

# **Bringing Data, Information & Evidence Together to Transform Care**

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Ronda G. Hughes, PhD, MHS, RN, FAAN

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## **Objectives**

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- To describe the critical role of nursing in improving the quality of care.**
- Identify resources for evidence-based nursing interventions to improve the quality of care received by patients.**
- Identify barriers and key facilitators to evidence-based nursing practice.**

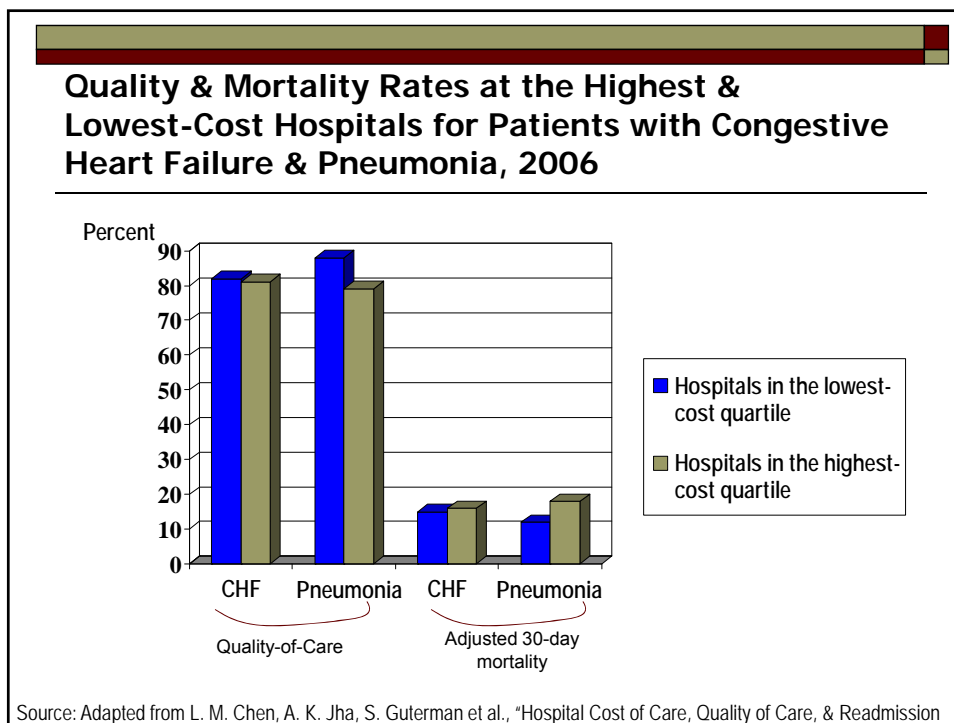
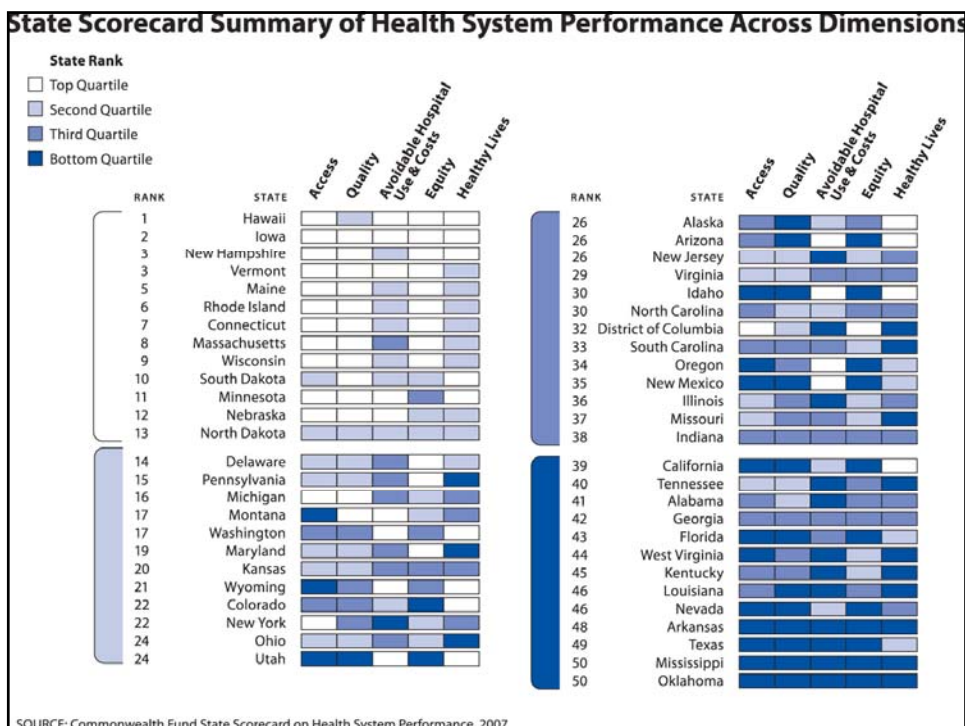
## Improving Outcomes

