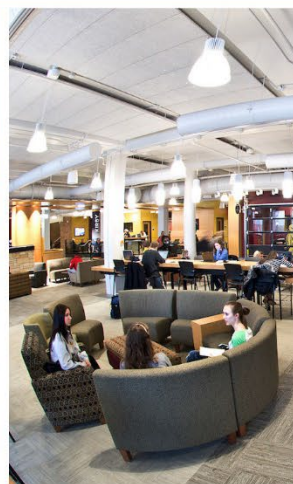


UMD Healthcare Program Labor Market and Skills Analysis

February 2025



**BUREAU OF BUSINESS AND
ECONOMIC RESEARCH**



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The BBER is an unbiased research entity. Publication and dissemination of this report, or any of its data, is not an endorsement by the BBER/UMD of any of the programs, organizations, or entities mentioned in this report.

*Bureau of Business and Economic Research
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Executive Summary

Northeastern Minnesota is facing demographic shifts, including an aging population, declining college enrollments, and increased diversity among younger generations. These trends present challenges, especially in healthcare, where over a quarter of the region’s workforce is employed.

As the region’s largest public university, the University of Minnesota Duluth (UMD) is well-positioned to help address these challenges. However, despite graduating more than 500 students annually from healthcare-related programs, the university is not widely seen as a healthcare educational institution. It lacks undergraduate programs in nursing and other traditional healthcare fields, and its medical and pharmacy programs are managed by the University of Minnesota (U of M) Twin Cities campus.

The U of M’s recent proposal for an integrated partnership with Essentia Health, a health system serving Minnesota, North Dakota, and Wisconsin, presents an excellent opportunity for UMD to play a larger role in regional healthcare development. Several UMD faculty and staff have already begun collaborating with local healthcare representatives to better support students and ensure their success in the healthcare sector. The Bureau of Business and Economic Research conducted this labor market and skills analysis to assist these efforts.

This analysis assessed how well UMD’s academic programs align with regional healthcare needs. The research team reviewed UMD’s healthcare-related programs, identified key occupations, and offered recommendations for enhancing the university’s role in healthcare workforce development.

In Chapter II, Healthcare-Related Programs, the research team identified 15 UMD programs offering pathways into healthcare careers, including Psychology, Biology, Biochemistry, and Exercise & Rehabilitation Sciences. Master’s programs like Psychology and Social Work were also noted.

Using Lightcast’s “Job Postings” report, we then identified 21 healthcare occupations in demand

across Minnesota that align with UMD’s programs, focusing on jobs requiring zero to three years of experience. These occupations were grouped into four categories: High-Growth Professions (high job growth, high wages), Jobs in Demand (high growth, lower wages), Stable Careers (above-average wages, slower growth), and Foundational Roles (lower wages, slow growth). Occupations include nursing assistants, pharmacy technicians, community health workers, counselors, and speech-language pathologists.

For each of the 21 selected occupations, we provided a detailed labor market and skills analysis, including job descriptions, relevant academic programs, qualifications, regional demand, wage data, leading employers, and additional considerations for UMD students. This analysis is shown in Chapter III.

A SWOT analysis of UMD’s healthcare programs and workforce development revealed several strengths, weaknesses, opportunities, and threats (Chapter IV). Strengths include UMD’s partnerships with local institutions, strong internship support, and access to advanced equipment and labs. The university also offers valuable courses that help students develop essential soft skills, and its career center provides critical guidance on certifications and career planning.

Weaknesses include limited partnerships with key local healthcare providers, the complexity of coordinating medical programs through the U of M Twin Cities, and challenges in securing hands-on experience due to software access restrictions. Additionally, there are structural barriers within faculty incentives that hinder workforce development collaboration.

Opportunities for growth include fostering a culture that supports internships (especially paid internships), expanding volunteer opportunities, and aligning program outcomes with workforce needs. Threats, such as unpaid internships and low diversity in the healthcare workforce, highlight ongoing challenges that need addressing to ensure equitable access and better career preparation.



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UMD Healthcare Program Labor Market and Skills Analysis

I. Background

In northeastern Minnesota, demographic shifts—including an aging population,¹ recent declines in college enrollments,² and increasing diversity among youth and working-age populations³—are creating challenges for both employers and educational institutions as they now must work harder than ever to recruit and train a workforce that is demographically quite different than previous generations.

These demographic shifts are occurring in many parts of the state, but they are particularly challenging for Minnesota's northeastern region. While more than two-thirds of Minnesota's 87 counties are projected to decline in population between 2024 and 2053, the northeastern region is predicted to experience the greatest population losses (-48,642 residents), due primarily to its aging population.⁴ Northeastern Minnesota is also much less racially and ethnically diverse (90% of the population identified as white) than the state or national average (77% and 61% identified as white, respectively), as of 2022.⁵

No other sector in northeastern Minnesota is more affected by these changes than healthcare, which employed nearly one-quarter of the region's workforce in 2023.⁶ The next largest sector in the region, retail trade, employed 12% of total jobs. The healthcare sector is predicted to undergo robust growth over the next decade,⁷ with an incredibly high demand for workers requiring post-secondary education.⁸

To meet the increasing demand for skilled workers in the healthcare sector, there is a critical need for employers to work closely with educational institutions to recruit and prepare students for the healthcare workforce. As northeastern Minnesota's largest public four-year university, the University of Minnesota Duluth (UMD)—which enrolls nearly 10,000 students each year—should be an essential partner in these efforts.

There are numerous efforts currently underway to develop training programs and career pathways for individuals interested in working in the healthcare sector in northeastern Minnesota. Yet, to date, UMD's involvement in these efforts has been limited. For example, the Duluth Workforce Development Board—a local organization that helps connect job seekers with training and employment opportunities—has an active healthcare working group whose charge is to create a bridge between educational institutions and employers by articulating career pathways and stackable credentials. The committee has 38 members representing numerous employers and educational institutions (with multiple representatives from the College of St. Scholastica, Lake Superior College, and Northwood Technical College) but does not include a representative from UMD.

¹ Minnesota State Demographic Center (<https://mn.gov/admin/demography/data-by-topic/population-data/our-projections/#:~:text=These%20projections%20indicate%20that%20statewide,third%20of%20the%20total%20population.>)

² National Center for Education Statistics (https://nces.ed.gov/programs/digest/d21/tables/dt21_304.10.asp)

³ Midwestern Higher Education Compact (<https://www.mhec.org/dashboard/high-school-graduate-projections>)

⁴ Minnesota State Demographic Center (<https://mn.gov/admin/demography/data-by-topic/population-data/our-projections/#:~:text=These%20projections%20indicate%20that%20statewide,third%20of%20the%20total%20population.>)

⁵ U.S. Census Bureau American Community Survey 2022 one-year estimates, B02001 Race (data.census.gov)

⁶ Quarterly Census of Employment and Wages, 2023 (<https://mn.gov/deed/data/data-tools/qcew/>)

⁷ Minnesota DEED Employment Outlook Projections (<https://mn.gov/deed/data/data-tools/employment-outlook/>)

⁸ Minnesota DEED Job Vacancy Survey (<https://mn.gov/deed/data/data-tools/job-vacancy/jvs-findings.jsp>)

There are several possible explanations for UMD’s limited engagement with regional healthcare employers. First, despite graduating more than 500 students each year in one of several healthcare-related programs⁹—including Biochemistry, Social Work, Healthcare Management, and Public Health—UMD does not have undergraduate programs in Nursing or some of the other more traditional healthcare fields. Second, the Duluth campus is home to branches of the University of Minnesota’s Medical School and College of Pharmacy, the programs are administered by the University of Minnesota Twin Cities campus, which makes having local partnerships more challenging. However, starting in fall of 2025, UMD will switch to a four-year medical school program allowing students to make more meaningful relationships with faculty and remove the need to move to the Twin Cities for the second half of their program.¹⁰ This new program will hopefully help alleviate some of these challenges and strengthen local partnerships.

In fall 2023, several UMD faculty members began working with representatives from the local healthcare sector to examine ways to better support UMD students and set them up for continued success in potential healthcare sector careers. In response, UMD leadership asked the Labovitz School of Business and Economics’ Bureau of Business and Economic Research (BBER) to assist with those efforts by contributing a labor market and skills analysis (comparing common healthcare occupations with UMD curriculum and graduate information).

This report integrates academic program, labor market, and educational data from Lightcast, O*NET, and other relevant sources. It also incorporates insights from interviews with UMD faculty, healthcare professionals, and workforce development experts. The analysis is structured as follows:

Healthcare-Related Programs: A review of UMD’s programs that have natural pathways into healthcare careers

Related Occupations: A comprehensive look at the healthcare occupations that best align with UMD’s healthcare-related programs

SWOT Analysis: A summary of the strengths, weaknesses, opportunities, and threats related to UMD’s healthcare programs and corresponding occupations, using feedback from UMD faculty and industry representatives

⁹ Minnesota Department of Employment and Economic Development (DEED) Graduate Employment Outcomes (<https://mn.gov/deed/data/data-tools/graduate-employment-outcomes/>)

¹⁰ University of Minnesota Medical School, Duluth Campus to shift to a four-year program in fall 2025 (<https://med.umn.edu/news/university-minnesota-medical-school-duluth-campus-shift-four-year-program-fall-2025#:~:text=MINNEAPOLIS%2FST.,of%20medical%20school%20in%20Duluth.>)

II. Healthcare-Related Programs

The research team identified all the University of Minnesota Duluth (UMD) programs with relevance to the healthcare sector using Lightcast’s “Program Table” report. Lightcast is a labor market analytics firm that provides data on workforce trends, including educational program completions. The software’s “Program Table” report provides both UMD and regional (northeastern Minnesota) program completions—i.e., the number of students completing a degree with that major—grouping them by Classification of Instructional Programs (CIP) codes from the National Center for Education Statistics.¹¹ The team selected all UMD programs with graduates in 2023 that listed healthcare as a career pathway. In total, 15 unique programs were identified, as shown in Table 1 below.¹²

Table 1. UMD Healthcare-Related Programs (2023 UMD and Regional Completions)

<i>CIP Code</i>	<i>Corresponding UMD Major</i>	<i>UMD Completions</i>	<i>Bachelor's</i>	<i>Master's</i>	<i>Regional Completions</i>
42.0101	Psychology	173	155	18	265
26.0101	Biology/Biological Sciences	151	151	0	217
44.0701	Social Work	67	37	30	185
26.0202	Biochemistry	51	51	0	60
31.0505	Exercise & Rehabilitation Sciences	51	51	0	52
40.0501	Chemistry	46	35	11	59
51.0201	Communications Sciences and Disorders	44	19	25	44
51.2207	Public Health	29	29	0	29
11.0802	Management Information Systems	27	27	0	27
51.0701	Health Care Management	23	23	0	23
27.0501	Statistics and Actuarial Science	20	20	0	20
26.9999	Integrated Biosciences	10	0	10	10
13.1314	Physical Education	7	7	0	42
30.2501	Cognitive Science	5	5	0	5
26.0102	Biomedical Sciences	3	3	0	3

SOURCE: LIGHTCAST

As shown in the table, Psychology and Biology are the two largest UMD programs, with 173 and 151 completions in 2023, respectively. Other popular UMD programs with a career pathway into the healthcare sector include Social Work, Biochemistry, and Exercise & Rehabilitation Sciences. Each of these programs had more than 50 completions in 2023.

