Health Workforce Policy Brief

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The Value of Real Time Labor Market Information for Monitoring Health Workforce Demand:

A Case Study Examining Employer Demand for Health Information Technology Skills

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BACKGROUND

As the United States healthcare system undergoes practice transformation, workforce planners and educators need up-to-date information on the skills employers expect of the future health workforce to ensure a properly trained pipeline of workers. An emerging source of data, Real Time Labor Market Information (RT-LMI), is being used to monitor employer demand by extracting information from online job ads. Although RT-LMI is increasingly being used to track the skills in demand from the general labor market,[1] this type of data is a relatively new source for tracking changes in the health workforce. This study examines the value of RT-LMI for identifying how frequently, and for which occupations, skills related to health information technology (HIT) are specifically demanded by healthcare employers. The goal of this study was to understand the value and limitations of RT-LMI for monitoring health workforce demand, including allied health professions.

METHODS

RT-LMI refers to the extraction of data on a regular basis from online job ads using an automated process called web crawling or "spidering." We obtained a dataset from the job search engine company "LinkUp," which contained job ads posted in the fifty states and the District of Columbia during the 2015 calendar year. LinkUp provided the text information identifying the following fields: unique job identifier, employer/company name, job title, city, state, zip code, county, date posted, date created, date checked by LinkUp, job ad website url, and job description. The job descriptions were delivered as unstructured text strings that required additional coding to identify keywords of interest. Our study team developed a coding and parsing process to define the key variables of interests: occupation and HIT skills.

CONCLUSIONS AND POLICY IMPLICATIONS

The patterns we found suggest that healthcare employers are requesting a range of HIT skills across occupations. Use of these data requires some caution and work to refine the data mining process. The coding process requires several iterations to ensure that the coding structure has content and face validity. A considerable challenge in using RT-LMI related to a specific industry is having the subject matter expertise to establish the initial coding structure required to correctly classify records. While continuing work is needed to improve the use of these data, knowing how RT-LMI best informs health workforce planning is valuable to ensure that the current and future health workforce have the training and education they need to succeed.

KEY FINDINGS

The following were key study findings:

- Over 1.4 million records had one or more of the occupations from our designated healthcare occupation terms, and approximately half had a job description that could be used to search for skills required by the employer.
- The percentage of records with a job title and a job description that referenced a specific HIT skill varied greatly by occupation, with most occupations having fewer than 10% of records containing a HIT skill from our list of search terms.

1. Maher & Maher. Real-Time Labor Market Information: An Environmental Scan of Vendors and Workforce Development Users. Report in collaboration with Jobs for the Future & New York City Labor Market Information Service. September 2014. http://www.jff.org/sites/default/files/publications/materials/Real%20Time%20Labor%20Market%20Information.pdf. Accessed December 8, 2016.

- The 5 occupations with the highest percentage of job ads that referenced a specific HIT skill were: medical records and health information technicians, 60.4% of records; health educators, 19.5%; medical and clinical laboratory technologists, 17.0%; podiatrists and optometrists, 13.0%; and medical assistants, 12.1%.
- Among our seven domains of HIT skills searched, the "health IT (general)" domain, comprised of search terms such as health information, health information technology, IT, or information technology, was most commonly identified (37.7% of records), and "privacy and security" (e.g., data security, cyber security, and risk analysis) was the least common domain (0.5% of records).

Table 1: Occupations for Which Health Information Technology Skills Were Identified

Occupation	Records with at Least 1 HIT Skill	Total Numberof Records with Occupation Title	Percent of Records With At Least 1 HIT Skill*	Percent of Job Ads Identifying This Occupation**
Medical Records and Health Information Technicians	197	326	60.4	0.03
Health Educators	17	87	19.5	0.01
Medical and Clinical Laboratory Technologists	148	873	17	0.10
Podiatrists	11	84	13.1	0.27
Optometrists	35	270	13	0.04
Medical Assistants	4,048	33,471	12.1	4.01
Medical Transcriptionists	61	547	11.2	0.06
Physicians and Surgeons	3,132	29,995	10.4	4.06
Healthcare Social Workers	1,283	15,151	8.5	2.04
Medical and Clinical Laboratory Technicians	36	544	6.6	0.06
Mental Health Counselors	49	741	6.6	0.11
Dental Assistants	285	4,675	6.1	0.64
Pharmacists	1,143	19,323	5.9	2.44
Opticians, Dispensing	6	103	5.8	0.01
Nurse Practitioners	1.056	19,759	5.3	2.73

*Denominator is the number of job ads with a job title and a job description. Each job ad could contain multiple occupations or multiple HIT skills (N = 873,209)
**Denominator is the number of job ads with a matching occupation in the job title (N = 1,443,604)

More information about the value of RT-LMI in monitoring health workforce demand is available in the report: Stubbs BA, Frogner BK, Skillman SM. The Value of Real Time Labor Market Information for Monitoring the Health Workforce: A Case Study of Demand for Health Information Technology Skills. Center for Health Workforce Studies, University of Washington, Feb 2017.

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