

Developing a Process Infrastructure to Capture Supply, Education, and Demand Data for Indiana's Nursing Workforce

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The primary purpose of this project was to develop an infrastructure that established guidelines for the collection, analyses, and reporting of data utilizing the National Minimum Data sets (MDS) on the supply, education, and demand data for Indiana's nursing workforce. The initiative was undertaken as part of the Indiana Center for Nursing's (ICN) strategic initiative to create the centralized repository for Indiana's nursing workforce data and to ensure a seamless transition of the data to the future national workforce data repository. The infrastructure guidelines were created using recommendations from the *Future of Nursing: Campaign for Action*, the National Forum of State Nursing Workforce Centers, and the Indiana Board of Nursing. The standardized infrastructure guidelines promote timely and accurate collection, analyses, and reporting from the MDS documents not only regarding nursing supply and education, but also nursing demand, a data set that was not collected by the ICN before this project.

Keywords: Data management plan, infrastructure, national minimum data sets, nursing demand, nursing supply, nursing workforce

Nursing workforce data can be challenging to capture; however, they are necessary to influence health policy and support decision making directed at improving the nursing profession. Given the importance of nurses to the delivery of quality health care, accurate workforce data is imperative. To influence and drive decision making, the data must be accurate, accessible, and captured in a timely manner. For instance, the number of students admitted to a nursing program influences the overall nursing workforce. Thus, to make an informed decision regarding the number of admissions, schools of nursing must have access to statewide supply and demand data.

The Institute of Medicine (IOM) (2011) called for state workforce centers to capture accurate nursing workforce data to promote strategic state and national initiatives. A specific initiative was for workforce centers to produce effective strategies for workforce planning and policies to increase data collection across the nursing profession. The purpose of the current project was to develop a process infrastructure to capture the supply, education, and demand data regarding Indiana's nursing workforce for the Indiana Center for Nursing (ICN). The data management plan ensures that the ICN becomes the one-stop statewide repository for all nursing workforce data, allows for consistency in capturing nursing workforce data, and provides guidance to ensure a precise data collection process occurs.

The proposed data management plan informs Indiana's nursing workforce planning and policymaking stakeholders with

nursing workforce data for influencing health care policy, shows Indiana's response to nursing workforce data collection, and promotes the seamless transition of Indiana's nursing workforce data if a national repository based on the National Minimum Data sets (MDS) is created. Before the completion of this project, the ICN was not capturing nursing demand data; thus, the new infrastructure makes a significant contribution to the state by including all three different data sets.

Background and Significance

The National Forum of State Nursing Workforce Centers creates an environment that ensures collaborating organizations achieve solutions to everyday problems regarding nursing workforce data collection and analysis. State workforce centers existed for many years before the 2010 IOM recommendations; however, not all workforce centers actively collect nursing workforce data. At the time of this study, 34 nursing workforce centers existed, but only 31 were collaborating with the forum to collect nursing workforce data, and only 19 were using the MDS to capture all three areas of the nursing workforce data: supply, education, and demand (The National Forum of State Nursing Workforce Centers [Forum], n.d.).

The forum, which established the MDS, provides and promotes standardized documents, which influence data analysis and dissemination efforts. The forum collaborated with state nursing

workforce centers to define the MDS and facilitated guidelines for “standardizing the collection of state-level nurse workforce data, which would enable state and national nurse workforce planners to quickly and accurately implement best policy approaches” (Forum, n.d.).

The following definitions were used throughout the project regarding the terms *supply*, *education*, and *demand*:

- **Supply:** The number of licensed nursing professionals (registered nurses [RNs], licensed practical nurses [LPNs], and advanced practice registered nurses [APRNs]) eligible or available for employment
- **Education:** The student population and the degrees offered by schools of nursing
- **Demand:** The demand for licensed professionals (RNs, LPNs, APRNs, CNAs) to staff organizations.