Several of UMD’s healthcare-related programs also offer master’s degrees: Psychology, Social Work, Chemistry, Communications Sciences and Disorders, and Integrated Biosciences.

¹¹ For a list of terms and definitions used throughout this report, see Appendix A.

¹² While UMD offers several programs with courses, minors, and/or credentials that align with careers in the healthcare sector—Computer Science and Spanish are examples—the research team chose to limit our search to the 15 programs that Lightcast identified as being directly related to the healthcare sector. However, some of the healthcare-adjacent programs, courses, minors, and/or credentials offered at the school are discussed in Chapter IV, SWOT Analysis.

III. Related Occupations

To identify the occupations most closely aligned to University of Minnesota Duluth (UMD)'s healthcare-related programs, we used Lightcast's "Job Postings" report to search for jobs posted in the past year (November 2023–October 2024) within the healthcare and social assistance industry in the state of Minnesota. We limited our search to only jobs requiring zero to three years of work experience and only those that aligned with one of UMD's 15 healthcare-related programs.

Any occupation with more than 20 unique postings during the period was included in the analysis. Additionally, occupations specifically noted by Essentia Health's human resources professionals or UMD faculty as strong career options for UMD graduates were added.¹³ The initial list contained roughly 30 occupations, but those with similar training and educational requirements were grouped together for clarity (e.g., the Social Worker occupation category on page 26 consists of three separate social work-related occupations).

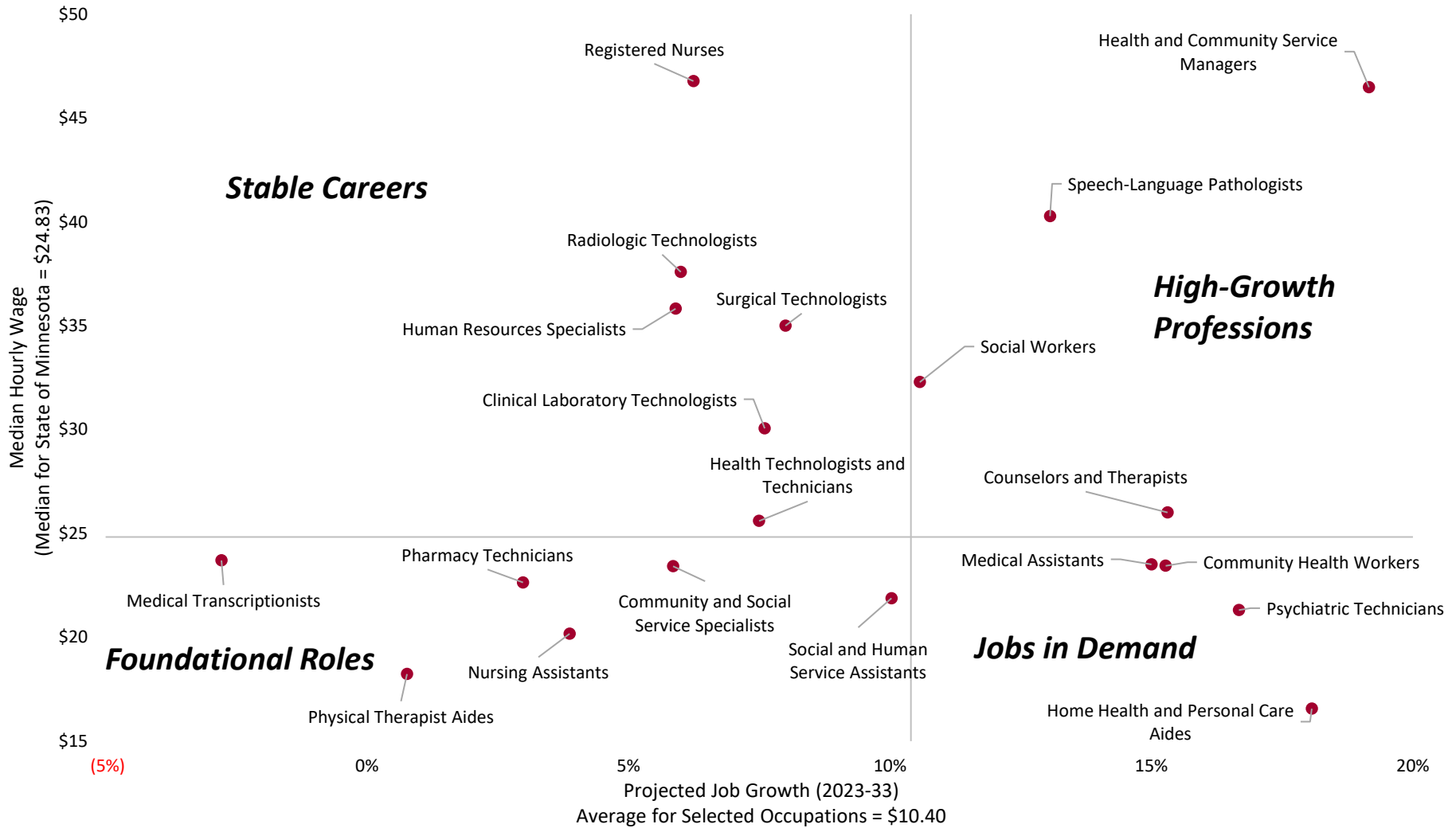
The final 21 occupations and/or occupational clusters are shown in Figure 1 on the next page. The figure compares the occupation's earnings (as represented by the occupation's median hourly earnings in Minnesota in 2023) and expected growth (as represented by its projected employment growth rate in the coming decade). Occupations on the far right are those that are projected to see very high levels of growth in the next decade, and occupations near the top of the chart have the highest median wage.

The graph is divided into four quadrants. The upper right quadrant, *High-Growth Professions*, shows occupations that are projected to see higher-than-average job growth in the coming decade and pay higher-than-average wages (based on the median wage in Minnesota in 2023). It should be noted that the average growth rate of 10.4%—as represented by the center axis line in the figure—is the average of the selected occupations and not the average for all occupations statewide (4%). By contrast, the median wage (\$24.83/hr) represents the median wage for the state of Minnesota in 2023. One occupation cluster included in the High-Growth Professions category is Physician Assistants/Nurse Practitioners. This group has a projected growth rate of 33% and a median wage of \$63.05—significantly higher than any other occupation. If the chart's range were extended, this cluster would appear in the upper right-hand corner of the graph, indicating both high growth and high wages.

The lower right quadrant, *Jobs in Demand*, shows occupations that are expected to have high rates of growth in the coming decade but tend to have lower median hourly earnings. The upper left quadrant, *Stable Careers*, shows occupations that earn above the median hourly wage but are not expected to grow rapidly in the coming decade. Finally, the lower left quadrant, *Foundational Roles*, shows occupations that have lower-than-average wages and lower-than-average projected growth rates.

¹³ These additional occupations are behavioral health techs, community health workers, histology techs, medical assistants, medical lab techs, nursing assistants, pharmacy techs, post-baccalaureate nursing jobs, radiologic technologists, rehab aides, research assistants, research coordinators, scribes, speech-language pathologists, and surgical technologists. The research team used Lightcast's "Job Postings" report to search for these specific job titles and then added any occupations that were not already on our list.

Figure 1. Projected Job Growth (2023-2033) and Median Hourly Wage for Healthcare-Related Occupations



SOURCE: LIGHTCAST, BBER

Note: The Physician Assistants/Nurse Practitioners occupation group is not shown on this graph because its projected growth and median wage are significantly higher than all other occupations in the analysis. If the chart's range were extended, this cluster would appear in the upper right-hand corner of the graph.

The 21 occupations and occupation clusters noted in Figure 1 are also shown in Table 2 below, grouped by the four types and shown in order of total number of jobs per occupation type. Each occupation shown has its corresponding total number of jobs statewide in 2023, the projected job growth for the coming decade, and the median hourly earnings.

Table 2. Statewide 2023 Employment Levels, Projected Growth (2023-2033), and Earnings for Occupations with Relevance to UMD Programs

Type	Occupation	2023 Jobs	2023 - 2033 % Change	Median Hourly Earnings
Foundational Roles	Nursing Assistants	27,999	4%	\$20.17
	Social and Human Service Assistants	12,849	10%	\$21.88
	Pharmacy Technicians	8,055	3%	\$22.64
	Community and Social Service Specialists	3,561	6%	\$23.42
	Medical Transcriptionists	450	(3%)	\$23.70
	Physical Therapist Aides	304	1%	\$18.23
Jobs in Demand	Home Health and Personal Care Aides	117,905	18%	\$16.56
	Medical Assistants	12,210	15%	\$23.51
	Psychiatric Technicians	1,820	17%	\$21.31
	Community Health Workers	955	15%	\$23.44
Stable Careers	Registered Nurses	67,993	6%	\$46.78
	Human Resources Specialists	17,639	6%	\$35.82
	Clinical Laboratory Technologists/Technicians	4,645	8%	\$30.06
	Radiologic Technologists	4,153	6%	\$37.59
	Health Technologists and Technicians	2,033	7%	\$25.60
	Surgical Technologists	1,626	8%	\$35.00
High-Growth Professions	Counselors and Therapists	17,123	15%	\$26.01
	Health and Community Service Managers	16,404	19%	\$46.49
	Social Workers	14,668	11%	\$32.28
	Physician Assistants/Nurse Practitioners	9,111	33%	\$63.05
	Speech-Language Pathologists	3,281	13%	\$40.28
		AVERAGE		10.4%

SOURCE: LIGHTCAST

The rest of this chapter presents an analysis of the 21 occupations or occupational clusters, detailing the following for each:

- A comprehensive description of the occupation¹⁴
- Relevant academic programs available in northeastern Minnesota

¹⁴ For each occupation, the occupational description was taken from the Occupational Information Network (O*NET), an occupational database developed by the U.S. Department of Labor. All other data came from Lightcast, a labor market software that provides data on workforce trends, employment projections, and educational program completions.

- Required education, training, or work experience
- Common job titles within the field
- Key skills necessary for success
- Essential qualifications and certifications
- Regional demand indicators, such as job postings and monthly hires
- Median hourly wage data
- Leading employers hiring for the occupation
- Additional considerations for students and UMD related to the field

Foundational Roles

Foundational Roles are occupations with lower-than-average wages and lower-than-average projected growth rates (see Figure 1 on page 5). These entry-level healthcare positions serve as essential support within the industry. Though entry-level, most require specific certifications or specialized training. According to Lightcast’s job growth projections, demand for these roles should remain steady with modest annual job growth across most occupations—except for medical transcriptionists, whose numbers have been declining.

