**Workforce Data Sources**

**Demand**

**Supply/Pipeline**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **K-12** |  | **Post-secondary completion data** |  | **Professional**  **licensing** |  | **Current labor market demand** |  | **Projected employment demand** |
| * **Statewide Longitudinal Education System—SLEDS** (Minnesota Office of Higher Education |  | * **Statewide Longitudinal Education System—SLEDS** (Minnesota Office of Higher Education * **Workforce Data Quality Initiative—WDQI** (DEED) * **Integrated Postsecondary Education System—IPEDS** (National Center for Education Statistics) * **MnSCU Graduate Follow-Up Survey** (MnSCU) |  | * **Professional licensure data** (Health licensing boards)\* * **Licensure renewal surveys** (MDH)\* |  | * **Occupational Employment Statistics--OES** (DEED) * **Occupations-in-Demand Indicator** (DEED) * **Job Vacancy Survey** (DEED) * **Hiring Difficulties Survey** (DEED) * **"Real-time" job openings data** (Help Wanted Online) * **Minnesota Hospital Association Job Vacancy Survey** (MHA)\* Supply too. * **Aging services data** (Aging Services)\* * **Care providers data** (Care Providers)\* |  | **Occupational projections** (DEED) |

\*Specific to the healthcare industry.

**Sources of Healthcare Workforce Data**

| **Data Item**  **Source** | **Unit of analysis** | **Data elements available** | **Occupational areas covered** | **Data collection details** | **How to access the data** | **Questions this dataset can answer** |
| --- | --- | --- | --- | --- | --- | --- |
| **Professional licensure data**  Various health licensing boards | Individual | * Counts of renewing and new licensees. Currently, MDH presumes licensees with “active” (or “active, restricted”) licenses are practicing. * Some demographic info * Mailing address * Practice location (subject to analyst validation) | **Licensed occupations:**   * Dental Hygienist * Dental Therapists * Dentists * Licensed Practical Nurse * Marriage & Family Therapists * Mental Health Counselors (LPCCs) * Pharmacists * Physical Therapist * Physical Therapist Assistant * Physician Assistants * Physicians * Psychiatrists * Registered Nurses * Respiratory Therapists * Social Workers | Data collection rules and procedures vary across boards, but in general, boards collect basic information on licensees online at the time of initial license application or renewal. Renewal cycles vary across professions: some professions require renewal every year; some every other year. Licensing boards collect this data for administrative rather than research purposes, so MDH analysts format, clean, and validate data before analyzing. | * Contact individual licensing board, or      * Use Minnesota Health Workforce Data Reporting Tool: [www.health.state.mn.us/divs/orhpc/workforce/database/healthsum.cfm](file:///C:\Users\jbostic\AppData\Local\Microsoft\Windows\Temporary%20Internet%20Files\Content.Outlook\40D53610\www.health.state.mn.us\divs\orhpc\workforce\database\healthsum.cfm) or * For specialized analyses, contact Minnesota Department of Health, Office of Rural Health and Primary Care (MDH, ORHPC): 651-201-3838. | **Questions about current supply, such as:**   * How many licensed healthcare professionals (e.g., physicians / RNs / dental therapists) are currently practicing in Minnesota? * Where are licensed healthcare professionals practicing, based on mailing address? |
| **License renewal questionnaire**  Minnesota Department of Health, Office of Rural Health and Primary Care (MDH, ORHPC) | Individual | Characteristics of new and renewing licensees, such as:   * Demographic info not collected by the respective licensing board * Practice setting * Educational attainment * Work status and future plans | **Licensed occupations:**   * Dental Hygienist * Dental Therapists * Dentists * Licensed Practical Nurse * Marriage & Family Therapists * Mental Health Counselors (LPCCs) * Pharmacists * Physical Therapist * Physical Therapist Assistant * Physician Assistants * Physicians * Psychiatrists * Registered Nurses * Respiratory Therapists * Social Workers | Online surveys are administered to licensees at the time they apply for or renew their professional license. For the last several years, MDH has gotten about a 50% response rate on their surveys (with slightly higher response rates among professionals with lower levels of education; e.g., nurses). Procedures are changing this year so that licensees will be presented with the online survey before they pay the fee for renewing their license. | * Contact Minnesota Department of Health, Office of Rural Health and Primary Care (MDH, ORHPC): 651-201-3838, or * Visit the MDH, ORHPC website to view data reports and fact sheets: [www.health.state.mn.us/divs/orhpc/workforce/index.html](file:///C:\Users\jbostic\AppData\Local\Microsoft\Windows\Temporary%20Internet%20Files\Content.Outlook\40D53610\www.health.state.mn.us\divs\orhpc\workforce\index.html) | **Questions about current supply, such as:**   * In what setting do most licensed healthcare professionals (e.g., pharmacists) work? * How long do they plan to continue practicing? * Who is practicing (age, gender, race, ethnicity)? |
