Patient Safety & Quality
Jan E. Patterson, MD MS

Objectives

- Describe the Quality & Patient Safety gap
- Identify quality improvement methods
- Identify some Joint Commission National Patient Safety goals
- Define the role of teamwork and communication in patient safety

Current Health Care

- Is the best the world has ever seen
  - From 1900 to 2000, life expectancy increased from 49 to 77 years
  - Since 1960, mortality from heart disease has decreased by 56%
  - Since 1970, mortality from stroke has decreased by 70%

CDC, Natl Ctr Health Statistics

Institute of Medicine

1999, To Err is Human
An estimated 44,000 to 98,000 people die each year from medical errors in healthcare
More than from breast cancer or AIDS or motor vehicle accidents

2001, Crossing the Quality Chasm
Between the healthcare we have and the healthcare we could have, lies not just a gap, but a chasm

2003, Follow-on Report, Patient Safety
Errors of Commission vs. Errors of Omission

Patient Safety & Quality as Professional Responsibility

Ethical principles
- Nonmaleficence
  - First do no harm
  - Obligation of physicians to patients to prevent harm
- Beneficence
  - Obligation to provide the best care possible
What is quality?

Definitions - quality

- A degree or grade of excellence
- **Medical quality** – the degree to which health care systems... increase the likelihood for positive health outcomes

IOM’s definition:

- High quality medical care is characterized by the following attributes:
  - Safe (no injury)
  - Timely (no waiting)
  - Efficient (no waste)
  - Effective (evidence-based)
  - Equitable (same quality for all)
  - Patient-centered (best for patient)

Quality gap

- The quality gap... is the difference between what is scientifically sound and possible and the actual practice and delivery of health services.

Ken Kizer

Quality improvement:

- An interdisciplinary process designed to **raise the standards of care delivery** in order to maintain the outcomes of individuals and populations

- Focus on improving processes of care

American College of Medical Quality

Ken Kizer
Why do we care about quality?

#1: Errors
- Diagnostic errors
- Treatment errors
- Failure of preventative care
- 42% of the general public reports experiencing a preventable error in their own or a family member's care*
  - Each error represents potential mortality or morbidity

*Blendon, NEJM 2002

#2: Variation in Care
- Billions of dollars in unnecessary costs
- Adverse Drug Events (ADE)
  - $8750 / hospitalization
  - $3-4 billion in costs / year
- ~50% of expenditures in hospitals is related to waste**

**James et al. 2006

#3: Cost!!
- Looming financial crisis:
  - Premiums rising for employers and patients
  - Aging population with more chronic disease

Medicare Spending & Quality

International Comparisons

<table>
<thead>
<tr>
<th>Country</th>
<th>Infant Mortality</th>
<th>Life Expectancy</th>
<th>Per Capita Expenditures</th>
<th>% GDP Spent on Healthcare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>2.8</td>
<td>80.6</td>
<td>$3,202</td>
<td>9.2%</td>
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<tr>
<td>Japan</td>
<td>3.2</td>
<td>81.4</td>
<td>$2,474</td>
<td>8.2%</td>
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<tr>
<td>Germany</td>
<td>4.1</td>
<td>79.0</td>
<td>$3,371</td>
<td>10.6%</td>
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<tr>
<td>Canada</td>
<td>4.6</td>
<td>80.3</td>
<td>$3,678</td>
<td>10.0%</td>
</tr>
<tr>
<td>UK</td>
<td>5.0</td>
<td>78.7</td>
<td>$2,760</td>
<td>8.4%</td>
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<tr>
<td>Italy</td>
<td>5.7</td>
<td>78.9</td>
<td>$2,514</td>
<td>9.0%</td>
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<tr>
<td>Greece</td>
<td>5.3</td>
<td>78.4</td>
<td>$2,453</td>
<td>9.1%</td>
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<tr>
<td>United States</td>
<td>6.4</td>
<td>78</td>
<td>$6,714</td>
<td>15.1%</td>
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</tbody>
</table>

Outcomes data – U.S. Census Bureau, International database 2007
Financial data – Org for Economic Cooperation & Development 2006
The Quality “Players” and what they do...

