Commission on a High Performance Health System
North Dakota Site Visit - July 18, 2007

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Associate Dean for Rural Health and Director, Center for Rural Health

Connecting resources and knowledge to strengthen the health of people in rural communities.

Focus On:

• Health Care in Rural America
• Health Care in North Dakota
The overarching **mission** of a high performance health system is to...

...help everyone, to the extent possible, lead long, healthy, and productive lives.
Important differences between rural and urban areas.

Important differences between rural and urban areas that affect health care delivery

- Healthcare availability
- Volume, case and service mix
- Demographics
- Income, education, insurance status
- Health behaviors
- Population density
Health Care Infrastructure: Hospitals

- Total # of Hospitals Nationwide = 4,919  
  (Kaiser)
- Total # of Small Rural Hospitals = 1,591  
  (Small Rural Hospital Improvement Project)
- Total # of Critical Access Hospitals = 1,286  
  (Flex Monitoring Team)
## Health Care Infrastructure: Personnel

<table>
<thead>
<tr>
<th>Health Professional Shortage Areas (HPSAs)</th>
<th>Metropolitan</th>
<th>Non-Metropolitan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medical Designations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of HPSA Population</td>
<td>1912</td>
<td>3823</td>
</tr>
<tr>
<td></td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td><strong>Dental Designations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of HPSA Population</td>
<td>1169</td>
<td>2390</td>
</tr>
<tr>
<td></td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td><strong>Mental Health Designations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of HPSA Population</td>
<td>920</td>
<td>1642</td>
</tr>
<tr>
<td></td>
<td>36%</td>
<td>64%</td>
</tr>
</tbody>
</table>

(*BHPr, OWEQA, Division of Shortage Designation, April, 2007)
Important differences between rural and urban areas that affect health care delivery

- Healthcare availability
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Rural Health Behaviors:

- Adolescents most likely to smoke
- Adults most likely to smoke
- Alcohol consumption higher among adults living in non-metro counties
- Obesity higher for women and men
- Physical inactivity

(CDC - Health, United States, 2001)
Important differences between rural and urban areas that affect health care delivery

- Healthcare availability
- Volume, case and service mix
- Demographics
- Income, education, insurance status
- Health behaviors
- Population density

North Dakota Frontier Counties

36 of 53 North Dakota Counties designated as Frontier (less than 5 persons per square mile) Based on 2000 Census
State Scorecard: North Dakota

- In top 1/4 of states overall
- 85% of adults are insured
  - Rural Males and Native Americans more likely to be uninsured (SPG, 06)
- In top 10 in unnecessary hospitalizations
- Ranked 2nd in Medicare reimbursement per enrollee

Medicare Hospital 30-Day Readmission Rates, by Regions, 2003

<table>
<thead>
<tr>
<th>Percentiles</th>
<th>Rate of hospital readmission within 30 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Mean</td>
<td>18</td>
</tr>
<tr>
<td>North Dakota</td>
<td>16</td>
</tr>
<tr>
<td>10th</td>
<td>14</td>
</tr>
<tr>
<td>25th</td>
<td>16</td>
</tr>
<tr>
<td>75th</td>
<td>20</td>
</tr>
<tr>
<td>90th</td>
<td>22</td>
</tr>
</tbody>
</table>

Data: G. Anderson and R. Herbert, Johns Hopkins University analysis of 2003 Medicare Standard Analytical Files 5% Inpatient Data

(Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006)
Ratio of Rates of Inpatient & Part B Spending During the Last Two Years of Life to the U.S. Average (Deaths Occurring 2000-03)

1.15 to 1.37 (5)
1.00 to < 1.15 (6)
0.85 to < 1.00 (32)
0.81 to < 0.85 (8)

(Dartmouth)

Standardized FTE Physician Labor Inputs per 1,000 Decedents During the Last Two Years of Life (Deaths Occurring 2000-03)

24 or More (5)
21 to < 24 (10)
18 to < 21 (27)
Fewer than 18 (9)

(Dartmouth)
Ratio of Primary Care to Medical Specialist FTE Labor Inputs During the Last Two Years of Life (Deaths Occurring 2000-03)

The Relationship Between the Ratio of Primary Care to Medical Specialist Physician Labor Inputs and Days Spent in Intensive Care (Deaths Occurring 2000-03)
Primary Care

- Health is better in areas where there are more primary care services.
- People who receive primary care are healthier.
- Costs of care are lower in areas where there are more primary care services.

(Starfield, et. al. 2005)

The Relationship Between the Ratio of Primary Care to Medical Specialist Physician Labor Inputs (Deaths Occurring 2000-03) and CMS hospital compare composite quality score

R² = 0.11

(Dartmouth)
Percent of Heart Failure Patients Given Discharge Instructions - Why Not the Best?

Top Hospitals 91%

Average All Reporting Hospitals: 57%
Average All Hospitals in North Dakota: 67%
One Rural North Dakota Hospital: 59%

Top Hospitals represents the top 10% of hospitals nationwide.
Top hospitals achieved a 91% rate or better

NOTE: For quality ranking, smaller values equal higher quality.)
Percent of Pneumonia Patients Given Initial Antibiotic(s) within 4 Hours After Arrival - Why Not the Best?

Top Hospitals 92%

<table>
<thead>
<tr>
<th>Hospital Type</th>
<th>Average All Reporting Hospitals</th>
<th>Average All Hospitals in North Dakota</th>
<th>The same rural North Dakota Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Hospitals</td>
<td>92%</td>
<td>89%</td>
<td>98%</td>
</tr>
</tbody>
</table>

Top Hospitals represents the top 10% of hospitals nationwide. Top hospitals achieved a 92% rate or better.

(http://www.hospitalcompare.hhs.gov)

Observed and Predicted AMI Hospital Mortality, by Risk and Hospital Group

<table>
<thead>
<tr>
<th>Provider Type</th>
<th>Number of Cases</th>
<th>Risk</th>
<th>Predicted Mortality</th>
<th>Observed Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAH</td>
<td>73</td>
<td>Low</td>
<td>5.7</td>
<td>2.7</td>
</tr>
<tr>
<td>PPS Small</td>
<td>47</td>
<td>Low</td>
<td>6.2</td>
<td>2.1</td>
</tr>
<tr>
<td>PPS Large</td>
<td>1,489</td>
<td>Low</td>
<td>4.8</td>
<td>3.1</td>
</tr>
<tr>
<td>CAH</td>
<td>179</td>
<td>High</td>
<td>25.0</td>
<td>23.5</td>
</tr>
<tr>
<td>PPS Small</td>
<td>121</td>
<td>High</td>
<td>23.7</td>
<td>19.8</td>
</tr>
<tr>
<td>PPS Large</td>
<td>682</td>
<td>High</td>
<td>21.1</td>
<td>19.8</td>
</tr>
</tbody>
</table>
Factors Contributing to High Performance

- Organization of health care
  - Consolidation/Networks
  - Shared personnel
  - Shared services
- Use of technology
  - Tele-care
- Primary Care

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