| **Occupational Employment Statistics (OES)**  Minnesota Department of Employment and Economic Development (DEED) | Occupation | Employment of incumbent workforce:   * Counts of employed workers by occupation or by region * Wages by occupation or region (10th, 25th, 50th, 75th, and 90th percentile wages) | Data is collected on 800+ occupations, approximately 70 of which are health care occupations. The taxonomy includes licensed and non-licensed occupations.  Also includes industries (North American Industrial Classification System – NAICS). | OES is a biannual survey of Minnesota business establishments (an establishment is a business *location.* For example, Target is a business with multiple establishments in Minnesota). Establishments are sampled from the universe of employers who are covered by the unemployment insurance program. Employers report on the number of employees they have in specific occupational categories, and on wages.  The survey **includes**: full- or part-time paid workers, workers on paid leave, workers temporarily assigned to other units, paid owners, officers, and staff of incorporated firms. The survey **excludes**: proprietors of unincorporated firms, other self-employed and contract workers, unpaid family workers, and workers on unpaid leave. | * Contact a labor market analyst at the Minnesota Department of Employment and Economic Development: [deed.lmi@state.mn.us](mailto:deed.lmi@state.mn.us)**,**   **651-259-7384**   * **Use the OES online tool:** <https://apps.deed.state.mn.us/lmi/oes/> | **Questions about current employment, such as:**   * How large is the occupation, both statewide and regionally? * How much do workers in this occupation typically earn (statewide/regionally)?   (This data source cannot answer questions about occupations with high levels of self-employment, such as physicians.) |
| **Occupations-In-Demand**  Minnesota Department of Employment and Economic Development (DEED) | Occupation | Demand indicator (star rating—1 to 5 stars) to indicate the level of current demand by occupation, across economic development regions | Data is collected on 800+ occupations, approximately 70 of which are health care occupations. The taxonomy includes licensed and non-licensed occupations. | The OID indicator is based on three data points: size of the occupation, unemployment insurance claims within the occupation, and vacancy rates within the occupation. Therefore, it is a more robust measure of demand than just vacancy rates which is heavily influenced by turnover. Nursing occupations almost always show the greatest demand. (Note: this measure does not account for supply.) | * Contact a labor market analyst at the Minnesota Department of Employment and Economic Development: [deed.lmi@state.mn.us](mailto:deed.lmi@state.mn.us)**,**   **651-259-7384**   * **Use the OID online tool:** [mn.gov/deed/data/data-tools/oid.jsp](http://mn.gov/deed/data/data-tools/oid.jsp) | **Questions about current demand, such as:**   * What is the labor market demand for various healthcare professionals? (Statewide, and by region?)   (This data source cannot answer questions about occupations with high levels of self-employment, such as physicians.) |
| **Job Vacancy Data**  Minnesota Department of Employment and Economic Development (DEED) | Occupation | Number of reported job vacancies by industry, occupation, and Minnesota region. | Data is collected on 800+ occupations, approximately 70 of which are health care occupations. The taxonomy includes licensed and non-licensed occupations.  Also includes industries (North American Industrial Classification System – NAICS). | DEED surveys establishments twice annually to ask employers to identify certain characteristics of their current job openings. Characteristics include: job title (which gets coded into **occupation**), starting salary, part-time or full-time status, how much experience and education the position requires, and several other characteristics. Occasionally, DEED adds a tailored question to the survey that can help to answer specific timely questions. | * Contact a labor market analyst at the Minnesota Department of Employment and Economic Development: [deed.lmi@state.mn.us](mailto:deed.lmi@state.mn.us)**,**   **651-259-7384**   * **Use the JVS tool online:** <http://mn.gov/deed/data/data-tools/job-vacancy.jsp> | **Questions about current demand, such as:**   * What is the vacancy rate for this occupation? Where in the state are vacancies the highest? * Are wage offers increasing in this occupation over time (adjusted for inflation)? * What share of vacancies are part-time vs. full-time?   (This data source cannot answer questions about occupations with high levels of self-employment, such as physicians.) |
