Nebraska’s Multi-Regional Nursing Workforce Model

The National Forum of State Nursing Workforce Centers - June 2019

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Funded by the Nebraska Board of Nursing
Nebraska Center For Nursing: Background

- Created by the Nebraska Legislature July 13, 2000 (Sect. 71-1796 – 71-1799)
- C4N was established to monitor the nursing workforce in Nebraska including supply and demand, recruitment, retention and utilization of nurses
- C4N is funded through nursing licensure fees
Center for Nursing Mission/Vision

Vision
Nebraska Nurses: when and where we need them

Mission
The Nebraska Center for Nursing drives change in the nursing workforce through data, education, and policy development
Strategic Initiatives

Data, Collaboration, Promotion

https://center4nursing.nebraska.gov/resources
Supply Data

• RN renewal in even years, LPN in odd years
• Workforce survey is attached to renewal
• Built from minimum data set
• Most nurses believe they must complete
• Return rate 90% annually
# Nebraska’s Multi-Regional Statewide Nursing Workforce Forecasting Model

## Data Collection through Renewal Surveys (RNrs & LPNs)

<table>
<thead>
<tr>
<th>17. How many employers do you currently have as a nurse?</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 0 or 1-ring</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>18. How many hours do you spend per week in your PRIMARY nursing employment?</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 0 - 5 hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>19. Do you volunteer as a nurse?</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>20. How many hours do you spend per month in your PRIMARY nursing employment?</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 0 - 5 hours</td>
</tr>
</tbody>
</table>

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### 2018 REGISTERED NURSING WORKFORCE SURVEY

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. What is your race?</td>
<td>White/Caucasian, Black/African American, American Indian/Alaska Native, Asian, Other</td>
</tr>
<tr>
<td>3. What is your gender?</td>
<td>Male, Female</td>
</tr>
<tr>
<td>4. What is your education level?</td>
<td>Associate Degree, BSN, MSN, PhD</td>
</tr>
<tr>
<td>5. What is your primary position?</td>
<td>Nurse Practitioner, Nurse Manager, Nurse Educator, Other</td>
</tr>
<tr>
<td>6. What is your state of residence?</td>
<td>Nebraska, South Dakota, Wisconsin, Kansas, Missouri, Other State or US Territory</td>
</tr>
<tr>
<td>7. What is your primary position?</td>
<td>Nurse Practitioner, Nurse Manager, Nurse Educator, Other</td>
</tr>
<tr>
<td>8. What is your current employer?</td>
<td>Hospital, Health System, Clinic, Other</td>
</tr>
<tr>
<td>9. What is your primary position?</td>
<td>Nurse Practitioner, Nurse Manager, Nurse Educator, Other</td>
</tr>
<tr>
<td>10. What is your primary position?</td>
<td>Nurse Practitioner, Nurse Manager, Nurse Educator, Other</td>
</tr>
</tbody>
</table>

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## Nebraska Center for Nursing
Nursing Projections
HRSA Projections: From Nursing Shortage to Nursing Surplus

Nebraska's Multi-Regional Statewide Nursing Workforce Forecasting Model

NURSING SHORTAGE/SURPLUS

Surplus

-808,000

Shortage

Nebraska: +3,500 (RNs)

HRSA Year of Report

2004

Projections Year

2020


2020 2025 2030

HRSA Year of Report

808,000 340,000 293,800

Nebraska's Multi-Regional Statewide Nursing Workforce Forecasting Model

Timeline: Nursing Workforce Trends & Projections

09/11/2001

Large numbers are entering the profession in their late 20s and early 30s

Great Recession

"613,000 jobs have been added in the healthcare sector since the recession began."

RNs over the age of 50

Hospital employment (> 100,000)

Collaboration with Dr. Craig Moore

The use of “Economic Regions”

HRSA Projections - Shortage
Nebraska HRSA Model
1/1/2004
1/1/2007
1/1/2010

Ohio Nursing Model

HRSA Projections - Surplus
Louisiana Multiregional Nursing Model
1/1/2013
12/2014
1/1/2016

Maine Multiregional Model

Nebraska Multiregional Model
11/2017

Great Recession
09/11/2001

Great Recession
09/11/2001

Great Recession
09/11/2001

Great Recession
09/11/2001

Great Recession
09/11/2001

Great Recession
The Economic Development Regions defined by DOL are based on work commuting patterns (LED) across cities and counties, along with demographics and employment data.

