32	7	6
Paramedics	8	15	24	1	17	7
Occupational Therapists	9	9	9	20	21	–3
Community Health Workers	10	7	15	10	29	8
Radiation Therapists	11	34	1	24	4	–6
Dentists, General	12	28	2	34	1	–9
Radiologic Technologists and Technicians	13	30	5	19	14	–2
Respiratory Therapists	14	13	20	26	10	–4
Registered Nurses	15	24	8	22	19	2
Social Workers (just BSW)	16	19	4	27	24	14
Occupational Therapy Assistants	17	3	31	6	34	11
Nurse Midwives	18	29	13	14	20	–4
Surgical Technologists	19	26	10	23	18	6
Pharmacists	20	27	14	30	6	1
Nuclear Medicine Technologists	21	36	21	15	5	–12
Home Health and Personal Care Aides	22	5	36	3	35	2
Emergency Medical Technicians	23	11	12	33	25	9
Physical Therapist Assistants	24	2	33	13	33	5
Magnetic Resonance Imaging Technologists	25	25	28	16	13	–6
Cardiovascular Technologists and Technicians	26	32	17	18	16	–4
Nurse Anesthetists	27	22	26	29	8	–23
Medical Assistants	28	14	29	11	31	–5
Pharmacy Technicians	29	23	30	8	28	5
Phlebotomists	30	18	32	7	32	–3
Occupations Requiring an MSW	31	8	23	35	26	–11
Psychologists	32	17	27	36	12	–6
Clinical Laboratory Technologists and Technicians	33	31	19	25	23	–2
Dental Hygienists	34	21	25	31	22	–1
Dental Assistants	35	20	34	17	30	1
Nursing Assistants	36	33	35	2	36	–1

MHWI Results

The "healthiest" occupation over the next ten years is Optometrists. Optometrists ranked tenth in Growth, top ten in Wage and Turnover, and eighteenth in Shortage. Physicians ranked second overall due to their ranking in the top ten across three variables, with the exception of Growth. Rounding out the overall top five are three other occupations that had strong showings in a particular variable – Nurse Practitioners ranked first in Growth, while Diagnostic Medical Sonographers and Physician Assistants had strong showings in Shortage and Growth, respectively. Nursing Assistants are the "unhealthiest" occupation, with low rankings (over 30) in three of the four variables. The occupations that ranked last in each category – Psychologists in Wage, Nuclear Medicine Technologists in Growth, Nursing Assistants in Turnover and Home Health Care and Personal Aides in Shortage - also all fall towards the bottom.

Other occupations that fall in the bottom half of the list include several behavioral health occupations – those requiring an MSW and Psychologists. Moreover, the bottom half of the list is also populated with occupations that require very little additional education beyond high school – several medical technicians, Medical Assistants, Phlebotomists, various therapy assistants, Dental Hygienists, Pharmacy Technicians, and Nursing Assistants.

Only four occupations are projected to have a surplus between 2023 and 2033 – Diagnostic Medical Sonographers, Dentists, Radiation Therapists and Child, Family and School Social Workers. However, even with a surplus, these occupations can be poorly distributed across Michigan. For example, it is harder to gain access to a dentist in some areas than others. In 21 counties in Michigan, there are fewer than 3.5 dentists per 10,000 people, and in another 20 counties there are between 3.6 and 4.9 dentists per 10,000 people. This means that although Michigan's overall ratio of dentists per 10,000 people is at the national average, people living in about half the counties in this state have far fewer dentists available.[4] In other words, more than 1.7 million residents of Michigan live in areas with a shortage of Dentists. Furthermore, Northern Michigan is without a dental hygiene program, which has exacerbated the impact of the overall oral health labor distribution in a more rural part of the state.[5]

Physicians rank much higher this year than last year, largely thanks to higher wages. However, while their overall shortage numbers are small, many subspecialties are experiencing more significant shortages than the group overall - Detroit is ranked as the fourth in the nation when it comes to average age of OBGYNs, and sixth for the highest risk of shortages.[6] Nationally, the top three specialties with the biggest shortages are

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[4] Beek, M. V., & Davidson, J. (2016). Dental Therapists: A Proposal to Expand Access to Dental Care in Michigan. Mackinac Center for Public Policy. https://www.mackinac.org/S2016-06