| **Hiring Difficulties Survey (periodic survey)**  Minnesota Department of Employment and Economic Development (DEED) | Occupation | * Whether or not a particular position was “hard to fill.” * Employers’ opinions on why the position was hard to fill. (Helps to clarify whether the difficulty is supply- or demand-related) * Steps employers took to try to fill the position. * Ramifications of not filling the position on the business. | Select occupations—can be customized. The only healthcare occupation for which there is currently data is nursing. The data is now old.  DEED says that if there’s funding they would be able to do another round of occupations (mental health?) in Feb/March/April of 2015. | This survey occurs periodically, depending on available funds. DEED contacts employers who have indicated that they have job vacancies in select occupations during the Job Vacancy Survey (see above).  DEED phones each employer and conduct a 20+ question survey that asks in-depth questions about hiring difficulties.  Data is cleaned and validated by DEED analysts and post-weighted to be representative of the population of employers who had a vacancy in the JVS. | * Contact a labor market analyst at the Minnesota Department of Employment and Economic Development: [deed.lmi@state.mn.us](mailto:deed.lmi@state.mn.us)**,**   **651-259-7384**   * View existing reports from past hiring difficulty surveys: [mn.gov/deed/newscenter/publications/reports/hiring-difficulties/index.jsp](http://mn.gov/deed/newscenter/publications/reports/hiring-difficulties/index.jsp) | **Questions about current demand and skills gaps, such as:**   * What are some of the reasons for hiring difficulties in select occupations? * What is the impact of not being able to hire workers in certain occupations?   (This data source cannot answer questions about occupations with high levels of self-employment, such as physicians.) |
| **“Real-time” job openings**  Wanted Analytics / Help Wanted Online | Occupation/job | * “Real-time” job openings based on scraped job banks. Data is available by occupation, by region, and over time. * Certifications, skills, degrees needed in particular specialties * Specialized tools and analyses that provide indicators of workforce shortages in particular occupations. | Data is collected on 800+ occupations, approximately 70 of which are health care occupations. The taxonomy includes licensed and non-licensed occupations. | Help Wanted Online (HWOL) is a private vendor, but endorsed/partly staffed by the Conference Board, which is affiliated with state LMI shops. Real-time job opening data is considered a complement to—but not a replacement for—LMI data. Methodologically, HWOL it is limited because the sample of jobs advertised online is not necessarily representative of all job vacancies. (But the resulting selection bias is probably not as bad in health care as it is in other fields like manufacturing.) The parent company, Wanted Analytics, scrapes virtually all U.S. job boards and de-duplicates job openings. Analysts can control certain parameters about which job openings are included in analyses (e.g., remove Craigslist jobs). | These data are provided by a private company and must be purchased through a license agreement. Visit the Conference Board website at: <https://www.conference-board.org/data/helpwantedonline.cfm>  Some MnSCU campuses have purchased licenses and their licensing agreements may permit data sharing. | **Questions about current demand, such as:**   * How many job postings are there for certain healthcare specialists (e.g., RNs) statewide? Regionally? * Has the demand—as indicated by job postings—increased over time? * Details on postings (e.g., certifications and skills needed). May help to better understand hiring trends and the shifting skill demands of positions. * Can capture demand information on new and emerging professions better than other data sources.   (This data source cannot answer questions about occupations with high levels of self-employment, such as physicians.) |
| **Minnesota Hospital Association Data**  Minnesota Hospital Association | Individual | Demographic data including age, date of hire, gender, ethnicity, pay, type of location (hospital, clinic, other), job type, staff type (full-time, part-time, casual), degree, union status. | * 13 Registered Nursing specialties (ER, OR PeriAnesthesia, Labor/Delivery, Med/Surg, ICU, Pediatrics, Primary Care/Clinic, Home Health Rehab, Behavioral, Specialty, Other) * APRN/CRNA * Nurse Practitioners * Nurse Leaders * LPN * Medical Assistant * Medical Lab Technician * Medical Lab Technologist * Imaging (rad tech, CT, MRI, other) * Imaging (ultrasound) * Speech Therapist * Physical Therapist * Physical Therapist Assistant * Occupational Therapist * Respiratory Therapist * Certified Athletic Trainer * Paramedic/EMT * Pharmacist * Pharmacy Technician * Physician Assistant * Physician-Primary Care * Physician-Surgical Specialty Care * Physician-Medical Specialty Care * Physician-Procedural Specialty Care * Surgery Technician | One contact person is assigned by each participating organization/facility to provide the demographic data to the MHA once a year.  MHA provides a template to fill out and a link to safely and securely return the data. Each template is run through and application that checks for errors.  A master file is compiled and sent to Towers Watson for one last scrub and final upload to the online tool.  System participants have access to their own data and a statewide, metro/non-metro benchmark. MHA produce a statewide summary of the data once a year that is provided to all MHA members. | The data is not public, so additional analysis is on a request basis only.  