The supply MDS contains 18 variables that must be included on the surveys each state conducts. State workforce centers can collect other variables, but the focus must remain on the MDS to ensure the transition of data to a future national repository. The board of nursing (BON) collects key nursing workforce data for Indiana via annual licensure renewals (Indiana Professional Licensing Agency, n.d. -a).

The education MDS is a standardized data set that includes 17 variables on nursing education programs. As with the supply data, the education data guides workforce centers on the data points necessary for a seamless transition of data to the state repository and future national repository. In Indiana, the Education Committee at the ICN collects the education data captured from the Annual Report Form for Indiana Schools of Nursing. The annual report is administered by the BON and is completed by deans and directors of state-accredited schools of nursing (Indiana Professional Licensing, n.d. -b). Collaboration between the BON and the ICN ensures that nursing supply and education data points remain current and that all data points align with the MDS.

The demand MDS contains eight variables and is the minimum standardized data set for demand data collected from each state. Collection of the demand data is conducted by surveying all organizations that employ licensed health care providers or the organizations each state chooses to include in the survey process. The data committee of the ICN conducts biennial surveys of organizations that employ licensed nursing professionals. Before the project, the ICN was not capturing the nursing demand data; however, the demand data collection process was included in the development of the new infrastructure.

Assessment of Current Data Collection Processes

The Health Resources and Services Administration (HRSA) published a nursing supply and demand workforce model that includes state projections (U.S. Department of Health and

Human Services, 2014a), and these projections are causing state workforce centers to capture precise statewide data for each state. For example, *The Future of the Nursing Workforce: National- and State-Level Projections 2012-2025* projected the 2025 demand for Indiana nurses at 71,400 and the supply at 91,600, a surplus of 20,200 nurses (U.S. Department of Health and Human Services, 2014b). The IOM recommendations are influencing national workforce centers to develop better infrastructures for capturing workforce data. In December 2014, HRSA projected that the supply of RNs will increase to 3,849,000 by 2025, but the demand for RNs is projected to grow to only 3,509,000 based on current use (Nursing News, 2015). However, state workforce centers are reporting different projections. For example, based on 2022 demand data, the Indiana Department of Workforce Development is projecting that RNs and LPNs will remain in the top 10 “hot jobs for Hoosiers,” (Hoosier Hot 50 Jobs 2014-2016. [n.d. -a]). Hoosier “jobs were selected based on Indiana’s Occupational Projections and wage data from the Occupational Employment Statistics survey; both produced by Indiana’s Department of Workforce Development” (Hoosier Hot 50 Jobs 2014-2016. [n.d. -b]). These differences may affect nursing health care policy, especially if the decisions are based solely on projections that are not compared to precise and accurate statewide data. These findings led to the strategic initiative for developing the infrastructure aimed at statewide data collections with the focus on the ICN capturing and serving as the centralized repository for the state’s nursing workforce data.

The assessment of the current processes utilized by the ICN yielded a significant need for a developed infrastructure to meet the center’s strategic initiative, but also to ensure that the supply, education, and demand data were collected utilizing the MDS. The gap analysis indicated that the ICN, in collaboration with other professional organizations, was already collecting the nursing supply and education data points via the MDS; however, the demand data was not being captured. The gap analysis indicated the need to create a new innovative approach for collecting all areas of nursing workforce data utilizing the MDS as the framework to collect Indiana’s data.

Indiana’s Response to Nursing Workforce Data Collection

The ICN was the primary organization involved in creating the data management infrastructure. The center’s mission is to “Unite statewide nursing education and practice leaders to affect change, through one voice, to ensure a highly qualified nursing workforce that meets the needs of Indiana’s health care consumers” (Indiana Center for Nursing, n.d.). The ICN, which is not a regulatory body, consists of a board of directors, an executive committee, and standing and ad hoc committees that develop and implement strategies for nursing in the state. The ICN supports nursing leaders seeking resolutions and strategies for challenges disrupting the

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