[5] Machado, K. P. (2023). Northern Michigan Reacts to Dental Assistance Shortage. *Decisions in Dentistry*. https://decisionsindentistry.com/2023/03/northern-michigan-reacts-to-dental-assistant-shortage/

[6] *Looming Physician Shortages: A Growing Women's Health Crisis.* (2018). Doximity. https://assets.doxcdn.com/image/upload/pdfs/ob-gyn-workload-and-potential-shortages-2018.pdf

cardiologists, family doctors, and general surgeons.[7] And, it is estimated that the demand for neurologists will exceed supply by 19 percent in the year 2025.[8]

Paramedics – which rank in the top half of the Index due to relatively higher wages and growth – still have a significant labor shortage; EMTs (which make lower wages, and therefore, fall in the middle) have a similar shortage. In January of 2022, three organizations reported a shortage of nearly 1,000 EMTs and Paramedics and asked for the Michigan State Legislature for funding to help cover the cost of training and recruiting individuals to fill those roles.[9]

NursingEducation.org used HRSA data to rank states on their projected shortage of nurses through 2030, and Michigan ranked 16th of 50 states, with a projected 11.7 percent shortage of Licensed Practical and Vocational Nurses (LPNs).[10] According to the American Nurses Association, 1.1 million nurses were needed by 2022 to address the current nursing shortage, and the 2020 National Nursing Workforce Survey found that more than one-fifth of all nurses plan to retire within the next five years. [11] While Registered Nurses ranked in the middle and LPNs ranked in the top of the MHWI, when considering the absolute value of nurses needed over the next ten years (as opposed to the percentage of the occupation), Registered Nurses and LPNs combined rank seventh in shortage – behind Home Health and Personal Care Aides, Nursing Assistants, Medical Assistants, Dental Assistants, Pharmacy Technicians and Occupations Requiring an MSW.

Meanwhile, the American Society of Health System Pharmacists reported turnover rates of 21 percent for Pharmacy Technicians in 2021, with nearly one in ten pharmacy administrators saying they had lost 41 percent or more of their technicians.[12] In Michigan, the Michigan Pharmacists' Association CEO connected the shortage to the low wages and high pressure of the job, stating that as restaurants and retailers raised their wages upwards of $15 per hour, Pharmacy Technicians saw opportunities for more money and less stress elsewhere in the workforce. [13] In the MHWI, Pharmacy Technicians saw an 89 percent shortage or a projected shortage of just over 14,000 individuals over the next ten years.

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[7] Business Journal Staff. (2010). Michigan's Physician Shortage is a Concern. *Crain's Grand Rapids Business*. www.crainsgrandrapids.com/uncategorized/michigans-physician-shortage-is-a-concern

[8] Alexander, J. (2023, January 17). Neurologist Shortage: 3 Solutions to a Growing Problem. *LocumTenens*. www.locumtenens.com/blog/neurologist-shortage-3-solutions-to-a-growing-problem/

[9] Flores, A. (2022, January 24). Michigan Emergency Medical Services Groups Need Roughly 1,000 New Workers. *WZZM*. www.wzzm13.com/article/news/local/ems-funding-staffing-shortage/69-5d740dc9-e479-4370-9bfb-2c3964b36023

[10] Troyer, M. (2024, January 19). States That Will Need Nurses the Most by 2030. *NursingEducation*. nursingeducation.org/states-that-will-need-nurses-the-most-by-2030/

[11] 60 Key Nursing Statistics and Trends for 2021. (n.d.). *University of St. Augustine for Health Sciences*. www.usa.edu/blog/nursing-statistics/#nursingShortage

[12] Hospitals and Health Systems Experiencing Severe Shortage of Pharmacy Technicians. (2022, March 15). *ASHP*. www.ashp.org/news/2022/03/15/hospitals-and-health-systems-experiencing-severe-shortage-of-pharmacy-technicians?loginreturnUrl=SSOCheckOnly

[13] George, M. (2023, February 10). Pharmacy Technician Shortage Causes Strain in Hospitals and Retail Pharmacies. *The State News*. statenews.com/article/2023/02/pharmacy-technician-shortage-causes-strain-in-hospital-and-retail-pharmacies?ct=content_open&cv=cbox_latest