Institute of Medicine
- Established in 1970 under the National Academies of Science
- Purpose is to provide independent evidence-based advice

Agency for Healthcare Research & Quality (AHRQ)
- Mission is to improve the quality, safety, efficiency and effectiveness of health care...
- Fund research on quality, disseminate results, provide resources
- $372 million budget FY2009

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Joint Commission
- Accreditation programs
  - Hospitals
  - Labs, ambulatory surgery, outpatient practices
- Required for hospital accreditation, and payment
- National Patient Safety Goals
National Committee for Quality Assurance (NCQA)

- Accreditation, Certification focusing on plans
- HEDIS – healthcare effectiveness data and information set
  - Breast cancer screening
  - Cervical cancer screening
  - Chlamydia screening
- > 90% plans of use HEDIS data as the basis of their reporting

http://www.ncqa.org/

National Quality Forum (NQF)

- Founded in 1996 by recommendation of a Presidential Advisory commission
- Charged with designing a strategy / framework for a national reporting system
- Goal is to develop collaborative consensus standards that have legal status
- Developed “Never Events”

Never Events

- Wrong patient / part / procedure
- Retained objects
- Death / disability related to drugs, device, air embolus
- Patient suicide
- Infant discharge to wrong person / abduction
- Maternal death / disability in low-risk patient
- Failure to diagnosis newborn hyperbilirubinemia
- Severe pressure ulcer
- Death / disability due to falls
- Assault on patient

Pay for Performance

- Financial incentives would be more likely to impact care
  - Current fee for service system pays for episodes of care, not quality of care
- The goal is to provide a reward for higher quality

So what can YOU do to improve the quality of care you deliver?

Step 1: Decide what to improve

- Common problems
- High-impact problems
  - Patient outcomes
  - Cost
- High variability problems
**Step 1: Decide what to improve**

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**Step 2: Get the TEAM together**

- Representation / knowledge of all the process
- Composition:
  - “Leaders” who can facilitate change
  - “Process owners”
- Ground rules: inclusive, open, consensus-driven
- Define Aim Statement – “SMART”

**PI Team Stages**

Stages of team development

- Forming – Create awareness
- Storming – Resolve conflict
- Norming – Cooperation
- Performing – Produce meaningful work
- Rewarding –
  - See the improvement in health outcomes that are possible

**Developing an Aim Statement**

- Purpose of the Aim Statement
  - Define the scope of the project
  - Become the cornerstone for all project efforts
  - Rallies the team around clear goals
  - Keeps the team’s action focused
  - Transforms “We’ve got to do something about this!” to something actionable.

**When Developing an Aim Statement**

- Use the SMART method to develop your aim statement:
  - Specific
  - Measureable
  - Actionable
  - Realistic/Relevant
  - Timely

Beware, it may take more than 1 meeting to develop an aim statement and may be revised mid-stream.
Step 3: Define the process

- Deming’s 7 Why’s
  - Goal is to map out and display the process

- Tools:
  - Conceptual flow diagrams
  - Cause and effect / Fishbone / Ishikawa diagrams
  - Process mapping

Step 4: Decide what to change

- Find the leverage points in the process
  - Use “tally sheet” to help you outline the major contributors to processes
  - Pareto charts – graphically display weights or frequencies of occurrences

- Goal is typically to reduce variation / increase predictability around these points
  - Evidence-based or consensus guidelines may be a helpful approach

Step 5: Measure the impact

- What has been the effect on your target outcome?
  - Run charts
  - Statistical process control charts

- What has been the effect on other parts of the system?

Step 6: Repeat and monitor!

- Refine what has worked and what hasn’t worked

- Need to follow processes over time, as they will be impacted by other organizational changes
Aim Statement

To reduce transfusion time from the "MD order" to the "Start Time" on 4 South from 6 hours to 2 hours or less by August 2009.
Challenges in quality improvement:

- Will there be more coordinated national direction?
  - HHS releases National Quality Strategy
- Change management is HARD!
- Things that work in one place often don’t work in others
- Still need to find the right combination of tools / policy directives to support QI work

Patient Safety

**Definition**

- The prevention of harm to patients, where harm can occur through commission and omission
- Safety and quality cannot be separated
- Requires a commitment by all stakeholders to a culture of safety and improved information systems

The Joint

- The Joint Commission
  - Accreditation of healthcare organizations
  - Accreditation standards
  - National Patient Safety Goals
National Patient Safety Goal #2
(Now a Standard)

- Improve the effectiveness of communication between caregivers
  - For verbal or telephone orders, or for phone reporting of critical test results, verify the complete order or test result “read-back.”
  - Standardize a list of abbreviations not to be used throughout the organization
  - Measure, assess, improve the timeliness or reporting and receipt of clinical tests
  - Implement a standardized approach to “hand-off” communications

Unapproved Abbreviations

See Unapproved list at: Institute for Safe Medication Practices (ISMP)

National Patient Safety Goal #3

- Improve the safety of using medications
  - Identify and annually review a list of look-alike/sound alike drugs used in the organization, and take action to prevent errors (Now a Standard)
  - Label all medications, medication containers (syringes, medicine cups) on and off the sterile field in preop and other procedural settings
  - Reduce the likelihood of patient harm associated with the use of anticoagulation therapy

Look Alike

Case #1: The pharmacy placed an Isuprel® amp, similar in appearance to the Lopressor® amp, on the cardiac support floor stock. Isuprel was removed from the stock and administered to a patient. Both products have the same blue stripe on the amp and look very similar.

