What Data States Can Do to Collect to Build Better Nursing Workforce Data Systems

The Issue: Efforts to create state-level nursing workforce data systems are frequently hindered by a lack of funding, organizational barriers and analytical challenges. This final brief, in a series of three, outlines strategies to facilitate the collection of robust data to support evidence-based nursing workforce policy decisions.

Why It Matters:
- In an effort to standardize and improve state-level nursing data collection, the Health Resources and Services Administration (HRSA), the National Council of State Boards of Nursing (NCSBN) and the Forum of State Nursing Workforce Centers have developed minimum datasets (MDS).
- Significant efforts are underway at the state and national level to develop data collection instruments and online data collection tools. These efforts provide a wealth of best practices on what data states should collect, how to collect it, and how to translate that data into policy-relevant analyses.

Key Findings:
- States should consult with nursing workforce stakeholders in other states and at the national level to ensure that the data they collect are robust, comprehensive and compatible with MDS standards.
- Deciding on which data collection method to employ requires states to balance competing priorities. Investigating how other states have weighed the flexibility, cost, quality and feasibility considerations of using different data collection methods is a useful first step.
- Online data collection systems significantly lower costs and improve data quality.
- States should draw on the expertise, best practices and lessons learned by states with more experience in collecting and analyzing nursing data.

How should states collect data to ensure quality, usefulness and consistency?
- States that currently collect nursing workforce data use different methods to collect the data, including licensure applications and renewals, routine surveys, and continuous monitoring. Each has challenges:
    - Collecting data through the licensure process reaches 100% of the nursing workforce in practice in the state, but may exclude compact nurses who are required to be licensed in the state where they live rather than the state where they are employed. Two states that capture information through licensure data are North Carolina and California's Office of State Health Planning and Development.
    - Surveys are flexible and can incorporate questions of immediate policy interest. Three states that use surveys are New York, Washington and the University of California at San Francisco. The validity of survey data can be problematic if response rates are poor and result in a sample that is not representative of the state's nursing workforce.
    - Iowa employs a continuous monitoring approach that uses news clipping services, surveys and personal communication with professionals and practices to allow for real-time information on nurses in the state. This method is time-intensive and costly, especially for states that have a large workforce.
- Nursing is the single largest licensed health profession. No matter which strategy is used, data collection, cleaning, and analysis are expensive. Incorporating data collection into existing regulatory licensure and using online data collection methods can help keep costs lower.
- To the extent possible, states should build online data collection instruments. Putting the questions into an online system:
    - Significantly reduces the amount of data cleaning necessary before analyses can begin.
    - Highlights missing values and/or prevents the nurse from exiting a screen without answering, thereby increasing response rates on individual questions.
    - Promotes the use of dynamic skip patterns that enable the nurse only relevant questions (e.g., if the nurse checks "unemployed," the form does not request information on current business address and might ask whether they are currently seeking employment in nursing).

- ▪ Allows flexibility to change or add questions as data quality issues are identified and policy issues emerge.
- Online data collection instruments can be developed and maintained through an outside vendor or through in-house IT expertise. The in-house approach is often cheaper, more flexible and promotes ownership of the data collection system.
- Questions and data values should remain consistent enough between years to allow longitudinal comparisons. They also need to be consistent with national MDS efforts so state data can be aggregated to the national level.
- Once a state has identified what data elements to collect, the next step is to determine how to word the data collection questions. Numerous inventories of nursing workforce data collection instruments exist, and they provide useful guidance to ensure questions are clear and elicit the needed information.

What data should be collected?
- Much work has gone into developing the nursing minimum data set. Ideally a state-level data set includes information on supply (e.g., licensure), demand (e.g., employers) and pipeline (e.g., education programs) to provide a comprehensive picture of the nursing workforce.
- The Forum of State Nursing Workforce Centers posts MDS questionnaire guides on their website and Nooney and colleagues have summarized the data elements needed to build rigorous workforce data systems. This work enables states to not start from scratch and to remain consistent with national MDS efforts.
- States that are already collecting data should work with the MDS to ensure consistency without compromising the state's ability to do its own longitudinal comparisons.
- Asking open-ended or subjective questions (e.g., "When do you plan to retire?") can result in unreliable data as employment and economic conditions change or as nurses change their plans. Instead, collecting enough data over time will allow analysts to examine nursing workforce entry, exit and re-entry patterns year to year over time.

How do you determine "effective" nursing supply?
- One of the primary reasons states develop data systems is to accurately enumerate the overall number of nurses in the state as well as the number by geographic/employment setting and by specialty. To do this, the data need to:
    - ▪ Distinguish nurses in active practice from those that hold a license but are not working
    - ▪ Collect hours worked so that full-time-equivalents (FTE) can be calculated since, in some cases, headcount can differ significantly from FTE.
    - ▪ Identify where the nurse works, not where s/he lives. Because many nurses practice in multiple practice settings, it is beneficial to collect hours worked in up to 3 practice settings so that analyses can split the nurse's FTE between multiple geographic locations and/or employment settings.
    - ▪ Determine the nurse's practice specialty. States have to decide whether a nurse's specialty will be based on self-report or determined by an algorithm that includes a combination of the nurse's self-reported specialty, certifications and employment setting.
- Determining nursing specialties has taken on heightened importance with the increased attention being paid to the adequacy of the primary care workforce. States are struggling to identify how many nurses, including Nurse Practitioners, work in primary care. Defining and documenting who counts as primary care is critical.

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