Contact Ann Gibson at [anngibson@mnhospitals.org](mailto:anngibson@mnhospitals.org) or Nathalie Squire at [nsquire@mnhospitals.org](mailto:nsquire@mnhospitals.org). | **Questions about current demand in the hospital setting only, such as:**   * Headcounts * FTE counts * Turnover rate * Retirement rate * All exits rate * Years of service * Percentage of workforce retirement-eligible and considered at-risk of departure * Percentage of workforce with less than 5 years of service and considered more at-risk of departure (not yet established or “anchored” workers) * Percentage of new hires * Ability to project needed hiring based on a 0% growth assumption * Ability to create unique scenarios/customized projections. |
| **LTC Imperative** | Occupation | Data reported by long-term care providers on employee wage levels, number of vacant positions and annual turnover rates. Includes both nursing homes and community-based senior housing providers. | Vacancies and turnover cover RNs, LPNs, nursing assistants, home care aides and dietary aides. Wage data is collected for many more positions, including over 70 in nursing homes and over 30 in community providers. | Wage data is collected annually and reported in August or September. The vacancy and turnover data is from a different annual survey and is reported in early February of each year. | The LTC Imperative is the keeper of the data, and the contacts are Jeff Bostic and LeadingAge Minnesota and Todd Bergstrom at Care Providers of Minnesota. Facility level data is not public but we do publicly release the overall data results. | **Questions about current demand in the long-term care setting only, such as:**   * Salary level by position and how much it changes each year * Number and percentage of vacant positions * Annual employee turnover rate by position |
| **Department of Human Services** | Occupation | Mandatory data reports by nursing homes cover staffing levels and annual employee retention percentages. | Nursing Administrators, RNs, LPNs, nursing assistants, medication assistants, mental health workers, activities workers, social workers | Data is reported annually for the year ended September 30. Data is typically not available until approximately June of the following year. | Data is public and the individual facility data can be obtained from Teresa Lewis at DHS. Data is used to calculate quality measures for the Minnesota nursing home report card. | **Questions about current demand in the nursing home setting only, such as:**   * Annual employee retention rates for each position * Number of hours used for each position * Ratio of hours per resident day for each position |
| **Employment Projections**  Minnesota Department of Employment and Economic Development (DEED) | Occupation | Ten-year projected change (growth or decline) in employment by occupation (and industry). Includes estimates of:   * Openings due to growth / new job creation * Openings due to retirements or people leaving the field for other reasons * Estimates are available statewide or by planning area or development region. | Data is collected on 800+ occupations, approximately 70 of which are health care occupations. The taxonomy includes licensed and non-licensed occupations.  Also includes industries (North American Industrial Classification System – NAICS. | Projections are based on data collected via the OES survey and derived from mathematical models developed by the federal Bureau of Labor Statistics.  The unit of analysis is the number of jobs (both full- and part-time) and not the number of people. | * Contact a labor market analyst at the Minnesota Department of Employment and Economic Development: [deed.lmi@state.mn.us](mailto:deed.lmi@state.mn.us)**,**   **651-259-7384**   * Use the DEED projections tool online: <http://mn.gov/deed/data/data-tools/employment-outlook.jsp> | **Questions about future demand, such as:**   * What is the projected labor market demand for certain health care professionals over the next ten years? By region? * How fast are various health care occupations growing?   (This data source is not the best for answering questions about occupations with high levels of self-employment, such as physicians.) |
| **Postsecondary Program Completer Data**  Integrated Postsecondary Education Data System (IPEDS) | Individual program completer | Counts of postsecondary program completers, by institution, program, award level (degree), region. | All programs from MOHE-certified postsecondary institutions in the state of Minnesota. (Includes public, private non-profit, and private for-profit institutions.) Health care and non-health care programs are included. | The National Center for Education Statistics collects this information from all postsecondary institutions in the U.S. It is collected primarily for administrative purposes, not statistical or research purposes. IPEDS data does not include information on professional licensing or residencies. The taxonomy of programs (Current Instructional Programs, CIP) includes 2,000 different programs and is loosely connected to the 800-occupation SOC structure. MnSCU has an ongoing effort to improve the “crosswalk” between programs and occupations. | Visit the IPEDS data center: <http://nces.ed.gov/ipeds/datacenter/> or  Access program completers data (by program) via MnSCU’s LMIwise online program planning tool:  <http://www.iseek.org/lmiwise/> | **Questions about new supply of graduates, such as:**   * How many people completed a program in a particular field? * At a particular degree level? * At a particular institution? * In a specific region of the state or nation? |