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The Kaiser Family Foundation reported in 2023 that Michigan had one of the most severe behavioral health professional shortages in the country. Over 5.9 million Michiganders live in a Mental Health Care Health Professional Shortage Area (HPSA), or where the population to provider is at least 30,000 to one (20,000 to one if there are unusually high needs in the community). In order to remove all Mental Health Care HPSA designations across the state, an additional 249 practitioners are needed.[14] This is in line with the MHWI, where most behavioral health professionals rank in the bottom half of the Index. Moreover, while Psychiatrists are members of the Physician group in the MHWI, their impact on mental health is critical. According to a December 2018 analysis by University of Michigan researchers, two-thirds of Michigan's psychiatrists are based in the Ann Arbor–Detroit region. Of Michigan's 83 counties, 33 had no psychiatrist and another ten counties had only one. North of Mount Pleasant, the number of psychiatrists to residents is half the ratio of downstate. There are only 11.84 psychiatrists per 100,000 residents in the state overall.[15]

Demographics of Healthcare Occupations

Listed in figure 2 and figure 3 are the average sex, race and ethnic diversity across healthcare occupations in Michigan in 2023. Women tend to outnumber men, and white individuals tend to outnumber all other races. However, some occupations are more diverse. Listed below are the top occupations with a lower percentage of white individuals working in the occupation (translating to more racial and ethnic diversity). The occupations with the most men (over 50 percent) are all physicians or dentists. As seen in table 2, most occupations that exhibit more diversity are LPNs, are in behavioral health, or in patient support. A U.S. health workforce study completed in 2020 found that Black, Native American, and Hispanic people were underrepresented in ten professions analyzed (compared to their percentage of the overall population) – advanced practice registered nurses, dentists, occupational therapists, pharmacists, physical therapists, physician assistants, physicians, registered nurses, respiratory therapists and speech language pathologists.[16] This is borne out in Michigan's results as well – where these occupations do not make the below list of more diverse occupations.

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[14] *Mental Health Care Health Professional Shortage Areas (HPSAs)*. (2022). KFF. www.kff.org/other/state-indicator/mental-health-care-health-professional-shortage-areas-hpsas/?currentTimeframe=0&selectedRows=%7B%22states%22:%7B%22michigan%22:%7B%7D%7D%7D&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D

[15] Mack, J. (2020, February 18). Michigan's Psychiatrist Shortage Makes Access to Mental Health Services Much Harder. *MLive*. www.mlive.com/news/2020/02/michigans-psychiatrist-shortage-makes-access-to-mental-health-services-much-harder.html

[16] Edward Salsber, Chelsea Richwine, et. al. (2020). Estimation and Comparison of Current and Future Racial/Ethnic Representation in the US Health Care Workforce.

Figure 2: 2022 Michigan Healthcare Occupations by Race/Ethnicity
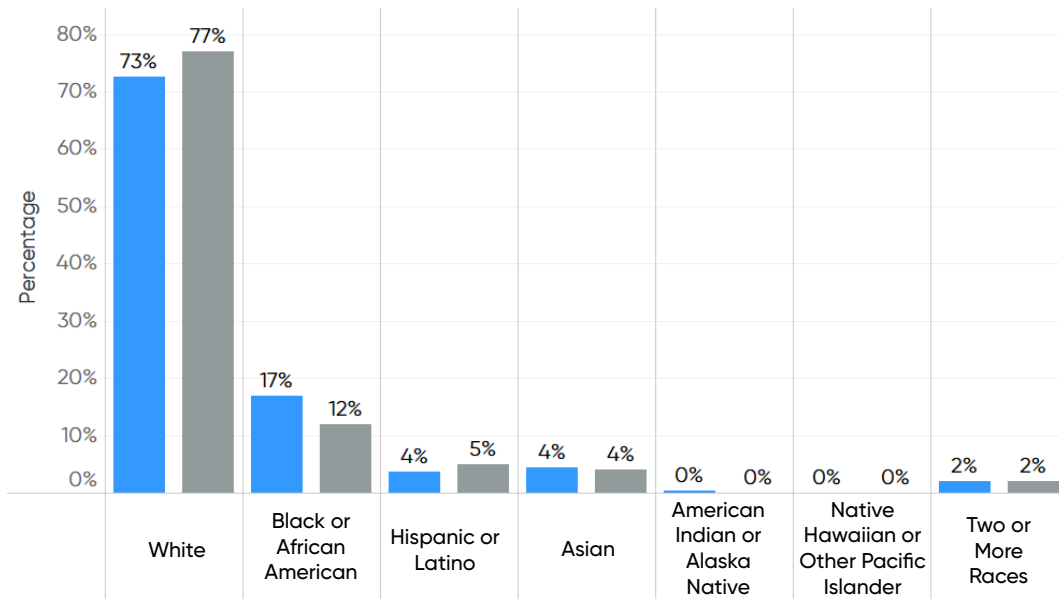
Measure Names
- Michigan Healthcare
- Michigan Overall Population

