A Tool for Measuring Quality in Small Rural Hospitals

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National Rural Health Association Annual Meeting
May 21, 2005
The rural hospitals that survive will be the institutions that demonstrate they are able to provide good quality care.

- IOM Reports
- AHA/CMS Hospital Quality Alliance
- Pay for Performance
The Environmental Context of Rural Health Quality

• There is a strong environmental context to quality issues. Differences in organizational size and complexity result in different types of quality issues that need to be addressed and different responses to these issues.
Developing Relevant Quality Measures for Rural Hospitals

- Evaluate existing quality indicator and performance measurement systems to assess their relevance for rural hospitals.

- Convene an expert panel to make recommendations for quality measures that are relevant for rural hospitals.

- Develop and test a performance improvement system that provides a core set of quality measures for rural hospitals on an ongoing basis.
Sources of Quality Measures

JCAHO
AHRQ
National Quality Forum
CMS
Apples to Apples
Rural Wisconsin Health Cooperative
Maryland Hospital Association QI Project
Georgia Hospital Association CARE
Criteria Used for Evaluating Quality Measures

- Prevalence in rural hospitals with less than 50 beds
- Ease of data collection effort in rural hospitals with less than 50 beds
- Internal usefulness for rural hospitals with less than 50 beds
- External usefulness for rural hospitals with less than 50 beds
A Set of Relevant Quality Measures for Rural Hospitals with Less Than 50 Beds

• 11 core JCAHO measures related to pneumonia, congestive heart failure, and AMI.
• 3 medication dispensing and education measures.
• 1 infection control measure.
• 2 procedure-related measures.
• 1 financial measure.
• 2 other measures (monitoring of ER trauma vital signs, use of advanced directives).

Additional Measurement Areas

- Develop quality measures for core rural hospital functions not considered in existing measurement sets
  - Emergency Department
  - Transfer Communication
  - Medication Safety Practices
Emergency Department Measures

- Timeliness of care
  - Chest Pain/AMI
  - Pneumonia
  - Trauma
Transfer Communication

For all ER transfers to another acute care facility, was communication sent on:

- Patient identification
- Patient care (e.g. vital signs, test results, provider documentation)
- Patient management (i.e. pre-transfer provider communications)

(Includes components from EMTALA and CCR)
Medication Safety System Checklist

- Includes elements from AHA, Leapfrog, Institute for Safe Medication Practices
  - Renal dosing
  - Allergy documentation
  - High risk medication storage, distribution and administration
  - Anticoagulation monitoring services
  - Insulin sliding scale protocol
  - Medication information availability
  - Pharmacist available in person, on-call, or by phone 24/7
Field Test

• Partnership with Stratis Health/HealthInsight

• Rural hospitals with ≈ 50 acute beds in MN, NV, UT recruited by Stratis Health and HealthInsight

• 22 rural hospital participants collected data over 6 months (3/04-9/04)
Findings

• Measure Readiness
• Hospital Readiness
• Support Process Readiness
**Measure Readiness Assessment**

- Can be used for comparative measurement as is or with minimal modifications.

- Will need changes and additional testing in order to be used for comparative measurement, but the general approach seems appropriate.

- Important subject for comparative measurement, but need a new measurement approach.

- Not an important subject for comparative measurement (e.g. uniformly high results)
# Inpatient Heart Failure Measurement Results

<table>
<thead>
<tr>
<th>Measure</th>
<th>CMS National Data</th>
<th>Sample Range</th>
<th>Sample Average</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>LVF Assessment</td>
<td>70%</td>
<td>0-90.5%</td>
<td>49.2%</td>
<td>7 hospitals 69 cases Ready</td>
</tr>
<tr>
<td>ACEI at Discharge</td>
<td>68%</td>
<td>50%-77.8%</td>
<td>69.2%</td>
<td>7 hospitals 13 cases Ready</td>
</tr>
<tr>
<td>Six Discharge Instructions</td>
<td>4%</td>
<td>0-50%</td>
<td>16.2%</td>
<td>7 hospitals 37 cases Ready</td>
</tr>
<tr>
<td>Smoking Assessment and Counseling</td>
<td>29%</td>
<td>0%</td>
<td>0%</td>
<td>1 hospital 2 cases</td>
</tr>
</tbody>
</table>

Usefulness Issues: Consider cross-cutting approach
# Inpatient Pneumonia Measurement Results

<table>
<thead>
<tr>
<th>Measure</th>
<th>CMS National Data</th>
<th>Sample Range</th>
<th>Sample Average</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antibiotics within 4 Hours</td>
<td>62%</td>
<td>42.9%-100%</td>
<td>76.2%</td>
<td>Ready</td>
</tr>
<tr>
<td>8 hospitals</td>
<td></td>
<td>8 hospitals</td>
<td>84 cases</td>
<td></td>
</tr>
<tr>
<td>Oxygenation Assessment within 24 Hours</td>
<td>95%</td>
<td>100%</td>
<td>100%</td>
<td>Little variation</td>
</tr>
<tr>
<td>8 hospitals</td>
<td></td>
<td>8 hospitals</td>
<td>84 cases</td>
<td></td>
</tr>
<tr>
<td>Pneumococcal vaccine assessment and administration</td>
<td>17%</td>
<td>0%-100%</td>
<td>32.6%</td>
<td>Consider cross-cutting approach</td>
</tr>
<tr>
<td>8 hospitals</td>
<td></td>
<td>8 hospitals</td>
<td>43 cases</td>
<td></td>
</tr>
</tbody>
</table>
## Inpatient Pneumonia (cont.)

