

A Healthy Dose of STEM Jobs

STEM jobs in health care are expected to be plentiful and well-paying in the coming years.



In the last issue of Trends, we examined the Core Component of the emerging STEM field in Minnesota. STEM, which stands for science, technology, engineering and math, is typically linked to industries like computer systems design, electromedical instruments manufacturing, architectural and engineering services, and management, scientific and technical consulting services, among others.

The STEM Core Component saw steady job growth in the state in the last decade, expanding more than twice as fast as the total of all industries from 2003 to 2013, although growth is projected to slow. But this group of STEM industries actually accounts for only 40 percent of total STEM employment in Minnesota, using the taxonomy developed by the Workforce Information Council's report "Exploring the High Tech Industry."

The health care industry has the other 60 percent. Although it is often overlooked as a high tech industry, health care obviously relies on science and technology. By reviewing STEM jobs across all industry sectors, the Workforce Information Council categorized 13 industry subsectors in the STEM Health Care Component, selecting only those sectors with a concentration level of 2.5 times the national average of STEM jobs.

These industries, which rely on a highly trained workforce to provide quality health care, are the focus of this article.

Healthy Growth in Health Care

Through 2013, Minnesota had about 335,000 jobs in STEM health care industries, according to data from DEED's Quarterly Census of Employment and Wages. In the last decade, STEM health care industries added jobs nearly four times as fast as all industries in

Minnesota, gaining just over 48,400 net new jobs, a 16.9 percent increase.

The largest employing STEM Health Care Component sector in Minnesota was general medical and surgical hospitals, with more than 116,000 jobs at 201 hospitals, accounting for just over one-third (34.8 percent) of total STEM health care employment. The next largest industry was offices of physicians, with about 65,000

jobs at 1,660 clinics, followed by skilled nursing homes, with about 48,500 jobs at 463 nursing care facilities.

Combined, those three sectors account for two-thirds (68.7 percent) of total STEM health care employment in the state (see Table 1).

The fastest-growing industry sector over the last decade was home health care services, which doubled in size from 2003 to

2013. Minnesota also saw rapid job growth at outpatient care centers; other professional, scientific and technical services (which includes veterinary services); medical and diagnostic laboratories; and offices of other health practitioners (which includes chiropractors; optometrists; mental health practitioners; physical, occupational and speech therapists; and all other health practitioners).

TABLE 1

Employment in Minnesota's STEM Health Care Industries, 2003-2013

NAICS Industry Title	NAICS Code	Number of Establishments, 2013	Number of Jobs, 2013	Average Annual Wages, 2013	2009-2013 Job Change	2007-2013 Job Change	2003-2013 Job Change
Total, All Industries	0	165,051	2,691,763	\$50,128	+4.6%	+0.1%	+4.4%
Total, STEM Health Care Industries		12,701	334,416	\$55,121	+4.9%	+7.5%	+16.9%
Health and Personal Care Stores	4461	1,777	15,850	\$36,088	+5.7%	+1.1%	+8.3%
Other Professional, Scientific and Technical Services	5419	2,928	14,397	\$50,440	+14.9%	+16.1%	+56.1%
Offices of Physicians	6211	1,660	64,936	\$91,052	+3.8%	+5.4%	+13.3%
Offices of Dentists	6212	1,890	15,581	\$50,440	-1.8%	+0.5%	+4.9%
Offices of Other Health Practitioners	6213	2,534	13,772	\$37,024	+22.5%	+31.0%	+47.7%
Outpatient Care Centers	6214	415	10,411	\$65,000	+8.7%	-7.2%	+60.5%
Medical and Diagnostic Laboratories	6215	103	2,628	\$66,664	+8.3%	+23.1%	+53.2%
Home Health Care Services	6216	459	21,434	\$25,324	+18.5%	+49.1%	+99.3%
Other Ambulatory Health Care Services	6219	241	6,693	\$50,908	+6.7%	+17.0%	+34.5%
General Medical and Surgical Hospitals	6221	201	116,313	\$57,512	+5.8%	+7.1%	+15.0%
Psychiatric and Substance Abuse Hospitals* (government only)	6222	22*	2,526*	\$53,196*	-10.2%	-19.9%	-13.8%
Specialty (exc. Psych. & Substance Abuse) Hospitals^ (2009 data)	6223	8^	1,377^	\$61,412^	ND	ND	ND
Nursing Care Facilities (Skilled Nursing Facilities)	6231	463	48,498	\$26,208	-5.2%	-1.1%	-6.0%

Source: DEED Quarterly Census of Employment and Wages (QCEW) program

Only two health care sectors experienced a net loss in employment over the last decade: psychiatric and substance abuse hospitals (which declined about 14 percent) and nursing care facilities (skilled nursing facilities), which lost just over 3,000 jobs from 2003 to 2013.