Nursing Assistants

Nursing assistants provide or assist with basic care or support under the direction of onsite licensed nursing staff. They perform duties such as monitoring health status, feeding, bathing, dressing, grooming, toileting, or ambulation of patients in a health or nursing facility. Additional job duties may include medication administration and other health-related tasks. Also, part of this job category are nursing care attendants, nursing aides, and nursing attendants (O*NET).

Table 3 on the next page shows the educational requirements, occupational requirements, and job demand information for the occupation,¹⁵ using data from Lightcast, a labor market software. Occupational demand is shown for the Duluth metropolitan statistical area (MSA)—which includes St. Louis County and Carlton County in Minnesota and Douglas County in Wisconsin—as well as for the state of Minnesota.

UMD does not currently offer any nursing programs. However, this occupation may be a viable option for UMD students in related fields who may be willing to pursue certified nursing assistant (CNA) training. Nursing assistant positions offer competitive pay and the opportunity to gain valuable experience working in a medical setting.

According to Lightcast, nursing assistant positions in the Duluth area are projected to decline by 9% by 2033, while statewide employment is expected to grow by 4%. Although nursing assistant jobs are not growing as quickly as other healthcare roles, the occupation is large enough (nearly 28,000 employed statewide) that even slow growth will result in many available positions. With no education required beyond becoming a CNA, this remains a viable job option for current students.

All nursing assistant positions require certification obtained through a training program and testing process. For students interested in pursuing this occupation, there are several local CNA programs offered by institutions other than UMD. The College of St. Scholastica offers a [78-hour CNA training course](#) that is partially online; Lake Superior College offers a three-credit [CNA program](#); and [CareerForce](#) often provides CNA trainings in partnership with Lake Superior College. According to the College of St. Scholastica’s CNA program website, many employers will pay for the cost of a nursing assistant training up front with an agreed-upon work commitment.

¹⁵ All occupational demand data presented in the report reflects the period from November 2023-October 2024.

Table 3. Nursing Assistants Occupational Requirements and Demand

<i>Occupation(s)</i>	<i>Nursing Assistants</i>	
Educational requirements		
Relevant UMD program(s)	N/A	
Other local program(s)	Nursing Assistant	
Typical on-the-job training	None	
Work experience required	None	
Typical entry level education	Postsecondary nondegree award	
Common job titles	Certified nursing assistants, nursing assistants, trained medication aides	
Occupational information		
Specialized skills	Nursing, vital signs, patient transfer	
Software skills	Epic EMR, Microsoft Office, Cerner HER	
Common skills	Communication, customer service, compassion	
Required qualifications	Certified nursing assistant	
Preferred/other qualifications	Registered nurse, licensed practical nurse	
Occupational demand	Duluth MSA	State of Minnesota
Employment (2023)	1,618	27,999
Projected job growth (2023-2033)	-9%	4%
Hourly median wage	\$18.95	\$20.17
Diversity % of occupation	15%	38%
Average monthly postings	48	1,360
Average monthly hires	100	1,932
Top companies hiring	Essentia Health, Interim HealthCare	Good Samaritan Society, Essentia Health, Sanford Health

SOURCE: LIGHTCAST, O*NET

After completing one of the above training options, students will be qualified to take the Minnesota [Nursing Assistant knowledge and skills test](#), the official certification exam required for individuals who want to be listed on the Minnesota Nursing Assistant Registry and work as CNAs in the state of Minnesota.¹⁶

Though not a prerequisite for CNA training, a Basic Life Support (BLS) certification is highly recommended. This is required by most employers and is a separate class/certification. In Duluth, both the [American Red Cross](#) and [HeartCert](#) offer BLS classes.

Social and Human Service Assistants

Social and human service assistants are responsible for helping other social and human service professionals in providing client services in a wide variety of fields, such as psychology, rehabilitation, or social work, including support for families. They may assist clients in identifying and obtaining available benefits and social and community services. Additionally, they may assist social workers with developing, organizing, and conducting programs to prevent and resolve problems relevant to substance abuse, human relationships, rehabilitation, or dependent care (O*NET).

¹⁶ For a complete list of all the programs and certifications mentioned throughout this report that are offered at institutions other than UMD, see Appendix B.

Table 4 shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

Table 4. Social and Human Service Assistants Occupational Demand and Requirements

<i>Occupation(s)</i>	<i>Social and Human Service Assistants</i>	
Educational requirements		
Relevant UMD program(s)	Psychology, Social Work	
Other local program(s)	Liberal Arts and Sciences	
Typical on-the-job training	Short-term on-the-job training	
Work experience required	None	
Typical entry level education	High school diploma or equivalent	
Common job titles	Life enrichment assistants, shelter advocates, supervised visitation workers	
Occupational information		
Specialized skills	Social work, crisis intervention, human services	
Software skills	Microsoft Office, Workday, SQL Server Integration Services (SSIS)	
Common skills	Communication, advocacy, planning	
Required qualifications	Cardiopulmonary resuscitation (CPR) certification, first aid certification	
Preferred/other qualifications	Certified nursing assistant	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	948	12,849
Projected job growth (2023-2033)	3%	10%
Hourly median wage	\$20.62	\$21.88
Annual median wage	\$42,893.85	\$45,510.40
Diversity % of occupation	20%	37%
Average monthly postings	9	376
Average monthly hires	45	655
Top companies hiring	Lutheran Social Service of Minnesota, St. Louis County, Residential Services Inc.	Eben Ezer, State of Minnesota, Lutheran Social Service of Minnesota

SOURCE: LIGHTCAST, O*NET

Social and human services assistant jobs do not require a bachelor’s degree and are not highly paid roles. However, these positions could offer Psychology and Social Work students at UMD an opportunity to gain practical experience while completing their degrees. These roles could offer students opportunities to develop key skills in social work, crisis intervention, and human services.

According to Lightcast, job growth of 3% by 2033 is expected in the Duluth area, compared to 10% statewide. This is on par with other medical occupations in Minnesota. On average, 45 social and human service assistants are hired in the Duluth area every month.

Becoming a social and human services assistant doesn’t require education beyond high school, but some certifications are often required. Cardiopulmonary resuscitation (CPR) and first aid certification are desired by employers and can be attained through online programs and in-person classes offered through the [American Red Cross](#), the [YMCA](#), and [HeartCert CPR](#). Being a CNA is not required for most positions but may allow a

candidate to stand out with employers. First aid certification is considered a part of previous experience in most healthcare job postings.

Pharmacy Technicians

Pharmacy technicians prepare medications under the direction of a pharmacist. They are responsible for measuring, mixing, counting, labeling, and recording amounts and dosages of medications according to prescription orders (O*NET).

Table 5 shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

Table 5. Pharmacy Technicians Occupational Demand and Information

<i>Occupation(s)</i>	<i>Pharmacy Technicians</i>	
Educational requirements		
Relevant UMD program(s)	N/A	
Other local program(s)	Lake Superior College, Walgreens	
Typical on-the-job training	Moderate term training	
Work experience required	None	
Typical entry level education	High school or equivalent	
Common job titles	Pharmacy technicians, certified pharmacy technicians, pharmacy interns	
Occupational information		
Specialized skills	Medical prescription, inventory management, medication dispensation	
Software skills	Microsoft Office, operating systems, web browsers	
Common skills	Customer service, clerical works, management	
Required qualifications	Certified pharmacy technician	
Preferred/other qualifications	National health career association certified, registered pharmacist	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	464	8,055
Projected job growth (2023-2033)	0%	3%
Hourly median wage	\$19.55	\$22.64
Diversity % of occupation	10%	23%
Average monthly postings	20	810
Average monthly hires	15	333
Top companies hiring	Essentia Health	Walgreens Boots Alliance, CVS Health

SOURCE: LIGHTCAST, O*NET

Pharmacy technician roles do not require a four-year degree, but they could provide valuable hands-on experience for UMD students in Biology, Chemistry, Biochemistry, or other related programs.

According to Lightcast, minimal growth is expected in the next decade for this occupation, but high job volume will help maintain a steady demand for pharmacy technicians. Beyond becoming a certified pharmacy technician, no higher education is typically required.

UMD does not offer a Pharmacy Technician program, so students interested in this path would need to obtain certification through an external program. [Lake Superior College](#) and [Walgreens](#) have certified pharmacy technician training programs. Becoming a certified pharmacy technician is also contingent upon passing the [Pharmacy Technician Certification Exam](#).

Community and Social Service Specialists

Community and social service specialists are responsible for connecting individuals and families in need with appropriate community resources and social services, including government assistance programs, healthcare, housing, and employment opportunities. This connection is accomplished by assessing needs, developing personalized plans, and advocating for clients' access to necessary support (O*NET).

Table 6 shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

Table 6. Community and Social Service Specialists Occupational Demand and Information

<i>Occupation(s)</i>	<i>Community and Social Service Specialists</i>	
Educational requirements		
Relevant UMD program(s)	Sociology	
Other local program(s)	Human Services	
Typical on-the-job training	None	
Work experience required	None	
Typical entry level education	Bachelor's degree	
Common job titles	Program supervisors, housing coordinators, community service officers	
Occupational information		
Specialized skills	Social work, human services, mental health	
Software skills	Microsoft Office, Google Workspace, spreadsheets	
Common skills	Communication, planning, leadership	
Required qualifications	N/A	
Preferred/other qualifications	Cardiopulmonary resuscitation (CPR) certification, first aid certification, basic life support (BLS) certification	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	222	3,561
Projected job growth (2023-2033)	2%	6%
Hourly median wage	\$22.78	\$23.42
Diversity % of occupation	23%	32%
Average monthly postings	11	500
Average monthly hires	10	168
Top companies hiring	University of Minnesota, Essentia Health	Sevita, State of Minnesota, Lutheran Social Service of Minnesota

SOURCE: LIGHTCAST, O*NET

UMD's Sociology major best aligns with careers in community and social service specialties. Students pursuing this path should have a strong passion for working with people and may be particularly interested in fields such as social work or mental health services.

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According to Lightcast, job growth in this occupation is expected to remain minimal over the next decade, with a steady but relatively small workforce. In the Duluth MSA, top employers include the University of Minnesota and Essentia Health. Statewide, top employers are Sevita, the State of Minnesota, and Lutheran Social Service of Minnesota.

For most community and social service specialists, a bachelor’s degree is required. The most common preferred qualifications include CPR, first aid certification, and BLS certification.

Medical Transcriptionists

Medical transcriptionists use various electronic devices to transcribe medical reports recorded by physicians and other healthcare practitioners. Medical records often cover office visits, emergency room visits, diagnostic imaging studies, operations, chart reviews, and final summaries. Transcriptionists dictate reports and translate abbreviations into an understandable form (O*NET).