| **MnSCU Graduate Follow-Up Data**  Minnesota State Colleges and Universities System | Individual program completer | Many data elements; however, of greatest importance for our work would be the program that MNSCU graduates completed, their current employment status, their current job title, and whether or not that job is “related” to the program that they just completed. | All MnSCU programs. | The MnSCU data allows researchers to construct “related employment rates” for MnSCU graduates of particular programs. This is another indication of over- or under-supply of workers to a particular occupation.  The survey is carried out by individual institutions, and methodological rules are not followed strictly. Details about methodology are thin. | Connect with MnSCU – Craig Schoenecker | **Questions about the alignment of supply and demand, such as:**   * What share of MnSCU graduates from a particular program (e.g., nursing) found employment in a related occupation within a year? |
| **Statewide Longitudinal Education Data Systems – “SLEDS”**  Minnesota Office of Higher Education (MOHE) and Minnesota Department of Education (MDE) | Individuals | P-20 longitudinal education-related data on individual students, including demographic data, K-20 enrollment and attendance data, academic test (MCA, ACT and SAT), result data, college GPA, major, degree, and graduation data. The dataset also includes DEED data, which allows users to gauge where graduates of particular programs end up becoming employed in the labor market. | Occupations are not a part of the SLEDS dataset. SLEDS data cannot tell us in which occupations individuals become employed. It can only tell us in which *industries* they eventually become employed. | MOHE and MDE links together various P-20 datasets from MDE and MOHE via a probabilistic matching method. (Because MDE academic data uses a MARSS number rather than a social security number, the linking process relies on multiple variables including MARSS, first and last name, gender, and date of birth). The dataset contains K-12 enrollment data back to 1997 (and forward), allowing analysts to trace the path of student cohorts from 1997 forward. | * SLEDS data can be accessed at: [www.sleds.mn.gov](http://www.sleds.mn.gov).The current reports focus on the high school to college transition, but in the future these will be expanded to look at labor market attachment. | **Questions about the predictors of student success such as:**   * (How) does academic and labor market success vary by individual characteristics such as race, gender, or other demographic characteristics? * Which levels and types of education lead to higher wages? * What industries employ college graduates, and at what wages? |
| **Workforce Data Quality Initiative—“WDQI”**  Minnesota Department of Employment and Economic Development (DEED) | Individuals | Longitudinal postsecondary and labor market data, including program completion, employment, and wage information. | Currently, occupations are not a part of the SLEDS dataset. SLEDS data cannot tell us in which occupations individuals become employed. It can only tell us in which *industries* they eventually become employed. | Workforce and education data are collected through a collaboration between DEED and MOHE. Students with valid Social Security numbers are followed longitudinally through education into the workforce using Minnesota wage record data. | * Contact a labor market analyst at the Minnesota Department of Employment and Economic Development: [deed.lmi@state.mn.us](mailto:deed.lmi@state.mn.us)**,**   **651-259-7384**   * Use the Graduate Employment Outcomes tool online: <http://mn.gov/deed/data/data-tools/graduate-employment-outcomes.jsp> | **Questions about the predictors of labor market success such as:**   * What hourly pay can a graduate expect 12 and 24 months after graduation? * What types of businesses employ recent (health care) graduates * What share of health care graduates were employed without interruption during the second year after graduation? |
| **O\*NET**  United States Department of Labor, Employment and Training Administration | Occupation | General skills, knowledge, ability, tasks, work activities, and similar characteristics of occupations. | All 1,100 occupation in the O\*NET taxonomy. | Via a worker survey, O\*NET collects data about a variety of characteristics of 1,100+ occupations. | Visit the O\*NET website:  <http://www.onetonline.org/> | **Questions about occupational attributes, such as:**   * What are the skill, knowledge, and ability requirements of health care occupations? |