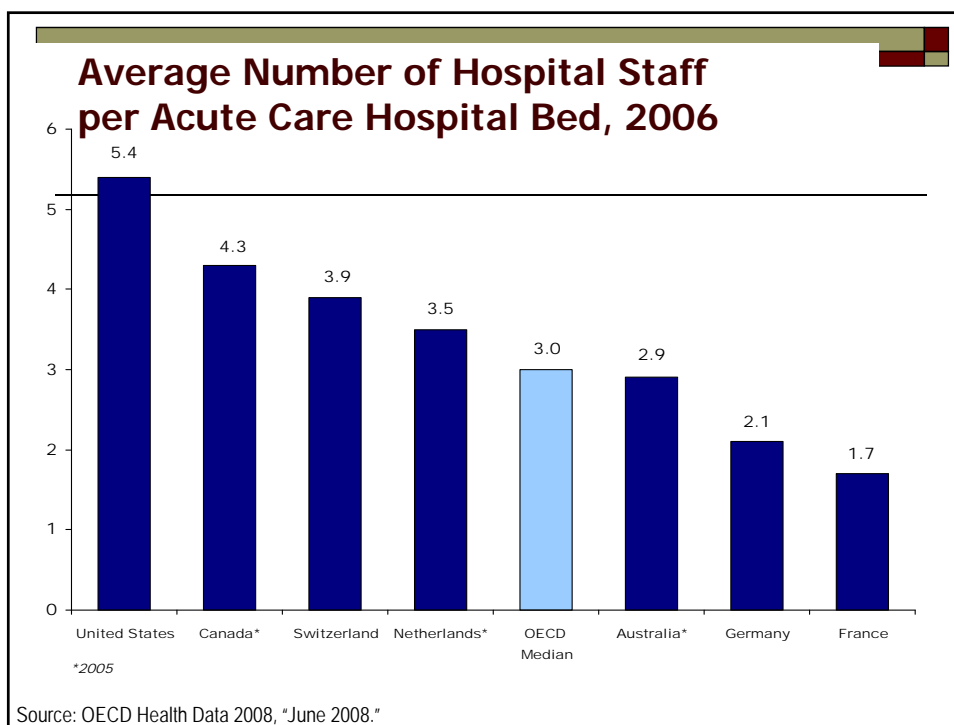
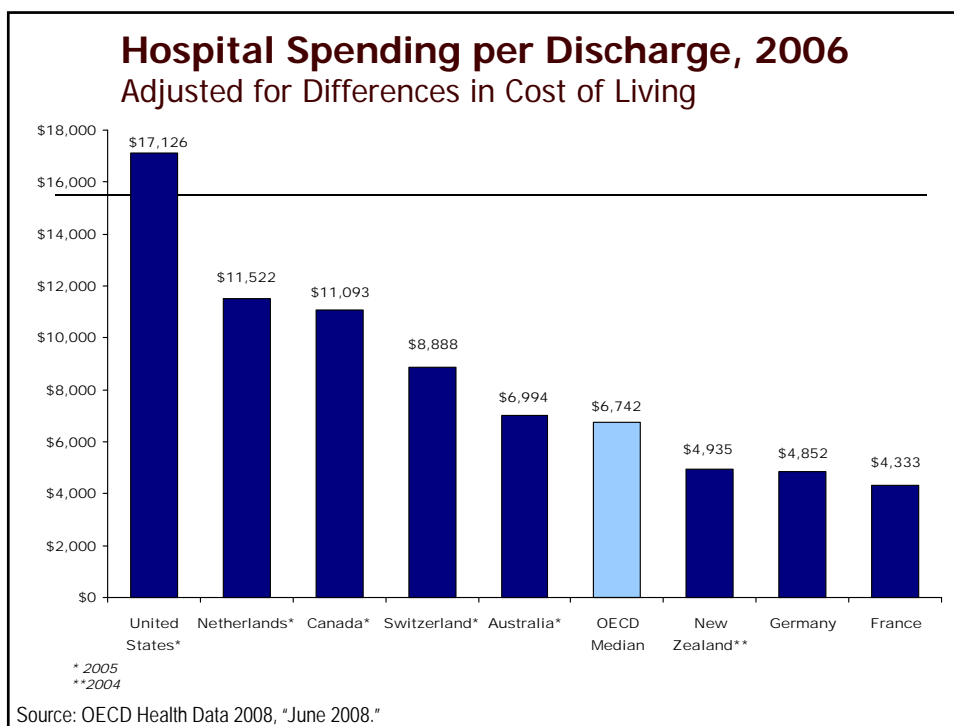