Table 7 shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

Table 7. Medical Transcriptionists Occupational Demand and Requirements

<i>Occupation(s)</i>	<i>Medical Transcriptionists</i>	
Educational requirements		
Relevant UMD program(s)	N/A	
Other local program(s)	N/A	
Typical on-the-job training	None	
Work experience required	None	
Typical entry level education	Postsecondary nondegree award	
Common job titles	Medical scribes, medical scribe trainers, medical assistants/medical scribes	
Occupational information		
Specialized skills	Radiology, electronic medical records, medical records	
Software skills	Epic EMR, Microsoft Excel, spreadsheets	
Common skills	Communication, professionalism, clerical work	
Required qualifications	Medical terminology knowledge	
Preferred/other qualifications	Licensed practical nurse, certified medical assistant, certified nursing assistant	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	47	450
Projected job growth (2023-2033)	-15%	-3%
Hourly median wage	\$23.33	\$23.70
Diversity % of occupation	6%	13%
Average monthly postings	0	47
Average monthly hires	3	31
Top companies hiring	ScribeAmerica, Randstad, Amtex Systems	Twin Cities Orthopedics, Minnesota Eye Consultants, Ihealth

SOURCE: LIGHTCAST, O*NET

UMD currently does not have any programs related to medical transcription work. However, Essentia human resources staff mentioned this as a good starting job in the medical field to learn more medical terminology.

According to Lightcast, negative growth is expected for this occupation in the next 10 years as the need for typing jobs decreases. A 3% decline is expected in Minnesota, and a 15% decline is expected in Duluth with a move to automated jobs.

Most medical transcriptionist jobs list knowledge of medical terminology as a required qualification. While Lightcast suggests a non-degree award is required, this isn't consistently stated in all job postings. For students interested in pursuing this occupation, [Lake Superior College](#) offers a self-guided medical coding course that teaches many of the skills needed to work as a medical transcriptionist.

Physical Therapist Aides

Physical therapist aides work under close supervision of a physical therapist or physical therapy assistant to provide treatment to patients. Possible duties include preparing the patient and the treatment area, disinfecting equipment, assisting patients to practice exercises, and conferring with physical therapy staff to modify and coordinate patient treatment (O*NET).

Table 8 on the next page shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

UMD currently does not have any programs related to physical therapist aid jobs. However, there are options in the local area at the [College of Saint Scholastica](#) (for pre-physical therapy) and [Lake Superior College](#) (for the physical therapy assistant program).

According to Lightcast, minimal growth is expected for this occupation over the next 10 years. Job growth for physical therapist aides in the Duluth area is projected at 5% by 2033, compared to just 1% statewide. In both areas, monthly hiring exceeds job postings, indicating steady demand for these roles. While no higher education degree is required, a high school diploma is the minimum for all job postings, and many postings list CNA along with BLS and CPR certifications as preferred qualifications. Median hourly wages are slightly higher in Duluth at \$19.36, compared to \$18.23 statewide.

Table 8. Physical Therapist Aides Occupational Demand and Information

<i>Occupation(s)</i>	<i>Physical Therapist Aides</i>	
Educational requirements		
Relevant UMD program(s)	N/A	
Other local program(s)	Nursing Assistant, Physical Therapy Assistant, Massage Therapy	
Typical on-the-job training	Short-term on-the-job training	
Work experience required	None	
Typical entry level education	High school or equivalent	
Common job titles	Physical therapy aides, rehabilitation aides, therapy aides	
Occupational information		
Specialized skills	Physical therapy, mechanics, rehabilitation	
Software skills	Microsoft Office, Epic EMR, Microsoft Excel	
Common skills	Communication, customer service, management	
Required qualifications	N/A	
Preferred/other qualifications	Certified nursing assistant, basic life support (BLS) certification, cardiopulmonary resuscitation (CPR) certification	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	20	304
Projected job growth (2023-2033)	5%	1%
Hourly median wage	\$19.36	\$18.23
Diversity % of occupation	5%	13%
Average monthly postings	1	12
Average monthly hires	5	17
Top companies hiring	Fairview Health	Allina Health, Regions Health, Fairview Health Services

SOURCE: LIGHTCAST, O*NET

Jobs in Demand

According to Lightcast, high demand is expected for the jobs in this category in the coming years, but these jobs' wages typically fall below the state's median wage (see Figure 1 on page 5). These occupations could be good options for students who want to experience working in the healthcare sector but don't want to commit to long-term training or certifications.

Home Health and Personal Care Aides

Home health and personal care aides are responsible for monitoring the health status of an individual with disabilities or illness, and addressing their health-related needs, such as changing bandages, dressing wounds, or administering medication. Work is performed under the direction of licensed nursing staff. Duties include aiding with routine healthcare tasks or activities of daily living, such as feeding, bathing, toileting, or ambulation. Other tasks may include preparing meals, doing light housekeeping, and doing laundry depending on the patient's abilities (O*NET).

Table 9 shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

Table 9. Home Health and Personal Care Aides Occupational Demand and Information

<i>Occupation(s)</i>	<i>Home Health and Personal Care Aides</i>	
Educational requirements		
Relevant UMD program(s)	N/A	
Other local program(s)	Nursing Assistant	
Typical on-the-job training	Short-term on-the-job training	
Work experience required	None	
Typical entry level education	High school diploma or equivalent	
Common job titles	Direct support professionals, caregivers, home health aides	
Occupational information		
Specialized skills	Caregiving, personal care, medical administration	
Software skills	Microsoft Office, Epic EMR, spreadsheets	
Common skills	Communication, English language, compassion	
Required qualifications	N/A	
Preferred/other qualifications	Certified nursing assistant, registered nurse	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	5,196	117,905
Projected job growth (2023-2033)	-4%	18%
Hourly median wage	\$16.66	\$16.56
Diversity % of occupation	16%	46%
Average monthly postings	17	2,204
Average monthly hires	353	8,392
Top companies hiring	CareInHomes, Sevita, Accessible Space	CareInHomes, Sevita, Dunganvin

SOURCE: LIGHTCAST, O*NET

An advantage of this role is the minimal qualifications required; applicants do not need to be a licensed CNA or RN to be qualified for this occupation. While some employers may require CPR or BLS certification, our review of Lightcast’s job posting data indicates that those certifications are not consistently required across all positions.

According to Lightcast, the number of home health and personal care aides in the Duluth region is projected to decline by -4%, while the rest of Minnesota is expected to see 18% growth. On average, between November 2023 and October 2024, the Duluth MSA saw more than 350 home health and personal care aides hired each month—higher than any other occupation selected for this analysis.

Medical Assistants

Medical assistants perform administrative and certain clinical duties under the direction of a physician. Their administrative duties may include scheduling appointments, maintaining medical records, billing, and coding information for insurance purposes. Clinical duties may include taking and recording vital signs and medical histories, preparing patients for examinations, drawing blood, and administering medications as directed by a physician (O*NET).

Table 10. Medical Assistants Occupational Demand and Information

<i>Occupation(s)</i>	<i>Medical Assistants</i>	
Educational requirements		
Relevant UMD program(s)	N/A	
Other local program(s)	Medical/Clinical Assistant	
Typical on-the-job training	None	
Work experience required	None	
Typical entry level education	Postsecondary nondegree award	
Common job titles	Medical Assistants, clinical medical assistants, clinical assistants	
Occupational information		
Specialized skills	Medical assistance, vital signs, nursing	
Software skills	Microsoft Office, Epic EMR, Microsoft Excel	
Common skills	Communication, customer service, scheduling	
Required qualifications	Medical assistant postsecondary nondegree award	
Preferred/other qualifications	Basic life support (BLS) certification, registered nurse, certified medical assistant (AAMA)	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	620	12,210
Projected job growth (2023-2033)	17%	15%
Hourly median wage	\$23.59	\$23.51
Diversity % of occupation	11%	24%
Average monthly postings	14	631
Average monthly hires	23	502
Top companies hiring	Essentia Health, Fairview Health Services, St. Luke's University Health Network	Allina Health, Fairview Health Services, Mayo Clinic

SOURCE: LIGHTCAST, O*NET

Table 10 on the previous page shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

According to Lightcast, Medical Assistants are currently in very high demand both on local and state levels, with a 17% and 24% growth rate expected, respectively, over the next decade.

Specialized skills for this position include knowledge of medical assistance, vital signs, and nursing. Communication, customer service, and scheduling skills are also important. A review of job postings indicates that most employers require a medical assistant postsecondary nondegree award to work in the occupation. While not always required, the national medical assistant certification granted by the [American Association of Medical Assistants](#) is preferred by some employers. Lake Superior College’s website indicates that they offer [the certification](#) occasionally.

Psychiatric Technicians

Psychiatric technicians provide care for individuals with mental or emotional conditions or disabilities, following the instructions of physicians or other health practitioners. They are responsible for monitoring patients' physical and emotional well-being, reporting to medical staff, and may lead individual and group therapy sessions and administer medication (O*NET).

Table 11. Psychiatric Technicians Occupational Demand and Information

<i>Occupation(s)</i>	<i>Psychiatric Technicians</i>	
Educational requirements		
Relevant UMD program(s)	Psychology	
Other local program(s)	N/A	
Typical on-the-job training	Short term training	
Work experience required	Less than 5 years	
Typical entry level education	Postsecondary nondegree award	
Common job titles	Behavioral health techs, behavioral health specialists, mental health techs	
Occupational information		
Specialized skills	Mental health, behavioral health, de-escalation techniques	
Software skills	Microsoft Office, Google Workspace, Epic EMR	
Common skills	Communication, management, computer literacy	
Required qualifications	N/A	
Preferred/other qualifications	Registered nurse, basic life support (BLS) certification, cardiopulmonary resuscitation (CPR) certification	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	176	1,820
Projected job growth (2023-2033)	4%	17%
Hourly median wage	\$20.34	\$21.31
Diversity % of occupation	14%	29%
Average monthly postings	7	115
Average monthly hires	6	79
Top companies hiring	Essentia Health, Sevita	Dungarvin, Fairview Health Services

SOURCE: LIGHTCAST, O*NET

Table 11 on the previous page shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

According to Lightcast, UMD and the surrounding colleges do not offer a Psychiatric Technician program, but UMD does offer a Psychology major, which would directly relate to psychiatric technician positions. According to Lightcast, this position is currently in high demand both on local and state levels, with a 4% and 17% projected growth rate, respectively.

Specialized skills for this position include handling mental health crises, de-escalation techniques, and knowledge of behavioral health. Strong communication skills are essential. While this position connects with the fields of psychology, sociology, and biology, no degree is required. Many employers do require CPR certification for psychiatric technicians, though nursing certifications are typically not necessary. Previous experience in mental health-related fields is preferred by employers.

While some positions may prefer or encourage candidates with an RN certification, it is not typically required. However, higher-level roles that address more complex issues may require being an RN. For students interested in becoming psychiatric technicians, starting with a Psychology major can provide valuable background knowledge. Or, for students currently pursuing a Psychology major, this role could be a great opportunity to gain on-the-job experience during their studies.