The Nebraska DOL uses employers and employees information to create job flows known as “Local Employment Dynamics (LED).”

The forecasting models use these regions as geographic areas to identify nursing workforce needs over time.

“Economic Regions”
Nebraska’s Multi-Regional Statewide Nursing Workforce Forecasting Model

“Economic Regions”

Nursing demographics from Renewal Surveys

- State
  - Economic Region
    - County
      - Cities/Zip Codes

Allows to forecast nursing workforce by geography (metro areas vs. rural) and connect that information to overall status of the economy (i.e., jobs growth)
Metro vs. Non-Metro Economic Regions

“Non-Metro” Regions

Panhandle
Sandhills
Northeast
Central
Grand Island MSA
Mid Plains
Lincoln MSA
Southeast

“Metro Regions”

Omaha Consortium
2018 Nursing Workforce

Percentage of RNs by Region:

<table>
<thead>
<tr>
<th>Region</th>
<th>RNs</th>
<th>Nebraska Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metro Regions</td>
<td>67%</td>
<td>60%</td>
</tr>
<tr>
<td>Non-Metro Regions</td>
<td>33%</td>
<td>40%</td>
</tr>
</tbody>
</table>

Metro: 1,333 RNs per 100,000
Non-Metro: 961 RNs per 100,000

Sources: 2018 Nebraska RN Renewal Survey. American Community Survey (Population Estimates, 2018. Table PEPANNRES)
Definitions

“A FORECAST is focused on the future supply and demand for nursing given the current trends and standards of care.”

“A WORKFORCE MODEL is a policy tool that provides a picture of the alternative future supply and demand for nursing under different scenarios - simulation.”

- A model can determine by how much a policy variable would have to change to affect a desired outcome – sensitivity analysis.
- A model is flexible and can be easily updated as new developments take place (e.g. a new healthcare facility opening, a new nursing program starting, a change in regulations, etc.).

Source: Dr. Craig Moore
Nebraska's Multi-Regional Statewide Nursing Workforce Forecasting Model

Accounts for shifts in the demographic make-up of the region and other factors affecting demand for health care services.

Account for changes in the way nurses are utilized in various health settings.

Changes in the volume of non-resident patients treated in the region.

Changes in the number of nurses recruited from outside the region.

Source: Dr. Craig Moore
Demographics Drives the Demand for Nursing

Inpatient Days, By Age, Urban/Non-Urban Population

Actuarial data shows that the older one gets, the more healthcare they likely need and the pattern of healthcare demand for males and females vary during most of their lives because of child bearing and other factors.

Source: Dr. Craig Moore
Rural Versus Metropolitan Demand

- Rural/frontier patients frequently have to be treated for major medical problems in a larger hospital outside their region.
- The general health of rural/frontier patients, however, is better and they require fewer hospitalizations.
- Metropolitan areas may have large numbers of people without health insurance who are reluctant to seek care.

2010 U.S. Census Bureau
Utilization rates for each healthcare setting can be changed to simulate what would happen if the ratio of nurses to patient care were to increase or decrease.

This utilization rate is checked against national norms to insure that the figures are reasonable.

Source: Dr. Craig Moore
Supply for Nurses

Nebraska’s Multi-Regional Statewide Nursing Workforce Forecasting Model

Source: Dr. Craig Moore
The Models – Characteristics & Functions

Set of Models: RNs – APRNS & LPNs

By Region

Statewide Model

Control of Variables

Linked through Excel Files

Independent or connected

Settings can be adjusted to create supply and demand simulations for policy analysis
2019 shows a statewide shortage of nurses:

- RNs: 2,849 shortage
- APRNs: 418 shortage
- LPNs: 1,349 shortage

Total Nursing Shortage: 4,616 FTE nurses

By 2025, a nursing shortage of 5,435 FTE nurses is expected.

Source: Nebraska Center for Nursing – Nursing Supply and Demand Model (2017-2025).
Nebraska Nursing Supply & Demand Forecast

- All nursing types are experiencing shortages that will be increased over the following years.

- The Panhandle and Sandhills Regions have the highest proportion of unmet demand for RNs.

- The Omaha Region has the highest proportion of unmet demand for LPNs.

- There is a higher demand for LPNs in proportion to the demand for RNs in the Southeast Region.