Figure 3: 2022 Michigan Healthcare Occupations by Sex

Males 19%
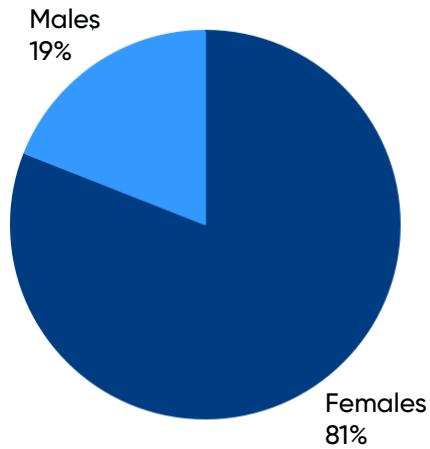
Females 81%

Figure 4: 2022 Michigan Overall Occupations by Sex

Males 51%
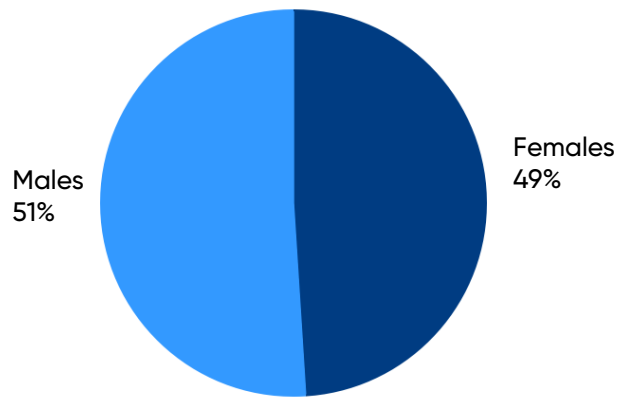
Females 49%

Table 2: Most Diverse Occupations (by percentage)

Description	Males	Females	Hispanic	White	Black or African American	American Indian or Alaska Native	Asian	Native Hawaiian or Other Pacific Islander	Two or More Races
Nursing Assistants	11%	89%	4%	56%	34%	1%	3%	0%	2%
Home Health and Personal Care Aides	16%	84%	5%	59%	30%	1%	3%	0%	3%
Child, Family, and School Social Workers	15%	85%	4%	65%	26%	0%	1%	Insf. Data	3%
Community Health Workers	25%	75%	6%	66%	22%	1%	2%	Insf. Data	3%
Licensed Practical and Licensed Vocational Nurses	9%	91%	3%	67%	25%	0%	2%	Insf. Data	2%
Rehabilitation Counselors	29%	71%	4%	68%	23%	0%	1%	Insf. Data	3%
Social Workers, All Other	17%	83%	4%	69%	21%	1%	2%	Insf. Data	3%
Substance Abuse, Behavioral Disorder, and Mental Health Counselors	24%	76%	4%	69%	22%	0%	2%	Insf. Data	3%
Phlebotomists	14%	86%	6%	70%	19%	0%	3%	Insf. Data	2%
Healthcare Social Workers	17%	83%	4%	70%	22%	0%	2%	Insf. Data	2%

Additionally, a substantial body of literature suggests that fostering a diverse and inclusive workforce is critical to increasing access to care and improving aspects of health care quality among underserved populations.[17] Studies have demonstrated that physicians and dentists from underrepresented minority groups are more likely to practice in high-need specialties and in underserved communities.[18] Some studies have suggested that a diverse workforce may improve health care professionals' cultural competence and better prepare them to respond to the needs of the entire population.[19] Literature on patient-physician concordance suggests that diversity may be important for quality of care with regard to patient communication, preventive care, and patient satisfaction.[20] A diverse workforce with a broader set of experiences in leadership roles can also aid in shaping research and policy agendas.[21]

[17] Marrast LM, Zallman L, Woolhandler S, et al. Minority physicians' role in the care of underserved patients: diversifying the physician workforce may be key in addressing health disparities.   JAMA Intern Med. 2014;174(2):289-291. doi:10.1001/jamainternmed.2013.12756; Wilbur K, Snyder C, Essary AC, et al. Developing workforce diversity in the health professions: a social justice perspective. Health Prof Educ. 2020;6(2):222-229. doi:10.1016/j.hpe.2020.01.002; Cantor JC, Miles EL, Baker LC, et al. Physician service to the underserved: implications for affirmative action in medical education. Inquiry. 1996;33(2):167-180.