Community Health Workers

Community health workers promote health within a community by assisting individuals to adopt healthy behaviors. They serve as an advocate for the health needs of individuals by assisting community residents in effectively communicating with healthcare providers or social service agencies. They may also act as liaisons or advocates and implement programs that promote, maintain, and improve individual and overall community health. They may deliver health-related preventive services such as blood pressure, glaucoma, and hearing screenings and collect data to help identify community health needs (O*NET).

Table 12 on the next page shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

UMD's Public Health major is the most closely related program to community health worker occupations. While Lightcast data shows that a bachelor's degree is not always required for community health worker roles, our review of Lightcast's job posting data found that it is often a preferred qualification.

Statewide, this occupation is projected to experience significant growth, with job demand expected to increase by 15%. In the Duluth MSA, projected job growth (2022-2032) is expected to be 9%.

According to Lightcast, a community health worker certificate is a requirement for the occupation. The [Minnesota Department of Health](#) describes the certificate as a "competency-based, 14-credit standardized program that creates a pathway for students interested in a wide range of health and social services careers."

Six schools in Minnesota offer the certificate program, including [Minneapolis Community and Technical College](#), [Minnesota West Community and Technical College](#) (Worthington), [Normandale Community College](#), [Northwest Technical College](#) (Bemidji, primarily online with occasional in-person meetings), [Rochester Community and Technical College](#), and [St. Catherine University](#) (St. Paul, hybrid format with both online and in-person components).

Table 12. Community Health Workers Occupational Demand and Requirements

<i>Occupation(s)</i>	<i>Community Health Workers</i>	
Educational requirements		
Relevant UMD program(s)	Public Health	
Other local program(s)	Human Services	
Typical on-the-job training	Short term training	
Work experience required	None	
Typical entry level education	High school or equivalent	
Common job titles	Community health workers, community health outreach workers, outreach specialists	
Occupational information		
Specialized skills	Community health, behavioral health, community outreach	
Software skills	Microsoft Office, Epic EMR, spreadsheets	
Common skills	Coordinating, report writing, advocacy	
Required qualifications	Community health worker certification	
Preferred/other qualifications	Basic life support (BLS) certification, licensed practical nurse	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	50	955
Projected job growth (2023-2033)	9%	15%
Hourly median wage	\$20.92	\$23.44
Diversity % of occupation	18%	31%
Average monthly postings	1	28
Average monthly hires	2	46
Top companies hiring	Essentia Health	University of Minnesota, Fairview Health Services, CentraCare Health

SOURCE: LIGHTCAST, O*NET

Stable Careers

The occupations in the *Stable Careers* category (see Figure 1 on page 5) earn above the hourly median wage but are expected to experience lower-than-average growth over the next 10 years, compared with other healthcare careers. Most of these require a bachelor’s degree.

Registered Nurses

Registered nurses are responsible for assessing patient health, developing and implementing nursing care plans, and maintaining medical records. They provide care to patients who are ill, injured, convalescent, or disabled. Additionally, they may advise patients on health maintenance and disease prevention or offer case management services. Licensing or registration is required (O*NET).

Table 13 shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

Table 13. Registered Nurses Occupational Demand and Requirements

<i>Occupation(s)</i>	<i>Registered Nurses</i>	
Educational requirements		
Relevant UMD program(s)	N/A	
Other local program(s)	Registered Nursing	
Typical on-the-job training	None	
Work experience required	None	
Typical entry level education	Bachelor’s degree	
Common job titles	Registered nurse, medical surgical registered nurse, travel registered nurse	
Occupational information		
Specialized skills	Nursing, nursing care, nursing practices	
Software skills	Epic EMR, Microsoft Office, medical software	
Common skills	Communication, planning, leadership	
Required qualifications	Registered nurse, cardiopulmonary resuscitation (CPR) certification, basic life support (BLS) certification	
Preferred/other qualifications	N/A	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	3,839	67,993
Projected job growth (2023-2033)	-0.5%	6%
Hourly median wage	\$39.53	\$46.78
Diversity % of occupation	6%	18%
Average monthly postings	344	8,515
Average monthly hires	71	1,410
Top companies hiring	Essentia Health, Aspirus St.	ShiftMed, Sanford Health, Avera Health Luke’s

SOURCE: LIGHTCAST, O*NET

UMD does not currently have a Registered Nursing program. However, as noted in Table 13, the occupation had nearly 4,000 jobs in the Duluth MSA and nearly 68,000 statewide in 2023, making it one of the largest in the healthcare sector. Registered nurses also earn above the hourly median wage for the state of Minnesota.

In recent years, job postings have outpaced hires, suggesting employers may be struggling to fill vacant positions.

Key skills for registered nurses include patient care, medical software proficiency, and strong medical knowledge. Communication skills are essential, as nurses collaborate with both patients and healthcare teams. According to the Minnesota Board of Nursing, students can be qualified to work as a registered nurse in the state by completing either a bachelor's degree or an associate degree in nursing and then [passing the NCLEX-RN exam](#) to obtain licensure. However, our analysis of Lightcast's job postings report indicates that many employers require a bachelor's degree, along with CPR and BLS certifications.

A career as a registered nurse would be a good career path for a UMD student who is interested in science or public health fields. Starting with a Biology or Chemistry major would provide a good foundation for medical knowledge. Requirements for this career often include five years of previous work experience in a related field.

Locally, [Lake Superior College](#) offers a professional nursing associate degree and the [College of Saint Scholastica](#) offers a bachelor of science degree in nursing; either would fulfill the necessary requirements for the position.

Human Resources Specialists

Human resource specialists recruit, screen, interview, or place individuals within an organization (O*NET).

Table 14 on the next page shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software. UMD students pursuing a Human Resources Management major may be able to apply their knowledge to the healthcare sector as human resource specialists. This occupation typically does not require further education beyond a bachelor's degree and does not require any certifications, making it a viable option for recent graduates. Many employers prefer prior experience, but it is often not a requirement.

According to Lightcast, human resource specialist positions in Minnesota are projected to grow by 6% by 2033, while the Duluth area is expected to see a 2% decline over the same period. Additionally, Essentia Health human resource staff noted that many human resource specialist roles in the Duluth area are remote, which may limit local opportunities for internships or shadowing.

Despite there being no specific certifications beyond a bachelor's degree required to become a human resource specialist, several are preferred by employers, such as project management and professional human resources certifications. While this position will sometimes hire new graduates, employers also lean towards hiring from within their organization, which could make the position more competitive.

Table 14. Human Resources Specialists Occupational Demand and Requirements

<i>Occupation(s)</i>	<i>Human Resources Specialists</i>	
Educational requirements		
Relevant UMD program(s)	Human Resources Management	
Other local program(s)	Liberal Arts and Sciences	
Typical on-the-job training	None	
Work experience required	None	
Typical entry level education	Bachelor's degree	
Common job titles	Human resource generalists, recruiters, human resources specialists	
Occupational information		
Specialized skills	Human Resources Information System, applicant tracking systems, employee relations	
Software skills	Microsoft Office, Human Resources Information System, applicant tracking systems	
Common skills	Communication, management, customer service	
Required qualifications	N/A	
Preferred/other qualifications	Professional in human resources, project management certification, senior professional in human resources	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	507	17,639
Projected job growth (2023-2033)	-2%	6%
Hourly median wage	\$31.28	\$35.82
Diversity % of occupation	13%	20%
Average monthly postings	19	919
Average monthly hires	20	775
Top companies hiring	Essentia Health, University of Minnesota Duluth, Fairview Health	State of Minnesota, Robert Half, GPAC

SOURCE: LIGHTCAST, O*NET

Clinical Laboratory Technologists and Technicians

Clinical laboratory technologists and technicians are responsible for performing complex medical laboratory tests for diagnosis, treatment, and prevention of disease. They may train or supervise staff (O*NET).

Table 15 on the following page shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

Table 15. Clinical Laboratory Technologists and Technicians Occupational Demand and Requirements

<i>Occupation(s)</i>	<i>Clinical Laboratory Technologists and Technicians</i>	
Educational requirements		
Relevant UMD program(s)	Biology, Chemistry, Biomedical Science	
Other local program(s)	N/A	
Typical on-the-job training	None	
Work experience required	None	
Typical entry level education	Bachelor's degree	
Common job titles	Laboratory technicians, medical laboratory technicians, laboratory assistants	
Occupational information		
Specialized skills	Medical laboratory, phlebotomy, lab testing (chemistry)	
Software skills	Microsoft Office, laboratory information management systems, spreadsheets	
Common skills	Quality control, management, customer service	
Required qualifications	N/A	
Preferred/other qualifications	American society for clinical pathology certification, basic life support (BLS) certification, American medical technologists certification.	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	276	4,645
Projected job growth (2023-2033)	2%	8%
Hourly median wage	\$29.98	\$30.06
Diversity % of occupation	9%	24%
Average monthly postings	35	677
Average monthly hires	5	110
Top companies hiring	Essentia Health	Actalent, Mayo Clinic, Fairview Health Services

SOURCE: LIGHTCAST, O*NET

UMD students pursuing majors such as Biology, Chemistry, and Biomedical Science may be interested in careers as clinical laboratory technologists. This occupation typically requires a bachelor's degree and doesn't require significant amounts of prior experience, making it a viable option for new graduates.

Lightcast data indicates that while clinical laboratory technologist positions are projected to grow by 8% across Minnesota by 2033, growth in the Duluth area is expected to be just 2%. The median hourly wage for this occupation is approximately \$30, both locally and statewide. Additionally, job openings for clinical laboratory technicians are relatively limited, with an average of only five positions filled per month in the Duluth area.

Beyond a bachelor's degree, there are no specific qualifications required to become a clinical laboratory technologist, according to Lightcast. However, there are several certifications that may be needed, depending on the position. The [American Society for Clinical Pathology](#) offers credentialing exams to certify medical laboratory professionals in areas like clinical laboratory science, histotechnology, cytotechnology, and phlebotomy. BLS certification is also a preferred qualification for some clinical laboratory technologist positions.

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Radiologic Technologists

Radiologic technologists take x-rays and CAT scans or administer nonradioactive materials into patients' bloodstreams for diagnostic or research purposes. The occupation also includes radiologic technologists and technicians who specialize in other scanning modalities (O*NET).

