Healthcare Quality Improvement: A Primer

Nancy Davis, PhD

Drivers of Healthcare Quality Improvement

- IOM reports: 98,000 deaths due to medical errors
- Rising healthcare costs: one-third of healthcare dollars spent on waste and annual cost of poor quality per covered employee is $2,000
- Rand report: only 55% of recommended care delivered

IOM “Six Aims for Improvement” in Healthcare

- **Safe**: Avoid injuries to patients from the care that is intended to help them
- **Effective**: Match care to science; avoid overuse of ineffective care and underuse of effective care
- **Patient-Centered**: Honor the individual and respect choice
- **Timely**: Reduce waiting for both patients and those who give care
- **Efficient**: Reduce waste
- **Equitable**: Close racial and ethnic gaps in health status

Crossing the Quality Chasm: A New Health System for the 21st Century

A Definition of Quality

- Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with the current professional knowledge.

Lohr KN. IOM Committee to Design a Strategy for Quality Review and Assurance in Medicare. 1990.
Healthcare Quality Improvement

- W. Edwards Deming
  - Developed theory for improvement which revolutionized Japanese industry following WWII
  - Building on Walter Shewhart’s work to develop ‘Plan, Do, Study, Act’ cycle: for learning and improvement

Deming’s Plan-Do-Study-Act (PDSA)

Diagram showing the PDSA cycle with 'Plan', 'Do', 'Study', and 'Act' phases connected in a cycle.
Systems and Processes

- Baldrige Criteria and Related Systems
  - Malcolm Baldrige National Quality Award - 1987

Baldrige Award Criteria Categories
1. Leadership
2. Strategic planning
3. Focus on patients, other customers and markets
4. Measurement, analysis, and knowledge management
5. Staff focus
6. Process management
7. Organizational performance results


Systems and Processes

- IHI Breakthrough Series Model
  - Institute for Healthcare Quality Improvement (IHI) model
    - Collaborative approach
      - Short term
      - Team-based
      - Focus area
  - Guidance of national experts
  - Study, test implement

Systems and Processes

**Lean Thinking**
- Toyota Production Systems
  - Identify which features create value
  - Identify the sequence of activities--the value stream
  - Make the activities flow
  - Let the consumer pull the ‘product’ through the process
  - Perfect the process

**Six Sigma**
- Hewlett Packard, Motorola, GE
- Key: reduce variation
- Five step approach: DMAIC
  - Define
  - Measure
  - Analyze
  - Improve
  - Control
Quality Measurement

- Measuring overall compliance with a clinical guideline or standard
  - Adherence to clinical guidelines
  - Process Measures: is the clinician/practice in compliance?
  - Outcomes Measures: are patient outcomes in compliance?

Performance Measures

- Process measures - clinician’s control
  - Ordering CD4 cell count test every four months to monitor HIV-positive patients
    - Assume process will have eventual effect on outcomes
- Outcomes measures - actual patient outcomes that depend on action outside the clinician’s control
  - Maintaining CD4 cell count in normal limits
Where do Performance Measures Come From?

- CMS
- Specialty societies
- Health plans
- AMA Physician Consortium for Performance Improvement
- NCQA
- AQA Alliance


Compliance Calculation

Performance Calculation

% of DM pts >40 y/o Rx ASA

Number of patients meeting measure criteria
(number of patients prescribed ASA)

Number of patients meeting study criteria
(minus number patients with valid exclusions)
(number of patients > 40 y/o with diabetes minus those who have adverse reactions to ASA)
## Sources of Healthcare Quality Data

- Medical Records Review *(retrospective—after care)*
- Medical Records Review *(prospective—during care)*
- Administrative Databases
- Patient Surveys
- Health Plan Databases
- Patient Registries

## Data for Performance Measurement

- **Practice profile--Denominator**
  - Patient Registries
  - Medical Records
- **Process data--Numerator**
  - Administrative data--lab, Rx
  - Health plan data--claims
  - Medical records
- **Outcomes data--Numerator**
  - Medical Records
  - Patient surveys
Performance Reporting

- Scorecards
- Dashboards

From Performance Reporting to Performance Improvement

- Interventions for improvement
  - Education
  - Systems-based process improvements
  - Decision Support
  - Disease management
**Practice-Based Quality Improvement**

<table>
<thead>
<tr>
<th>PDSA Cycle</th>
<th>Practice-based Actions</th>
<th>Six Sigma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>Identify area to improve Collect data to assess current state</td>
<td>Define Measure Analyze</td>
</tr>
<tr>
<td>Do</td>
<td>Implement improvement interventions</td>
<td>Improve</td>
</tr>
<tr>
<td>Study</td>
<td>Reassess data for change/improvement</td>
<td>Measure Analyze</td>
</tr>
<tr>
<td>Act</td>
<td>Change practice based on improvement</td>
<td>Control</td>
</tr>
</tbody>
</table>

**Using the Chronic Care Model**

Getting Started

• Assess Current Condition - Based on measures
  – First-hand data
  – Root cause analysis: five whys
  – Problem
    • Why? First immediate cause
    • Why? Cause for the first immediate cause
    • Etc.

• Decide on interventions for improvement
• Develop an action plan
• Determine goals: measures of success
Getting Started

- Re-measure / re-assess
- Follow up / reflect
- Spread change

Resources: Performance Measures

Resources: Education and Materials


Resources: Education and Materials

Please click ‘Continue’ to proceed to the next section.