[18] Goodfellow A, Ulloa JG, Dowling PT, et al. Predictors of primary care physician practice location in underserved urban or rural areas in the United States: a systematic literature review.   Acad Med. 2016;91(9):1313-1321. doi:10.1097/ACM.0000000000001203; Mertz EA, Wides CD, Kottek AM, et al. Underrepresented minority dentists: quantifying their numbers and characterizing the communities they serve.   Health Aff (Millwood). 2016;35(12):2190-2199. doi:10.1377/hlthaff.2016.1122

[19] Gurin P, Dey E, Hurtado S, Gurin G. Diversity and higher education: theory and impact on educational outcomes.   Harvard Educ Rev. 2002;72(3):330-367. doi:10.17763/ haer.72.3.01151786u134n051

[20] Shen MJ, Peterson EB, Costas-Muñiz R, et al. The effects of race and racial concordance on patient-physician communication: a systematic review of the literature.   J Racial Ethn Health Disparities. 2018;5(1):117-140. doi:10.1007/s40615-017-0350-4

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MHC Insight's Take

Nurses need help, but so do other occupations

While Registered Nurses ranked in the middle and LPNs ranked at the top of the MHWI, the absolute numbers of their combined shortages move them up into the top ten unhealthiest occupations. The occupations that ranked above them in terms of absolute value shortage are those that often do not receive a lot of attention – patient support occupations – because the educational pathway for these jobs is ambiguous and hard to track. Behavioral health occupations also have larger shortages, the need for which is discussed below.

Table 3: Occupations With the Highest Absolute Value Shortages

Occupation	Shortage
Home Health and Personal Care Aides	173,592
Nursing Assistants	60,454
Medical Assistants	24,581
Dental Assistants	15,162
Pharmacy Technicians	14,306
Occupations Requiring an MSW	8,280
Nurses	4,611
Physical Therapist Assistants	4,476
Phlebotomists	3,311
Clinical Laboratory Technologists and Technicians	3,019
Dental Hygienists	2,774

Population health statistics point to the need for a more robust behavioral health workforce

Furthermore, the crisis surrounding behavioral health occupations cannot be overlooked – as the Michigan population demonstrates more need for assistance, the gaps in care provision around the state will be acutely felt. From February 1 to 13, 2023, 29.9 percent of adults in Michigan reported symptoms of anxiety and/or depressive disorder, which is comparable to the 32.3 percent of adults in the U.S.[22] Drug overdose death rates have increased in Michigan from 14.3 per 100,000 in 2011 to 31.5 per 100,000 in 2021.[23] In 2021, there were 2,536 opioid overdose deaths in Michigan, which accounted for 82 percent of all drug overdose deaths in the state.[24] Across the U.S., opioid overdose deaths accounted for 75 percent of all drug overdose deaths in the country in 2021.[25] In 2021, Michigan's

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[22] *Mental Health in Michigan.* (2024). KFF. https://www.kff.org/statedata/mental-health-and-substance-use-state-fact-sheets/michigan/

[23] Ibid.

[24] Ibid.

[25] Ibid.

age-adjusted suicide rate was higher than the national level.[26] Finally, in a new report from Altarum found that behavioral health provider capacity was especially low in the northern half of the lower peninsula of Michigan, where four counties - Iron, Keweenaw, Montmorency, and Oscoda - have no psychiatrist, no psychologist, and no substance use disorder (SUD) treatment facility.[27] Expanding access to behavioral health care in all of Michigan to the same rates of care seen in the best access areas of the state would improve access for 336,000 people with a mental illness and 85,000 people with a SUD.[28] All of this establishes the need for more growth in all behavioral health occupations – from psychiatrists to substance abuse counselors.

Building more career pathways could help individuals in high-growth, low-wage occupations stay and advance in the healthcare workforce.