Table 16 shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

Table 16. Radiologic Technologists Occupational Demand and Requirements

<i>Occupation(s)</i>	<i>Radiologic Technologists</i>	
Educational requirements		
Relevant UMD program(s)	N/A	
Other local program(s)	Radiologic Technology/Science	
Typical on-the-job training	None	
Work experience required	None	
Typical entry level education	Associate's degree	
Common job titles	Radiologic technologists, radiology technologists, x-ray technologists	
Occupational information		
Specialized skills	Radiology, radiography, mammography	
Software skills	Epic EMR, Microsoft Office, Microsoft Outlook	
Common skills	Communication, operations, good driving record	
Required qualifications	Certification by the American Registry of Radiologic Technologists (ARRT)	
Preferred/other qualifications	Basic life support (BLS) certification, valid driver's license	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	252	4,414
Projected job growth (2023-2033)	2%	6%
Hourly median wage	\$33.22	\$37.59
Diversity % of occupation	5%	13%
Average monthly postings	25	339
Average monthly hires	5	86
Top companies hiring	Essentia Health, Fairview Health Services, DispatchHealth	Fairview Health Services, Avera Health, DispatchHealth

SOURCE: LIGHTCAST, O*NET

While UMD does not offer a radiologic tech program, nearby Lake Superior College has an [Associate of Applied Science degree in Radiologic Technology](#).

According to Lightcast, there were 252 radiologic technologists employed in the Duluth area in 2023 and 4,414 across Minnesota. Job growth for the occupation is expected to be 2% in the Duluth MSA and 6% statewide. The hourly median wage for this position is \$33.22 in the Duluth MSA and \$37.59 in Minnesota, which is above the state median.

[Minnesota State Community and Technical College](#), which also offers a Radiologic Technology degree, states that in order to work as a radiologic technologist in Minnesota, students must obtain certification from the [American Registry of Radiologic Technologists \(ARRT\)](#), but that—unlike many other states—Minnesota does

not currently require a license to work in the occupation. Lightcast reports that other preferred qualifications for this role include Basic Life Support (BLS) certification and a valid driver’s license.

Health Technologists and Technicians

Health technologists and technicians perform laboratory tests for diagnosis, treatment, and prevention of disease. They may train or supervise staff (O*NET).

Table 17 shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

Table 17. Health Technologists and Technicians Occupational Demand and Requirements

<i>Occupation(s)</i>	<i>Health Technologists and Technicians</i>	
Educational requirements		
Relevant UMD program(s)	Health Care Management	
Other local program(s)	N/A	
Typical on-the-job training	None	
Work experience required	None	
Typical entry level education	Postsecondary nondegree award	
Common job titles	Patient access reps, patient care technicians, patient service reps	
Occupational information		
Specialized skills	Medical records, nursing, direct patient care	
Software skills	Microsoft Office, Epic EMR, spreadsheets	
Common skills	Customer service, clerical work, communication	
Required qualifications	N/A	
Preferred/other qualifications	Registered nurse, basic life support (BLS) certification, certified patient care technician	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	137	2,033
Projected job growth (2023-2033)	10%	8%
Hourly median wage	\$22.66	\$25.60
Diversity % of occupation	9%	25%
Average monthly postings	44	875
Average monthly hires	3	51
Top companies hiring	Essentia Health	Fairview Health, Fresenius, Mayo Clinic

SOURCE: LIGHTCAST, O*NET

Students pursuing UMD’s Health Care Management major may find health technician roles to be a valuable way to gain experience in the field while completing their degree, as the occupation typically does not require a postsecondary degree.

According to Lightcast, the number of health technicians employed in the Duluth area and across Minnesota is relatively small (on average, only three health technicians were hired in the Duluth MSA each month), but demand for the occupation is expected to grow. The hourly median wage in the Duluth area for this position is \$22.66, slightly lower than other healthcare occupations.

While there are typically no qualifications required to become a health technician, there are some qualifications that are preferred by employers. These include being a registered nurse or patient care technician and attaining BLS certification.

Surgical Technologists

Surgical technologists assist in operations, under the supervision of surgeons, registered nurses, or other surgical personnel. They may help set up the operating room, prepare and transport patients for surgery, adjust lights and equipment, pass instruments and other supplies to surgeons and surgeons' assistants, hold retractors, cut sutures, and help count sponges, needles, supplies, and instruments (O*NET).

Table 18 shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

Table 18. Surgical Technologists Occupational Demand and Requirements

<i>Occupation(s)</i>	<i>Surgical Technologists</i>	
Educational requirements		
Relevant UMD program(s)	N/A	
Other local program(s)	Surgical Technology	
Typical on-the-job training	None	
Work experience required	None	
Typical entry level education	Postsecondary nondegree award	
Common job titles	Surgical technologists, certified surgical technicians, certified surgical technologists	
Occupational information		
Specialized skills	Surgery, operating room (OR), surgical procedures	
Software skills	Epic EMR, Microsoft Outlook, MEDITECH EHR	
Common skills	Communication, critical thinking, customer service	
Required qualifications	Surgical technology degree	
Preferred/other qualifications	Certified Surgical Technologist certification, basic life support certification, registered nurse	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	123	1,626
Projected job growth (2023-2033)	2%	8%
Hourly median wage	\$28.42	\$35.00
Diversity % of occupation	7%	20%
Average monthly postings	24	212
Average monthly hires	4	62
Top companies hiring	Essentia Health, Fairview Health Services, Getmed Staffing	Essentia Health, Avera Health, Fairview Health Services

SOURCE: LIGHTCAST, O*NET

While UMD does not offer a surgical technology program, nearby Lake Superior College has an [Associate of Applied Science degree in Surgical Technology](#).

According to Lightcast, there were 123 radiologic technologists employed in the Duluth area in 2023 and 1,626 across Minnesota. Job growth for the occupation is expected to be 2% in the Duluth MSA and 8% statewide. The hourly median wage for this position is \$28.42 in the Duluth MSA and \$35.00 in Minnesota, which is above the state median.

According to Lightcast's job postings report, to obtain a job as a surgical technologist, applicants are typically required to have completed a surgical technology degree program and obtain any additional licensure or certifications—most often BLS certification. While not required, having the [Certified Surgical Technologist certification](#) is desirable to many employers.

High-Growth Professions

The jobs in the *High-Growth Professions* category are expected to see above-average growth and offer higher-than-average salaries (see Figure 1 on page 5). These occupations typically require education beyond a bachelor’s degree, such as a master's degree.

Counselors/Therapists

Counselors and therapists are responsible for diagnosing, advising, assisting, and treating patients who need mental and psychiatric therapy. They may counsel individuals, families, or groups or engage in prevention programs for alcohol, drugs, gambling, or other problems. Counselors apply psychotherapeutic and family system theories and techniques in the delivery of services with the purpose of treating such diagnosed nervous or mental disorders (O*NET).

Table 19 shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

Table 19. Counselors/Therapists Occupational Demand and Requirements

<i>Occupation(s)</i>	<i>Educational, Guidance, and Career Counselors and Advisors; Marriage and Family Therapists; Substance Abuse, Behavioral Disorder, and Mental Health Counselors; Counselors, All Other</i>	
Educational requirements		
Relevant UMD program(s)	Psychology, Social Work, Sociology	
Other local program(s)	Counselor Education, School Counseling, Human Services	
Typical on-the-job training	Internship or none	
Work experience required	None	
Typical entry level education	Master’s degree	
Common job titles	Mental health therapists, behavior techs, board certified behavior analysts	
Occupational information		
Specialized skills	Mental health, social work, treatment planning	
Software skills	Microsoft Office, Google Workspace, spreadsheets	
Common skills	Communication, management, planning	
Required qualifications	Licensed marriage and family therapist, licensed professional clinical counselor, licensed independent clinical social worker	
Preferred/other qualifications		
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	1,018	17,123
Projected job growth (2023-2033)	2%	14%
Hourly median wage	\$24.46	\$26.01
Diversity % of occupation	11%	26%
Average monthly postings	41	1,377
Average monthly hires	38	717
Top companies hiring	Essentia Health, University of Minnesota, Talkspace	Sondermind, University of Minnesota, Nystrom & Associates

SOURCE: LIGHTCAST, O*NET

Psychology, Social Work, or Sociology (all offered at UMD) align well with a career as a counselor or therapist. These occupations require a master's degree and are in high demand across the state.

According to Lightcast, projected growth for counselor/therapist occupations is expected to be 14% statewide by 2033, but only 2% in the Duluth area. The hourly median wage for this occupation is \$24.46 in the Duluth area and \$26.01 statewide, just above the statewide median wage.

While counselor and therapist roles typically require a master's degree, it is possible to become a [Licensed Alcohol and Drug Counselor \(LADC\)](#) in Minnesota with only a bachelor's degree. According to the Minnesota Board of Behavioral Health and Therapy, the license requirements are a bachelor's degree, 18-semester credits of specific coursework, an 880-hour counseling practicum, and a passing score on a state-administered exam.

Beyond a master's degree, there are several additional qualifications required to become a counselor or therapist, including specific licensure based upon specialty, such as those for a marriage and family therapist, professional clinical counselor, and independent clinical social worker.

Medical, Health, Social, and Community Services Managers, All Other

Medical, health, social, and community service managers are responsible for planning, directing, or coordinating health services in hospitals, clinics, or other settings. Work may involve directing social workers, counselors, or probation officers (O*NET).

Table 20 on the next page shows the educational requirements, occupational requirements, and job demand for the occupation, using data from Lightcast, a labor market software.

UMD offers various programs that may allow students to work as medical, health, social, and community service managers, such as the healthcare-related programs of Biology, Biomedical Science, and Health Care Management.

Medical, health, social, and community services manager positions offer competitive pay, and demand for these roles is expected to grow. By 2033, job growth for these positions is projected to be 7% in the Duluth area, with a median hourly wage of \$45.80, and 15% statewide, with a median hourly wage of \$54.79. These positions offer higher pay and are in greater demand than most other medical occupations.

Requirements for this occupation vary by position with most requiring a practical nurse license and BLS certification. Many positions also require five years of experience in a medical setting or in clinical research.

Table 20. Medical, Health, Social, and Community Services Managers Occupational Demand and Requirements

<i>Occupation(s)</i>	<i>Medical and Health Services Managers; Social and Community Service Managers; Managers, All Other</i>	
Educational requirements		
Relevant UMD program(s)	Biology, Biomedical Sciences, Health Care Management	
Other local program(s)	Nursing, Human Services	
Typical on-the-job training	None	
Work experience required	Less than 5 years	
Typical entry level education	Bachelor's degree	
Common job titles	Directors of nursing, patient care coordinators, clinical supervisors	
Occupational information		
Specialized skills	Nursing, care coordination, social work	
Software skills	Microsoft Office, Epic EMR, clinic management systems	
Common skills	Communication, leadership, management	
Required qualifications	Licensed practical nurse	
Preferred/other qualifications	Registered nurse, basic life support (BLS) certification	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	1,205	22,978
Projected job growth (2023-2033)	7%	15%
Hourly median wage	\$45.80	\$54.79
Diversity % of occupation	10%	19%
Average monthly postings	74	2,370
Average monthly hires	41	807
Top companies hiring	Essentia Health, Fairview Health Services, Elevance Health	Fairview Health, University of Minnesota

SOURCE: LIGHTCAST, O*NET

Social Workers

Social workers plan, direct, or coordinate medical and health services in hospitals, clinics, managed care organizations, public health agencies, or similar organizations. They may oversee the program or organization's budget and policies regarding participant involvement, program requirements, and benefits. Work may involve directing social workers, counselors, or probation officers (O*NET).