Tall Man Letters

| ISMP Newsletter 7-10-10 |
National Patient Safety Goal #7

- Comply with hand hygiene guidelines
- Implement practices to prevent healthcare-associated infections due to multiply drug-resistant organisms in acute care hospitals
- Implement best practices for preventing catheter-related bloodstream infections
- Implement best practices for preventing surgical site infections

Intravascular Catheter-Related Infections (BSIs)

- Central venous catheter (CVC) days
  - Total number of days of exposure to CVCs
  - Avg rate: 3.2 per 1000 catheter days
  - Range 1.5 – 6.8 per 1000 catheter days
  - ~ 80,000 CVC-related BSIs each year
  - Mortality 10-35%
  - Cost per BSI: $25,000
  - 70% of nosocomial BSI related to CVCs

Prevention: Team Approach

- Pronovost et al. NEJM 2006;355:2725
  103 ICUs; 1,981 ICU months in Michigan
  375,757 catheter days
  Funded by AHRQ
- 5 evidence-based interventions
  - Hand hygiene
  - Chlorhexidine skin prep
  - Maximal barrier precautions
  - Avoid femoral site
  - Removal of line ASAP
- 66% decrease in catheter BSIs

Team-Based Approach

<table>
<thead>
<tr>
<th>Study Period</th>
<th>No. of ICUs</th>
<th>No. of Bloodstream Infections per 1000 Catheter Days</th>
<th>Overall</th>
<th>Teaching Hospital</th>
<th>Nonteaching Hospital</th>
<th>&gt;200 Beds</th>
<th>≤200 Beds</th>
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<tr>
<td>Baseline</td>
<td>55</td>
<td>2.7 (0.4-4.8)</td>
<td>2.7 (0-4.7)</td>
<td>0 (0-2.5)</td>
<td>2.1 (0-3)</td>
<td>2.7 (0-4.8)</td>
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<tr>
<td>During imptm</td>
<td>96</td>
<td>1.8 (0-4.6)</td>
<td>1.7 (0-4.7)</td>
<td>0 (0-2.5)</td>
<td>1.0 (0-3)</td>
<td>1.7 (0-4.6)</td>
<td></td>
</tr>
<tr>
<td>After imptm</td>
<td>96</td>
<td>0 (0-1.0)</td>
<td>0 (0-1.0)</td>
<td>0 (0-1.0)</td>
<td>0 (0-2.7)</td>
<td>1.1 (0-3.3)</td>
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<tr>
<td>1–4 mo</td>
<td>96</td>
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<td>0 (0-2.7)</td>
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<td>0 (0-3)</td>
<td>0 (0-2.7)</td>
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<tr>
<td>4–8 mo</td>
<td>96</td>
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<td>0 (0-2.7)</td>
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<td>0 (0-3)</td>
<td>0 (0-2.7)</td>
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<td>8–12 mo</td>
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<td>12–16 mo</td>
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<td>0 (0-1)</td>
<td>0 (0-1.0)</td>
<td></td>
</tr>
</tbody>
</table>

Patient Safety Goal #13 (Now a Standard)

- Encourage the active involvement of patients and their families in the patient’s care as a patient safety strategy
  - Define the ways in which the patient and the patient’s family can report concerns about safety and encourage them to do so

Team-Based Approach

- Cost of low health literacy
  - ~$100 to $200 billion
### Organizational Culture Change for Patient Safety

- Hospital administration support and buy-in
- Multidisciplinary teams
  - Physician champions
- Nurse and other staff empowerment
  - Caregivers feel comfortable speaking up about perceived problems with care
- Unit ownership and accountability
  - Process measures/bundles
- Surveillance and reporting
  - Outcomes

### Center for Patient Safety & Health Policy

- Integrate quality and safety concepts into our everyday work to increase quality and safety of clinical care
  - Implement quality and safety through project-based learning at levels of UTHSCSA
- Integrate quality improvement efforts into health services/outcomes research and health policy
- Train the next generation of health professionals to incorporate quality improvement practices in their work
- Initiatives
  - Clinical Safety & Effectiveness course – faculty & staff
  - Interprofessional course in quality & safety -UME
  - GME training