Ultimately, with the largest absolute value (and in some cases, percentage) shortages occurring in occupations that do not require much education beyond high school, it becomes critical to ask if these occupations are offering enough opportunities for career progression. Indeed, building more career pathways and apprenticeships could help individuals in high-growth, low wage occupations stay in the healthcare workforce and advance. This will be even more crucial as the population ages, and home health occupations become necessary to assist with Michiganders aging in place. As a result, Community Health Workers and Home Health Care Aides are two of the most critical occupations essential to the next ten years. Moreover, the shortages across the board for almost all healthcare occupations point to the need for a public awareness campaign on par with Science, Technology, Engineering, and Math (STEM) awareness to drive more interest in health careers and more coordination between employers and educators to strengthen the pipeline. This is vital in particular for nursing and patient support occupations, whose large shortages show no signs of abating over the next ten years.

Promoting career pathways can help healthcare professionals better reflect the communities they serve

Finally, growth in the diversity of healthcare practitioners is essential to better healthcare outcomes for the population. While some occupations are relatively more diverse – in particular LPNs, behavioral health and patient support occupations – many of these occupations are lower-wage earning. This means that while they are a better reflection of the communities they serve, professionals in these occupations may consider leaving healthcare if they find higher wages in another industry. Healthcare employers must work with partners to find creative ways to invest in the healthcare careers of their lower-wage, more diverse professionals.

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[26] Ibid.

[27] Access to Behavioral Health Care Remains a Challenge in Michigan (2022, December 13). Altarum. altarum.org/news-and-insights/access-behavioral-health-care-michigan-2019-data-update

[28] Ibid.

APPENDIX

Michigan Health Workforce Index (Detailed)

Occupation	2023	2033	2023-2033 % Change	Turnover
Optometrists	1,641	1,856	13%	14%
Physician Group	27,602	28,634	3%	14%
Nurse Practitioners	1,641	10,674	35%	21%
Diagnostic Medical Sonographers	3,019	3,387	12%	21%
Physician Assistants	5,650	6,852	21%	24%
Licensed Practical and Licensed Vocational Nurses	11,382	12,541	10%	50%
Physical Therapists	7,683	9,035	18%	20%
Paramedics	3,261	3,618	11%	26%
Occupational Therapists	4,696	5,322	13%	28%
Community Health Workers	1,773	2,059	16%	56%
Radiation Therapists	412	427	4%	18%
Dentists, General	4,575	4,811	5%	12%
Radiologic Technologists and Technicians	6,892	7,215	5%	23%
Respiratory Therapists	4,795	5,370	12%	21%
Registered Nurses	104,681	110,862	6%	27%
Social Workers (just BSW)	15,248	16,516	8%	37%
Occupational Therapy Assistants	1,620	1,999	23%	79%
Nurse Midwives	287	300	5%	28%
Surgical Technologists	4,001	4,220	5%	26%
Pharmacists	10,582	11,146	5%	20%
Nuclear Medicine Technologists	750	755	1%	19%
Home Health and Personal Care Aides	96,808	115,116	19%	86%
Emergency Medical Technicians	4,517	5,086	13%	41%
Physical Therapist Assistants	3,572	4,448	25%	76%
Magnetic Resonance Imaging Technologists	1,644	1,736	6%	23%
Cardiovascular Technologists and Technicians	2,413	2,521	4%	25%
Nurse Anesthetists	3,651	3,884	6%	20%
Medical Assistants	25,753	28,715	12%	68%
Pharmacy Technicians	15,180	16,091	6%	51%
Phlebotomists	3,045	3,323	9%	70%
Occupations Requiring an MSW	23,914	27,492	15%	42%
Psychologists	5,039	5,551	10%	21%
Clinical Laboratory Technologists and Technicians	10,687	11,171	5%	32%
Dental Hygienists	7,679	8,214	7%	32%
Dental Assistants	11,878	12,737	7%	66%
Nursing Assistants	42,669	44,269	4%	90%