Table 21 shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

UMD students pursuing Psychology, Sociology, Public Health, or Social Work majors would be well qualified to be social workers. This occupation typically doesn't require prior experience, making it a viable option for new graduates to gain experience. Beyond a bachelor's degree, nearly all social work positions require some type of license in social work. And some positions may require an additional license in therapy or counseling.

According to Lightcast, while social worker positions are projected to grow by 11% across the state of Minnesota by 2033, demand in the Duluth area is expected to grow by only 2%. Although this growth is lower than that of most medical occupations, the large number of jobs in this occupation (nearly 900 in the Duluth MSA and nearly 15,000 statewide) will keep demand strong.

Table 21. Social Workers Occupational Demand and Requirements

<i>Occupation(s)</i>	<i>Child, Family, and School Social Workers; Healthcare Social Workers; Mental Health and Substance Abuse Social Workers</i>	
Educational requirements		
Relevant UMD program(s)	Psychology, Sociology, Public Health, Social Work	
Other local program(s)	N/A	
Typical on-the-job training	None	
Work experience required	None	
Typical entry level education	Bachelor's degree	
Common job titles	Mental health practitioners, social workers, school social workers	
Occupational information		
Specialized skills	Social work, mental health, case management	
Software skills	Microsoft Office, SQL Server Integration Services, spreadsheets	
Common skills	Communication, advocacy, planning	
Required qualifications	Licensed independent clinical social worker	
Preferred/other qualifications	Licensed marriage/family therapist, licensed professional clinical counselor	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	899	14,669
Projected job growth (2023-2033)	2%	11%
Hourly median wage	\$31.38	\$32.28
Diversity % of occupation	14%	28%
Average monthly postings	30	1,140
Average monthly hires	30	556
Top companies hiring	Essentia Health, Lutheran Social Service of MN, Southern Health Partners	Lutheran Social Service of MN, People Incorporated

SOURCE: LIGHTCAST, O*NET

Bureau of Business and Economic Research
 Labovitz School of Business and Economics
 University of Minnesota Duluth

Physician Assistants/Nurse Practitioners

Physician assistants and nurse practitioners are responsible for diagnosing and providing healthcare services. They may focus on health promotion and disease prevention. They may order, perform, or interpret diagnostic tests such as lab work and x-rays, and they may prescribe medication (O*NET).

Table 22 shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

Table 22. Physician Assistants/Nurse Practitioners Occupational Demand and Requirements

<i>Occupation(s)</i>	<i>Physician Assistants; Nurse Practitioners</i>	
Educational requirements		
Relevant UMD program(s)	N/A	
Other local program(s)	Physician Assistant, Registered Nursing	
Typical on-the-job training	None	
Work experience required	None	
Typical entry level education	Master’s degree	
Common job titles	Nurse practitioners, physician assistants, psychiatric mental health nurse practitioners	
Occupational information		
Specialized skills	Nursing, primary care, treatment planning	
Software skills	Epic EMR, patient management software, Microsoft Office	
Common skills	Management, communication, writing	
Required qualifications	Nurse practitioner	
Preferred/other qualifications	Basic life support (BLS) certification, registered nurse	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	566	9,111
Projected job growth (2023-2033)	34%	32%
Hourly median wage	\$59.60	\$63.05
Diversity % of occupation	6%	13%
Average monthly postings	42	722
Average monthly hires	13	231
Top companies hiring	Essentia Health, Matrix Medical Network, Fairview Health Services	Mayo Clinic, Matrix Medical Network, Fairview Health Services

SOURCE: LIGHTCAST, O*NET

UMD does not currently offer physician assistant or nursing practitioner programs. However, these occupations may be good options for UMD students in related fields who wish to pursue additional post-baccalaureate education.

According to Lightcast, demand for these occupations is expected to increase greatly by 2033, with 34% growth in the Duluth area and 32% growth across the state of Minnesota. In addition to the large increases in demand, these occupations offer highly competitive pay with a state hourly median wage of \$63.05

To become a nurse practitioner, students must earn a Master of Science in Nursing or Doctor of Nursing Practice, with the master’s degree typically taking two years and the doctorate degree taking three to four

years. To pursue these paths, students must first be a registered nurse with a Bachelor of Science in Nursing. UMD students interested in this option can pursue a post-baccalaureate degree in nursing, such as the [12-month program with online coursework at the College of St. Scholastica](#).

The path is more straightforward to become a physician assistant (PA). The College of St. Scholastica offers a [Master of Science degree as a physician assistant](#). And while several prerequisites are required (e.g., chemistry, biochemistry), no specific bachelor’s degree is needed, so students from a variety of UMD programs could be well-prepared for the PA program.

Speech-Language Pathologists

Speech-language pathologists assess and treat people with speech, language, voice, and fluency disorders. May select alternative communication systems and teach their use. Speech-language Pathologists may perform research related to speech and language problems (O*NET).

Table 23 shows the educational requirements, occupational requirements, and job demand information for the occupation, using data from Lightcast, a labor market software.

Table 23. Speech-Language Pathologists Occupational Demand and Requirements

<i>Requirement/Demand</i>	<i>Speech-Language Pathologists</i>	
Educational requirements		
Relevant UMD program(s)	Communication Sciences and Disorders, Psychology	
Other local program(s)	Disability Studies	
Typical on-the-job training	Internship/residency	
Work experience required	None	
Typical entry level education	Master’s degree	
Common job titles	Speech-language pathologists, school speech-language pathologists, virtual school speech-language pathologists	
Occupational information		
Specialized skills	Speech-language pathology, treatment planning, speech therapy	
Software skills	Epic EMR, Microsoft Office, patient management software	
Common skills	Communication, scheduling, interpersonal communications	
Required qualifications	Certificate of clinical competence in speech-language pathology, speech-language pathology license	
Preferred/other qualifications	Teaching certificate	
Occupational demand	Duluth (MSA)	State of Minnesota
Employment (2023)	128	3,281
Projected job growth (2023-2033)	9%	13%
Hourly median wage	\$38.50	\$40.28
Diversity % of occupation	5%	9%
Average monthly postings	25	378
Average monthly hires	4	94
Top companies hiring	VocoVision, Essentia Health, GPAC	VocoVision, ProCare Therapy, Epic Special Education Staffing

SOURCE: LIGHTCAST, O*NET

UMD students pursuing majors in Psychology or Communications Sciences and Disorders may be interested in a future career as a speech-language pathologist. Often requiring a master's degree, this occupation would require further education beyond what is offered at UMD.

According to Lightcast, there are not many speech-language pathologists employed in the Duluth area or in Minnesota. On average, only four speech-language pathologists are hired in the Duluth area each month (94 statewide). However, the occupation is projected to grow by 9% in the Duluth MSA and by 13% statewide by 2033, indicating increasing demand for this occupation. Additionally, typical speech-language pathologist positions offer competitive pay, with a median hourly wage of \$40.28 across the state.

In addition to a master's degree, several other qualifications are required to work as a speech-language pathologist, including a certificate of clinical competence and a speech-language pathology license. While a teaching certificate is not typically required, our job posting analysis found that it is often a preferred qualification and may be necessary for certain positions, such as those in schools or educational settings.

IV. SWOT Analysis

Through interviews with key stakeholders—University of Minnesota Duluth (UMD) faculty and staff, Essentia Health human resources professionals, and the City of Duluth’s workforce development director—we received a wide range of feedback on UMD’s healthcare-related programs, related occupations, the university’s role in workforce development efforts, challenges facing students interested in healthcare, and more. Our team organized this feedback using a SWOT analysis: strengths, weaknesses, opportunities, and threats. These findings are presented below.

Strengths

- UMD has a tuition agreement with the College of Saint Scholastica, enabling seamless credit transfers between programs. UMD students can take advantage of this agreement to enroll in St. Scholastica’s post-baccalaureate nursing program or hybrid nursing assistant training. A similar partnership exists with Minnesota North—the Minnesota State community college with six campuses located throughout northeastern Minnesota.
- There are already several strong partnerships between UMD programs, employers, and workforce development providers that could be replicated or built upon. For example, many of UMD’s Bachelor’s and Master’s of Social Work students participate in the City of Duluth’s [Adult Career Services Program](#), which provides tuition assistance and funding for unpaid internships. Additionally, the Workforce Development department hires at least one social work intern annually.
- UMD’s Swenson College of Science and Engineering hired an internship coordinator to strengthen industry relationships with the college and establish a standardized structure for student internship compensation, whether through wages or course credit. A similar position exists in the Labovitz School of Business and Economics (LSBE).
- UMD has a robust career center where students can receive guidance on necessary certifications and career planning.
- Most UMD students can tailor internship programs to their unique needs, especially with assistance from career center staff or internship coordinators.
- Spanish proficiency is a valuable skill in healthcare. Students who earn a bachelor’s degree in Spanish before enrolling in a post-baccalaureate nursing program could have a competitive advantage in the job market. UMD also offers a healthcare-related Spanish course, which could benefit students interested in bilingual healthcare roles.
- Similarly, students with a bachelor’s degree in American Indian Studies (a program offered by UMD’s College of Arts Humanities, and Social Sciences) may bring valuable cultural knowledge to healthcare careers, particularly if they choose to work in regions with large tribal communities.
- Soft skills are essential for every job but are not commonly taught in high school. Students who don’t attend college may miss out on developing these skills. To address this, several of UMD’s College of Arts, Humanities, and Social Sciences (CAHSS) faculty members have developed a list of CAHSS courses that could help students gain essential soft skills, such as self-awareness, communication, and conflict management. These upper-division courses are available to all UMD students who have completed 60 credits.

Weaknesses

- UMD does not currently have a tuition agreement with Lake Superior College (LSC), an important Duluth healthcare education provider.
- The medical programs offered through UMD are provided by the U of M Twin Cities. UMD does not offer standalone undergraduate medical programs (e.g., pre-medicine). This structure can make partnerships with healthcare organizations in Duluth more difficult because coordination must go through the Twin Cities before approval.
- Access to hospital software is almost nonexistent in university settings due to privacy and proprietary restrictions, which limits students' exposure to critical industry tools. Epic EMR, the most common hospital software, is only accessible to students working in a hospital.
- Tenure-track faculty have little incentive to participate in initiatives that encourage collaboration with industry or workforce development, as these initiatives fall under service rather than research or direct teaching, which carry more weight in tenure evaluations. Adjusting incentives to recognize and reward this work could encourage greater faculty involvement in developing healthcare-related programs and partnerships.
- Clinical practice sites—hospitals, clinics, and nursing homes where students gain hands-on experience under the supervision of licensed professionals—often lack sufficient staff to train and supervise students.
- A shortage of qualified instructors in healthcare fields, particularly in specialized technical fields, poses a challenge for expanding healthcare training programs.

