Nursing Webinar Series

Two States’ Experiences Using HRSA’s Web-Based Nursing Supply and Demand Model
History and Purpose of the HRSA Web-Based Nursing Model

• Over the past several decades, HRSA has made a commitment to help state workforce researchers and planners via data collection, projections/research, technical assistance

• This commitment intensified around 2003 when RWJF provided seed money for starting state nursing workforce centers (“Colleagues in Caring Program”)
  > State workforce centers had access to nurse-related data, but limited resources to use the data to forecast future supply and demand

• HRSA has made previous version so the nursing supply and demand models available to researchers on different platforms (FORTRAN, FileMaker Pro software, now web-based)

• Goals
  > Allow states to use their own data—which in many cases is more reliable than data available from national sources

  > Allow state workforce researchers to update workforce projections more frequently than is possible for HRSA to do

  > Perform sub-state level modeling to support local planning—consistent with HRSA’s mission to improve access to care for people living in disadvantaged and isolated communities

• This version of the web-based model was essentially a trial version and focused on supply
Using HRSA’s Nursing Supply Model Through the Years

Linda M. Lacey
Director, South Carolina Office for Healthcare Workforce
South Carolina AHEC Program Office


“South Carolina’s Critique of the HRSA (Nursing) Supply Model” presentation (by Nicole McCleary) at the National Forum of Nursing Workforce Centers Conference. Orlando, FL. May 2016
Improvements over the years

- Loading data into the model
  - Fortran vs. Excel

- Making the model more easily available

- Better documentation about model assumptions and data sources/dates
Persistent problems through the years

- Lack of clarity about when model adjustments are applied
- ‘permanent’ adjustment factors that can not be changed to reflect state realities
  - Retirement rates by age and educational status
  - Work effort percentages by age/education/race
  - Education upgrade estimators
Pet Peeve - Inconsistent Axes

High Graduates – 10% more new graduates each year

Low Graduates - 10% fewer new graduates per year
# Nursing Supply Model - Delayed Retirement Scenario

**State:** South Carolina

<table>
<thead>
<tr>
<th>Year</th>
<th>Headcount</th>
<th>Active</th>
<th>New Entrants</th>
<th>Separations</th>
<th>Hours Worked</th>
<th>FTE Avg. Hours Worked (RN)</th>
<th>Base Year</th>
<th>Retirement change (years)</th>
<th>Avg. hours modifier (factor)</th>
<th>Simulation Period</th>
<th>LPNs added in 1st year</th>
<th>AD level RNs added in 1st year</th>
<th>BA level RNs added in 1st year</th>
<th>Scenario Description</th>
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<td>like baseline but age for exiting the workforce is increased by 2 years</td>
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Texas Center for Nursing Workforce Studies

- Established in 2004 by TX legislature
- Department of State Health Services
- 21 member advisory committee of nursing leaders
- 5 staff people
- Focus on data collection and reporting
Available data

- TX Board of Nursing licensure data for RNs, VNs, APRNs
  - Demographics: sex, race, age, education
  - Geographical: residence and practice locations
  - Employment status, setting, position, specialty
Available data

- Nurse Staffing Data
  - Hospitals (2006-2016)
  - Long Term Care (2008, 2012-2016)

- Filled and vacant positions, separations, temp positions, methods of interim staffing, recruitment and retention strategies, consequences of inadequate staffing, hiring practices, transition to practice, etc.
Available data

- Education data from professional, vocational, and graduate nursing education programs
  - Student demographics
  - Faculty numbers and demographics
  - Enrollment, graduation, and admission numbers
  - Curriculum information
    - Length, clinical hour requirements, advanced placement options, program tracks, etc.
Projecting Supply and Demand in TX

- Last projections 2005
- Barriers to updating projections
  - Staff resources
  - Funding
  - Validated models
- In late 2015, we contracted to put TX level data into the HRSA model
Using HRSAs Web-based Model

- Became available in February 2016
- Available to everyone
- State-level data can be input
- Forecasting models as analytical tools
  - Projections based on survey data
  - Limited inputs for state-level data
  - Dated
Web-based v TX Model

<table>
<thead>
<tr>
<th>TX Model</th>
<th>HRSA Web-based Model</th>
<th>Web-based Model with 2012 TX data</th>
<th>Web-based Model with 2014 TX data</th>
<th>Web-based Model with 2015 TX data</th>
<th>Actual TX licensure #</th>
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## Web-based v TX Model

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<th>HRSA Web-based Model with 2012 TX data</th>
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* % diff = difference from actual licensure #
Web-based v Actual

3% Difference
Importance of State-Level Data

- More accurate data in national forecasting models
- Can develop your own model
- Ability to assess numbers from other surveys, reports, etc.
- When you don’t have state-level data
  - Rely on what’s available
  - Understand and educate others on how to best interpret the numbers
Contact Information

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tcnws@dshs.texas.gov

www.dshs.texas.gov/c.hs/cnws
HRSA's Web-Based Nursing Supply Model: Limitations and Improvements

Health Workforce Technical Assistance Center Webinar
March 23, 2016

Arpita Chattopadhyay
Chief, Workforce Analysis Branch
National Center for Health Workforce Analysis
Bureau of Health Workforce (BHW)
Health Resources and Services Administration (HRSA)
Rationale for Web-based Model for Nursing

• State variations in nursing regulations
• Availability of licensure data
• Workforce policies determined by states
• Need for well distributed workforce
Challenges in Projecting Future Workforce

• Projecting the future based on the past

• Uncertainty of many possible changes in delivery and financing

• Extent of supply and demand interaction

• Cost/resources needed for systematic assessment of each determinant of supply and demand
  • Inter-state migration and the role state laws

• Results and interpretation driven by assumptions

• The unit of analysis is critical; state averages can mask enormous variations within the units being studied (communities); What is the appropriate level?
Version II underway

- More stable application with Improved processing time
- Better and secured new registration/log in process
  - Robot check
- Emphasis on supply model
- Enhanced User Interface
  - Simpler design and organized projection model menu options
  - About the model screen
  - Announcement and updates screen
- User testing: Use e-mail link in the application to volunteer
Connect With Us

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National Center for Health Workforce Analysis
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Health Resources and Services Administration
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E-mail: achattopadhyay@hrsa.gov

Web: http://bhw.hrsa.gov/healthworkforce/index.html

Workforce Connections newsletter: www.hrsa.gov/subscribe