Occupation	2023 – 2033 Openings	2021 Educational Completions	10 Year Predicted Completions	Openings minus Completions
Optometrists	807	35	350	457
Physician Group	8,843	827	8,270	573
Nurse Practitioners	6,862	434	4,340	2,522
Diagnostic Medical Sonographers	2,031	209	2,090	–59
Physician Assistants	4,294	229	2,290	2,004
Licensed Practical and Licensed Vocational Nurses	10,318	1,188	11,880	520
Physical Therapists	4,573	352	3,520	1,053
Paramedics	2,000	84	840	1,160
Occupational Therapists	3,363	309	3,090	273
Community Health Workers	2,171	178	1,780	391
Radiation Therapists	193	176	1,760	–1,567
Dentists, General	1,668	288	2,880	–1,212
Radiologic Technologists and Technicians	4,115	403	4,030	85
Respiratory Therapists	3,097	158	1,580	1,517
Registered Nurses	65,211	6,060	60,600	4,611
Social Workers (just BSW)	13,467	1,375	13,750	–283
Occupational Therapy Assistants	2,862	89	890	1,972
Nurse Midwives	149	11	110	39
Surgical Technologists	2,693	230	2,300	393
Pharmacists	4,767	328	3,280	1,487
Nuclear Medicine Technologists	364	15	150	214
Home Health and Personal Care Aides	174,072	48	480	173,592
Emergency Medical Technicians	4,061	344	3,440	621
Physical Therapist Assistants	6,356	188	1,880	4,476
Magnetic Resonance Imaging Technologists	1,004	10	100	904
Cardiovascular Technologists and Technicians	1,649	105	1,050	599
Nurse Anesthetists	1,766	40	400	1,366
Medical Assistants	37,771	1,319	13,190	24,581
Pharmacy Technicians	15,166	86	860	14,306
Phlebotomists	4,381	107	1,070	3,311
Occupations Requiring an MSW	24,080	1,580	15,800	8,280
Psychologists	3,587	129	1,290	2,297
Clinical Laboratory Technologists and Technicians	7,544	738	7,380	3,019
Dental Hygienists	5,834	306	3,060	2,774
Dental Assistants	17,962	280	2,800	15,162
Nursing Assistants	63,814	336	3,360	60,454

Occupation	Ratio Shortage	2012 Wages	2022 Wages	Wage Growth '12-'22	Percentage Growth '12-'22
Optometrists	25%	$46.34	$62.02	$15.68	34%
Physician Group	2%	$90.79	$126.16	$35.37	39%
Nurse Practitioners	24%	$42.06	$52.41	$10.35	25%
Diagnostic Medical Sonographers	-2%	$27.50	$32.68	$5.18	19%
Physician Assistants	29%	$42.38	$55.55	$13.17	31%
Licensed Practical and Licensed Vocational Nurses	4%	$20.30	$27.84	$7.54	37%
Physical Therapists	12%	$37.93	$44.75	$6.81	18%
Paramedics	32%	$13.91	$22.42	$8.51	61%
Occupational Therapists	5%	$31.36	$39.55	$8.20	26%
Community Health Workers	19%	$16.32	$21.83	$5.51	34%
Radiation Therapists	-367%	$32.13	$39.54	$7.41	23%
Dentists, General	-25%	$75.91	$86.49	$10.57	14%
Radiologic Technologists and Technicians	1%	$24.20	$30.72	$6.52	27%
Respiratory Therapists	28%	$25.44	$31.00	$5.56	22%
Registered Nurses	4%	$30.69	$38.04	$7.35	24%
Social Workers (just BSW)	-2%	$22.51	$26.80	$4.29	19%
Occupational Therapy Assistants	99%	$20.58	$27.88	$7.30	35%
Nurse Midwives	13%	$44.43	$58.09	$13.66	31%
Surgical Technologists	9%	$19.79	$24.42	$4.63	23%
Pharmacists	13%	$53.67	$63.54	$9.87	18%
Nuclear Medicine Technologists	28%	$30.03	$39.10	$9.07	30%
Home Health and Personal Care Aides	151%	$9.80	$13.69	$3.90	40%
Emergency Medical Technicians	12%	$13.99	$16.39	$2.40	17%
Physical Therapist Assistants	101%	$21.00	$27.48	$6.47	31%
Magnetic Resonance Imaging Technologists	52%	$26.82	$34.80	$7.97	30%
Cardiovascular Technologists and Technicians	24%	$23.66	$30.07	$6.41	27%
Nurse Anesthetists	35%	$79.35	$94.16	$14.81	19%
Medical Assistants	86%	$13.32	$17.69	$4.37	33%
Pharmacy Technicians	89%	$13.15	$17.74	$4.59	35%
Phlebotomists	100%	$13.18	$17.85	$4.67	35%
Occupations Requiring an MSW	30%	$21.22	$23.92	$2.70	13%
Psychologists	41%	$33.88	$35.76	$1.88	6%
Clinical Laboratory Technologists and Technicians	27%	$21.20	$25.90	$4.71	22%
Dental Hygienists	34%	$29.60	$34.93	$5.33	18%
Dental Assistants	119%	$16.17	$20.60	$4.43	27%
Nursing Assistants	137%	$12.30	$17.35	$5.05	41%