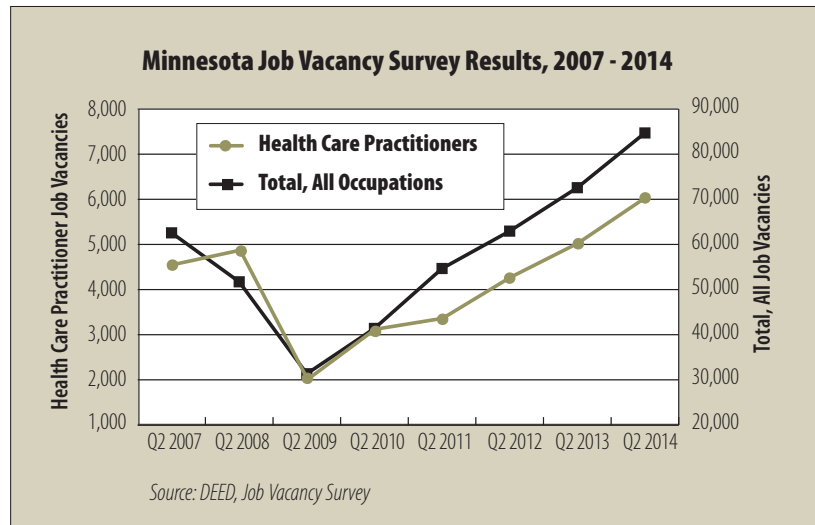
Much of that employment, however, has shifted into home health care services and to continuing care retirement communities and assisted living facilities for the elderly, which also doubled in employment in the last 10 years, though not classified as a STEM sector.

These Jobs Require Practice and Patients

As with the STEM Core Component industries, not every job in these sectors is STEM-related. For example, offices of physicians have just as many medical secretaries as registered nurses, and just as many billing and posting clerks as licensed practical nurses. In both cases, only the nursing positions are considered STEM occupations.

The Workforce Information Council report identified 61 STEM Health Care Component occupations, primarily in the health care practitioners and technical occupational group. These occupations comprise about half of the total jobs in the STEM health care industries, accounting for 168,540 jobs in

FIGURE 1



Minnesota in 2014, according to DEED's Occupational Employment Statistics program.

All 61 occupations are expected to see employment growth over the next decade, ranging from slower-than-average growth for chiropractors, dentists and nursing instructors to well-above-average growth for physician assistants, diagnostic medical sonographers, genetic counselors, nurse midwives, orthotists and prosthetists, and nurse practitioners. All of the well-above-average occupations are expected to grow more than 25 percent from 2012 to 2022.

In sum, these occupations are projected to gain more than 27,500 new jobs in the next 10 years, but they will also need new workers to fill nearly 34,500 replacement openings due to retirements or other existing workers leaving the labor force. According to DEED's

Employment Outlook, the state will have 62,220 total openings in STEM Health Care Component occupations from 2012 to 2022.

Stay in School

While these jobs are expected to be available and in demand, they won't necessarily be easy to get. Job seekers interested in the STEM health care field will need to stay in school. Well over 90 percent of the STEM Health Care Component occupations typically require postsecondary education for entry.

More than half of lower-skilled health care support occupations can be gained with a high school diploma or less. But only five of the 61 STEM Health Care Component occupations can be gained with a high school diploma or less, with the other 56 requiring at least a postsecondary vocational award.

Thirteen require at least an associate degree, nine require a bachelor's degree, 10 require a master's degree, and 18 require a doctoral or professional degree.

Combined, the occupations requiring postsecondary education account for 157,980 of the 168,540 STEM Health Care Component workers currently employed in the state. Those occupations are expected to make up an even larger portion of the employment picture by 2022, due to faster overall projected growth rates.

Help Wanted

Data from DEED's Job Vacancy Survey show strong current demand for health care practitioners and technical occupations as well, with employers reporting more than 6,000 job postings through the second quarter of 2014. After sinking during the recession, demand for health care practitioners has bounced back in recent years and is now well above pre-recession levels (see Figure 1).

Similarly, 94 percent of these vacancies require postsecondary education, including 42 percent that require vocational awards or associate degrees, 22 percent that require bachelor's degrees, and 30 percent that require advanced degrees. In addition, two-thirds of the openings expect at least one year of work experience, and 93 percent require a certificate or license (see Table 2).

Consequently, wages were significantly higher for these STEM Health Care Component occupations than for the total of all occupations. All but one health care practitioner occupation had a higher median hourly wage offer than the total of all occupations, and most median wage offers were well over \$20 per hour. Median wage offers ranged from about \$11.50 an hour for dietetic technicians to nearly \$55 an hour for psychiatrists and obstetricians and gynecologists. Only six of the 61 STEM Health Care Component occupations had below-average median hourly wages.

With 1,699 vacancies, registered nurses accounted for almost one-third of the total openings in the group. They had a median wage offer of \$26.90 per hour. Fifty-three percent of registered nurse openings, however, were part time. Likewise, 52 percent of the 840 vacancies for licensed practical nurses were part time, with a median hourly wage offer of \$17.13. Nurse practitioners had one of the highest job vacancy rates of any health care occupation with 555 openings and a median hourly wage offer of \$41.54.

Job seekers looking for a chance to use their science and technology skills in a field that offers high demand, high pay and high future prospects for growth should examine Minnesota's STEM health care field. ■

TABLE 2

Minnesota Job Vacancy Survey Details, Q2 2014

Occupational Group	Number of Job Vacancies	Part-time Vacancies	Requiring Postsecondary Education	Requiring 1+ Years Experience	Requiring Certificate or License	Median Wage Offer
Total, All Occupations	84,696	42%	36%	44%	33%	\$12.05
Health Care Practitioners and Technical	6,036	41%	94%	66%	93%	\$26.08

Source: DEED Job Vacancy Survey, Q2 2014