Source: Nebraska Center for Nursing – Nursing Supply and Demand Model (2017-2025).
Nebraska Nursing Supply & Demand Forecast

Nursing Shortages % change 2019-2025

**RN**
- Metro Regions: 18.3%
- Non-Metro Regions: 3.3%

**APRN**
- Metro Regions: 36.3%
- Non-Metro Regions: 64.1%

**LPN**
- Metro Regions: 36.9%
- Non-Metro Regions: -0.6%

Source: Nebraska Center for Nursing – Nursing Supply and Demand Model (2017-2025).
Projected Nursing Shortages (all type of nurses) by Region in 2025

Legend
Nursing shortage in 2025

1-Panhandle: -215
2-Sandhills: -42
3-Mid Plains: -205
4-Central: -406
5-Grand Island: -206
6-Northeast: -340
7-Omaha: -2,671
8-Lincoln: -1,139
9-Southeast: -211

Nebraska’s Multi-Regional Statewide Nursing Workforce Forecasting Model
Using the Model for Policy Analysis

Simulation
The new VA facility in Kearney will add 225 beds to the system. What increase in RN demand will result by adding this new facility in the Central Economic Region?

Without the VA facility, there is a shortage of 128 RNs in the Central Region. By adding this facility, the shortage will increase to 613 RNs, a difference of 485 RNs.

What if….the New VA Facility in Kearney Starts Operations in 2019?

<table>
<thead>
<tr>
<th>Year</th>
<th>Regional Demand</th>
<th>Growth - New beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>1,689</td>
<td>1,689</td>
</tr>
<tr>
<td>2018</td>
<td>1,698</td>
<td>2,183</td>
</tr>
</tbody>
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New Facility
Dissemination of Data
Regional Dialogues

Nebraska Nursing Workforce

Led by Craig Moore, Ph.D., economist and national expert on nursing workforce models and projections

by 2025 projections show that all economic regions in Nebraska will experience a significant nursing shortage

Regional Dialogues

Join the discussion!
- Learn about the current and projected nursing workforce in Nebraska
- Open dialogue between key stakeholders and the Nebraska Center for Nursing to address the nursing shortage

Target audience: CEO/Administrators, CNO/DON, CFO, Health Educators, Public Officials (or Elected Officials)

Scottsbluff July 23
- Regional West Health Services
- 2:00-4:00 PM

North Platte July 24
- Great Plains Health
- 9:30-10:30 AM
- 2:00-4:00 PM

Kearney July 24
- Younes Center
- 8:30-10:30 AM

Lincoln July 25
- Bryan Health Plz
- 8:30-10:30 AM

NORTH July 25
- Faith Regional Health Services
- 2:00-4:00 PM

Omaha July 26
- Thompson Center at UNO
- 8:30-10:30 AM

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Nursing Workforce Dialogues

Cities and Economic Regions visited during the Nursing Workforce Dialogues:

1. What do you know? Does this data match with what you are seeing?
2. What have you done? What efforts have you made to help alleviate the shortage in your area?
3. What can the Nebraska Center for Nursing do to help or partner?
Nursing Workforce Dialogues

- Six dialogues with nurses, CEO/administrators, CNO/DON, CFO, health educators, public officials and elected officials
- Informed of expected nursing supply and demand, the nursing workforce gap for LPNs, RNs, and APRNs projected to 2025 for each economic region.
Themes from the Dialogues

- The dialogues validated results of the models with the current nursing workforce needs present at each site, and informed about current strategies used to alleviate the nursing shortage.

- Themes clustered around generational issues, recruitment, retention, education, faculty shortage, clinical sites, new care delivery models and more
Nursing Educator Conference (June 7, 2019)
Lincoln, Nebraska.

Dialogues with nurse faculty to identify nursing workforce challenges for educators:

**Question 1:** Tell me about your faculty? Shortage?

**Question 2:** What Prevents Programs from Full Enrollment? (Are there empty seats?, Applicant qualifications, faculty shortages, physical space, clinical sites?)

**Question 3:** Creative Solutions?
Themes and Strategies

- Informed CFN Strategic Plan
- Validates current workforce shortage
- Provides data for grant work and for policy formation
- Sets stage for collaboration with other nursing organizations
- Has projected the CFN as The Center for Nursing workforce data
## Acknowledgments

### Organizations:

- Nebraska Center for Nursing and its Board of Directors
- Nebraska Board of Nursing
- Nebraska Hospital Association
- Nebraska Healthcare Association
- Nebraska Organization of Nurse Leaders

### Individuals:

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