<table>
<thead>
<tr>
<th>Measure</th>
<th>CMS National Data</th>
<th>JCAHO</th>
<th>Sample Range</th>
<th>Sample Average</th>
<th>Readiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking Assessment and Counseling</td>
<td>NA</td>
<td>41%</td>
<td>0-100%</td>
<td>15%</td>
<td>Consider cross-cutting approach</td>
</tr>
</tbody>
</table>
## Inpatient SIP Measurement Results

<table>
<thead>
<tr>
<th>Measure</th>
<th>CMS National Data</th>
<th>Sample Range</th>
<th>Sample Average</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antibiotics Administered with 1 Hour of Incision</td>
<td>48%</td>
<td>20%-100%</td>
<td>49.4%</td>
<td>Ready</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 hospitals</td>
<td>77 cases</td>
<td></td>
</tr>
<tr>
<td>Antibiotics Discontinued within 24 Hours of Closure</td>
<td>41%</td>
<td>0% - 100%</td>
<td>68.8%</td>
<td>Ready</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 hospitals</td>
<td>77 cases</td>
<td></td>
</tr>
<tr>
<td>Appropriate Antibiotic for Procedure</td>
<td>91%</td>
<td>46.2% - 100%</td>
<td>72.7%</td>
<td>Ready</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 hospitals</td>
<td>77 cases</td>
<td></td>
</tr>
<tr>
<td>Measure</td>
<td>CMS* National Data</td>
<td>Sample Range</td>
<td>Sample Average</td>
<td>Comments</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------</td>
<td>--------------------</td>
<td>--------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Aspirin within 24 Hours of Arrival</td>
<td>NA</td>
<td>25%-93.8% 22 hospitals</td>
<td>59.9% 466 cases</td>
<td>Needs sample adaptation</td>
</tr>
<tr>
<td>ECG within 10 Minutes of Arrival</td>
<td>NA</td>
<td>16.7%-83.3% 22 hospitals</td>
<td>50.8% 500 cases</td>
<td>Needs sample adaptation</td>
</tr>
<tr>
<td>Blood Draw within 10 Minutes of Arrival</td>
<td>NA</td>
<td>0%-45.8% 22 hospitals</td>
<td>15.8% 449 cases</td>
<td>Needs sample adaptation</td>
</tr>
<tr>
<td>Thrombolytics within 30 Minutes of Arrival</td>
<td>NA</td>
<td>0%-83.3% 11 hospitals</td>
<td>33.3% 33 cases</td>
<td>Needs sample adaptation</td>
</tr>
</tbody>
</table>

*CMS measures use inpatients not ED patients.
## Other ED Measurement Results

<table>
<thead>
<tr>
<th>Measure</th>
<th>CMS National Data</th>
<th>Sample Range</th>
<th>Sample Average</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma Vital Signs</td>
<td>NA</td>
<td>27.3%-77.3%</td>
<td>51.5%</td>
<td>Needs trauma sample that includes transfers, admissions, surgery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20 hospitals</td>
<td>779 cases</td>
<td></td>
</tr>
</tbody>
</table>

20 hospitals, 779 cases
Administrative Measures

- C-section rates
  - Needs risk adjustment
- Laparoscopic Cholecystectomy rates
  - Little variation
- Medication Error rates
  - Needs standard definition and collection process
- Adverse Drug Reaction rates
  - Needs standard definition and collection process
- Medicaid Denial rates
  - Validity issues
Cross-cutting Measures

• Advance Directive Screening
  • Ready

• Medication Teaching Measure
  • Documentation issues

• Medication Safety Checklist
  • Ready as improvement tool but not measure

• Transfer Communication Checklist
  • Ready
Hospital Readiness

• Team Approach
  • Administrators, quality leads, abstractors
    – Involvement in participation decision
    – On-going champions

• Early Assessment of Capacity
  • Process to identify cases through computerized coding system
  • Access to medical records
  • Consistent documentation in charts
  • Interpretation of results
  • Plan to use the data
Support Process Readiness

• Training
  • Tailored to participant capacity
  • Capacity building
  • Networking opportunity

• Inter-rater Reliability
  • Essential for consistent comparable measurement
Relevant quality measures can be systematically collected from small rural hospitals who receive appropriate training and support from QIOs.
Next Steps

• Summarize Expert Panel Meeting (April 2005)
  • Review field test findings
  • Recommend new measure development for rural hospitals

• Refine training and support models

• Coordinate with other measurement efforts (e.g. QIO 8th Scope of Work)