*Ratio Shortage takes the Shortage calculated in Openings – Completions and divides it by the total employment in the occupation in order to see how large the shortage is relative to the occupation.

Occupation	Rank Growth	Rank Shortage	Rank Wage	Rank Turnover	Sum Rank
Optometrists	10	18	9	3	40
Physician Group	35	6	4	2	47
Nurse Practitioners	1	16	21	11	49
Diagnostic Medical Sonographers	12	3	28	9	52
Physician Assistants	4	22	12	15	53
Licensed Practical and Licensed Vocational Nurses	16	7	5	27	55
Physical Therapists	6	11	32	7	56
Paramedics	15	24	1	17	57
Occupational Therapists	9	9	20	21	59
Community Health Workers	7	15	10	29	61
Radiation Therapists	34	1	24	4	63
Dentists, General	28	2	34	1	65
Radiologic Technologists and Technicians	30	5	19	14	68
Respiratory Therapists	13	20	26	10	69
Registered Nurses	24	8	22	19	73
Social Workers (just BSW)	19	4	27	24	74
Occupational Therapy Assistants	3	31	6	34	74
Nurse Midwives	29	13	14	20	76
Surgical Technologists	26	10	23	18	77
Pharmacists	27	14	30	6	77
Nuclear Medicine Technologists	36	21	15	5	77
Home Health and Personal Care Aides	5	36	3	35	79
Emergency Medical Technicians	11	12	33	25	81
Physical Therapist Assistants	2	33	13	33	81
Magnetic Resonance Imaging Technologists	25	28	16	13	82
Cardiovascular Technologists and Technicians	32	17	18	16	83
Nurse Anesthetists	22	26	29	8	85
Medical Assistants	14	29	11	31	85
Pharmacy Technicians	23	30	8	28	89
Phlebotomists	18	32	7	32	89
Occupations Requiring an MSW	8	23	35	26	92
Psychologists	17	27	36	12	92
Clinical Laboratory Technologists and Technicians	31	19	25	23	98
Dental Hygienists	21	25	31	22	99
Dental Assistants	20	34	17	30	101
Nursing Assistants	33	35	2	36	106

Occupation	Overall Rank	2023 Rank	Change
Optometrists	1	2	1
Physician Group	2	12	10
Nurse Practitioners	3	1	–2
Diagnostic Medical Sonographers	4	8	4
Physician Assistants	5	7	2
Licensed Practical and Licensed Vocational Nurses	6	16	10
Physical Therapists	7	13	6
Paramedics	8	15	7
Occupational Therapists	9	6	–3
Community Health Workers	10	18	8
Radiation Therapists	11	5	–6
Dentists, General	12	3	–9
Radiologic Technologists and Technicians	13	11	–2
Respiratory Therapists	14	10	–4
Registered Nurses	15	17	2
Social Workers (just BSW)	16	30	14
Occupational Therapy Assistants	17	28	11
Nurse Midwives	18	14	–4
Surgical Technologists	19	25	6
Pharmacists	20	21	1
Nuclear Medicine Technologists	21	9	–12
Home Health and Personal Care Aides	22	24	2
Emergency Medical Technicians	23	32	9
Physical Therapist Assistants	24	29	5
Magnetic Resonance Imaging Technologists	25	19	–6
Cardiovascular Technologists and Technicians	26	22	–4
Nurse Anesthetists	27	4	–23
Medical Assistants	28	23	–5
Pharmacy Technicians	29	34	5
Phlebotomists	30	27	–3
Occupations Requiring an MSW	31	20	–11
Psychologists	32	26	–6
Clinical Laboratory Technologists and Technicians	33	31	–2
Dental Hygienists	34	33	–1
Dental Assistants	35	36	1
Nursing Assistants	36	35	–1

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