Opportunities

- International students can participate in healthcare internships if the position is university-affiliated and provides academic credit. These internships offer valuable experience for international students who might otherwise face work restrictions.
- Internships could provide exposure to essential industry software such as Epic EMR, Microsoft Office, and SQL Server Integration Services.
- Developing partnerships among regional institutions could give students access to a wider range of facilities and coursework, enhancing healthcare training and workforce readiness while reducing unnecessary costs. For example, UMD has advanced equipment and labs that may not be available at smaller institutions, while the College of St. Scholastica offers many specialized healthcare courses, and Lake Superior College provides CNA and medical technician training.
- Senior care facilities require less formal education than hospitals, making them an accessible entry point for students pursuing healthcare careers. Increasing student volunteer opportunities in these facilities could help students gain relevant experience while addressing staffing shortages.
- Many healthcare administrators start in clinical roles. With excess capacity in UMD's LSBE's Health Care Management program, offering online or evening courses could increase enrollment while providing clinical professionals with a pathway into administrative careers.
- Although many UMD programs have already taken steps to align their learning outcomes with workforce needs, expanding these initiatives will further enhance UMD's contribution to workforce

development. Some proposed efforts to strengthen the connection between education and the workforce include a regional workshop on healthcare education alignment, monthly student-professional meet-and-greets, and cohort programs for students pursuing careers in healthcare.

- Historically, students pursuing a medical degree at the U of M Medical School's Duluth campus were required to transfer to the U of M Twin Cities campus for their last two years, making it challenging for students in the medical school to secure internship or career opportunities with Duluth-area healthcare institutions. However, beginning fall 2025 incoming students will complete the entire four-year medical education program in Duluth.
- Increased opportunities for students to engage in real-world healthcare experiences, such as site visits, job shadowing, class projects, and informational interviews, would enhance the students' exposure to the industry and improve career readiness.
- Expanding support for the Post-Secondary Enrollment Options (PSEO) program would allow high school students to take college-level healthcare courses that count toward degree requirements, not just as electives, creating a stronger pathway to higher education and career advancement.

Threats

- Gaining experience in the healthcare field can be difficult, as many jobs require prior experience, creating a cycle where students cannot secure jobs due to a lack of experience.
- There are an array of certificates, certifications, and licensure requirements (i.e., credentials) that accompany healthcare careers. Some of these are required for certain occupations, some for school admission, and others are preferred but not mandatory. Without clear guidance, students struggle to determine what to pursue.
- Many healthcare jobs require only a high school diploma but still demand knowledge, skills, and experience that typically come from obtaining a degree or certifications. For example, Minnesota law requires basic life support (BLS) and cardiopulmonary resuscitation (CPR) certification for most hospital workers, yet many job postings do not explicitly state this requirement.
- Student schedules can become incredibly demanding when internships or clinical rotations are added, especially for those also taking a full course load. This discourages students from pursuing valuable learning opportunities and can prevent them from gaining the experience needed for healthcare careers. If employers were open to offering shorter shifts or shifts that align with student schedules, it could help ease the burden on students aspiring to work in the healthcare sector.
- Internships in the healthcare sector are often unpaid, which creates financial burdens for students. According to research by the National Association of Colleges and Employers (NACE), requiring internships for academic credit can create financial and accessibility barriers, particularly for non-traditional and underrepresented students. NACE has also found evidence that unpaid internships reduce the likelihood of job offers and lead to lower starting salaries due to employer bias.
- Data from Lightcast indicates that, in the Duluth MSA, diversity rates are below 25% for all occupations examined in this analysis. In some fields, such as registered nursing, clinical laboratory technology, and physician assistant roles, diversity rates are even lower—falling below 10%. This suggests that barriers may exist that limit access for people of color in certain healthcare-related programs and careers.

- UMD is not part of the Duluth Workforce Development Board’s healthcare working group and may, therefore, be missing out on critical discussions between educators and the local healthcare sector.
- Employers are increasingly turning to online training programs provided by for-profit companies to train employees in technical skills. These external programs are often perceived as more flexible and tailored to specific industry needs. However, this trend may limit the opportunity for local partnerships with higher education institutions, which could offer valuable benefits such as closer collaboration, local workforce alignment, and the development of more region-specific training programs.

This SWOT analysis highlights structural barriers and promising opportunities for strengthening UMD’s role in healthcare workforce development. Opportunities, such as increasing student volunteer opportunities, fostering an internship culture that encourages participation regardless of credit requirements, and providing exposure to essential industry tools like Epic EMR, would give UMD students a competitive edge.

Addressing threats like complex certification requirements, financial barriers to unpaid internships, and burdensome student schedules is crucial for ensuring equitable opportunities, particularly for non-traditional and underrepresented students. The sector’s diversity gap further emphasizes the need for strategies to improve access and representation. By addressing these challenges—through targeted support and strategic collaborations—UMD will be better equipped to meet regional healthcare needs and strengthen its workforce development efforts.

Appendix A. Definitions

Associate degree: A two-year undergraduate degree that provides foundational knowledge in a specific field and can lead to employment or further education

Bachelor's degree: A four-year undergraduate degree awarded by colleges and universities, typically requiring completion of general and major-specific coursework

Basic life support (BLS) certification: A certification that verifies an individual's ability to perform cardiopulmonary resuscitation (CPR), use an automated external defibrillator, and provide other emergency care

Career pathways: A structured series of education and training steps that help individuals advance in a specific career field

Certified nursing assistant (CNA): A healthcare professional who provides basic patient care, such as bathing and feeding, under the supervision of a nurse

Certificate: A credential awarded after completing a short-term educational program focused on a specific skill or profession

Certification: A credential earned by passing an exam that validates a person's knowledge and skills in a particular field, often required for certain professions

Completions: The number of students who successfully finish a degree or certificate program within a given period

Cardiopulmonary resuscitation (CPR): An emergency procedure performed to maintain circulation and breathing in a person experiencing cardiac arrest

Credentials: Qualifications, such as degrees, certificates, and certifications, that demonstrate an individual's expertise or competency in a specific field

Degree: An academic credential awarded by a college or university after completing a prescribed course of study

Epic EMR: A widely used electronic medical records (EMR) system that helps healthcare providers manage patient information and streamline workflows

First aid certification: A credential verifying that an individual has been trained to provide basic medical care in emergency situations

Foundational roles: A group of occupations—selected for this analysis—that have lower-than-average wages (compared to Minnesota's 2023 median wage) and below-average projected growth rates relative to other selected healthcare occupations

Healthcare sector: The sector that provides medical services, including hospitals, clinics, nursing homes, and other healthcare providers

High-growth professions: A group of occupations selected for this analysis that have higher-than-average wages (compared to Minnesota's 2023 median wage) and above-average projected growth rates relative to other selected healthcare occupations

Internship: A short-term work experience that allows students or recent graduates to gain practical skills in a professional setting

Jobs in demand: A group of occupations selected for this analysis that have lower-than-average wages (compared to Minnesota’s 2023 median wage) and above-average projected growth rates relative to other selected healthcare occupations

Licensure: A mandatory legal requirement that grants permission to practice in a specific profession, often requiring exams and continuing education

Lightcast: A labor market analytics firm that provides data on employment trends, job demand, and workforce development

Master’s degree: A graduate-level degree that typically requires one to two years of study beyond a bachelor's degree and focuses on specialized knowledge in a field

Metropolitan Statistical Area (MSA): A geographic region defined by the US Census Bureau that includes a core urban area and its surrounding economically linked communities

Occupation: A type of job or profession that involves a specific set of tasks and responsibilities

O*NET: The Occupational Information Network, a US Department of Labor database that provides detailed information about job roles, skills, and qualifications

Post-baccalaureate program: An educational program designed for individuals who have already earned a bachelor’s degree and are seeking additional coursework or training

Program: A structured set of courses offered by a college or university that leads to a degree or certificate

Registered nurse: A licensed healthcare professional responsible for patient care, treatment planning, and coordination with medical teams

Stable careers: A group of occupations selected for this analysis that have higher-than-average wages (compared to Minnesota’s 2023 median wage) and below-average projected growth rates relative to other selected healthcare occupations

SWOT analysis: A strategic planning tool that evaluates the strengths, weaknesses, opportunities, and threats related to a project or business

Appendix B. Program and Certification Information

All programs, certifications, and credentials mentioned throughout this report are included in Table 24, below, along with a link to find more information on each one.

Table 24. Related Programs and Certifications Mentioned Throughout Report

<i>Training</i>	<i>Organization</i>
Basic life support for healthcare providers class	HeartCert
Basic life support/CPR for healthcare class	American Red Cross
Certified (AAMA) medical assistant credential	Lake Superior College
Certified medical assistant credential	American Association of Medical Assistants (AAMA)
Certified nursing assistant course	CareerForce
Certified nursing assistant course	Community Action Duluth
Certified nursing assistant program	Lake Superior College
Certified nursing assistant training	College of St. Scholastica
Certified surgical technologist certification	National Board of Surgical Technology and Surgical Assisting
Clinical pathology certification	American Society for Clinical Pathology
Community health worker program	Minneapolis Community and Technical College
Community health worker program	Minnesota West Community and Technical College
Community health worker program	Normandale Community College
Community health worker program	Northwest Technical College
Community health worker program	Rochester Community and Technical College
Community health worker program	St. Catherine University
CPR and first aid certification	HeartCert
CPR and first aid training	YMCA
CPR training and certification	American Red Cross
Master of Science PA medicine program	College of St. Scholastica
Medical coding course	Lake Superior College
Nursing assistant knowledge and skills tests	Minnesota State
Pharmacy technician certification credentials	Pharmacy Technician Certification Board
Pharmacy technician training program	Walgreens
Physical therapist assistant program	Lake Superior College
Post-baccalaureate nursing program	College of St. Scholastica
Pre-physical therapy program	College of St. Scholastica
Professional nursing associate degree	Lake Superior College
Radiologic technology associate degree	Lake Superior College
Radiologic technology certification	American Registry of Radiologic Technologists
Surgical technology associate degree	Lake Superior College

* Note: This table includes programs, certifications, and credentials identified during the preparation of this report. It is not an exhaustive list, and some information may become outdated over time.

SOURCE: BBER

*Bureau of Business and Economic Research
Labovitz School of Business and Economics
University of Minnesota Duluth*

Appendix C. Interview Participants

Table 25. Names and Titles of Interview Participants

Name	Title, Organization
Andrea Chartier	Workforce Development Specialist, Essentia Health
Kim Dauner	Professor of Health Care Management, University of Minnesota Duluth
Elena Foshay	Director of Workforce Development, City of Duluth
Eric Hessler	Associate Professor and Department Head, University of Minnesota Duluth
Anne Hinderliter	Biochemistry Professor, University of Minnesota Duluth
Jill Kolodzne	Director of Career Center, University of Minnesota Duluth
Christina Marshall	Program Coordinator, Essentia Health
Theresa Nystrom	Director of Workforce Strategy, Essentia Health

SOURCE: BBER