- **Quality Improvement & Performance Measurement**
- Using Data & Information, Benchmarks & Evidence
- Transforming Health Care

## Slow Progress

- **AHRQ National Healthcare Quality Report 2009:**
  - Measures of patient safety and quality
    - Average improvement < 2% per year
- **Spending billions:**
  - In 2008, health care 25% of federal spending
    - Almost 1/3 may be unnecessary (IOM)
- **Between 2002 and 2008:**
  - Hospitals improved on the majority of quality measures (5% to 59%)





## Imperative for Change

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- Constraining health care costs.
- Reducing geographic variation in the use of health care services.
- Improving health care quality.
- Consumer-directed, patient-centered health care.
- Making health coverage decisions.

SOURCE: IOM, *Knowing What Works in Health Care: a Roadmap for the Nation*, 2008.

## Unplanned Readmissions

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- Cost more than \$17 billion in 2004
  - Medicare payment to hospitals - \$102.6 billion
- Readmissions
  - 19.6% (1 in 5) within 30 days
  - 34% with 90 days
  - 56.1% within a year
  - ½ without outpatient follow up visit
- 70% have medical problem (e.g., UTI, pneumonia)

SOURCE: NEJM, April 2, 2009.

## Preventable Admissions

- □ Hospital inpatient care is the most expensive type of health care
- □ > 4 million Preventable Admissions
- □ Cost nearly \$31 Billion
- □ Heart Failure and Pneumonia
- □ Half of the \$ problem
- □ COPD – 16%
- □ Diabetes – 13%
- □ Elderly – 2/3 of these hospitalizations
- - 1 in 5 Medicare admissions

## What's Missing in Health Care

- **Delivery System Design**
- **Real-time information**
  - Clinical effectiveness
  - Delivery to patients
  - Impact on patients
- **Evidence-based management**
  - Shared attention to data
  - Shared strategies for improvement
- **Policy adjustments for improvement**



## Reducing Avoidable Readmissions

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- Readiness for discharge
  - Who decides?
  - What is done prior to discharge (planning)?
- Unexpected complications
  - Addressing only medical diagnosis
- Medication reconciliation
- Patient education
  - When is the right time
- Linkage with community providers?

## Reducing Readmissions

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- Financial penalties on hospitals for
  - “Excess” readmissions vs. “Expected”
  - HF, AMI, Pneumonia
  - FY2013
  - \$7.1 billion in savings over 10 years
  - Not supported by SHM
- Community Based Care Transitions Program
  - Starts Jan. 1, 2011

## Improving Outcomes



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## Failure to Rescue (FTR)

- HCUP-SID, AHA, CMS
- Major surgical patients (DRG vs. Procedure code)
- Surgery within 2 days of admission (-2 to 2)
- Risk Pool:
  - Acute Renal Failure
  - Deep Vein Thrombosis
  - GI Bleed
  - Pneumonia
  - Sepsis
  - Sudden Cardiac Arrest

- 1<sup>st</sup> study using POA data &
- Largest study of nurse staffing
- Multi-state validation

## FTR – What We Know

- FTR mortality is associated with nurse staffing:
  - Proportion of RN hours ( $r^2 = 0.72$  (0.56 to 0.98))
  - # of RN HPPD ( $r^2 = 1.02$  (0.98 to 1.03))
- Other potential factors:
  - Co-morbidities
  - Team processes
  - LOS
  - Type of surgical procedure
  - Surgical volume
- Nurse/unit-level vs. Hospital-level measure?
- Significant Gaps!

## Effect of Nurse Staffing

### - Meta-analysis (28 studies)

#### ↑ RN staffing associated with ↓ odds of

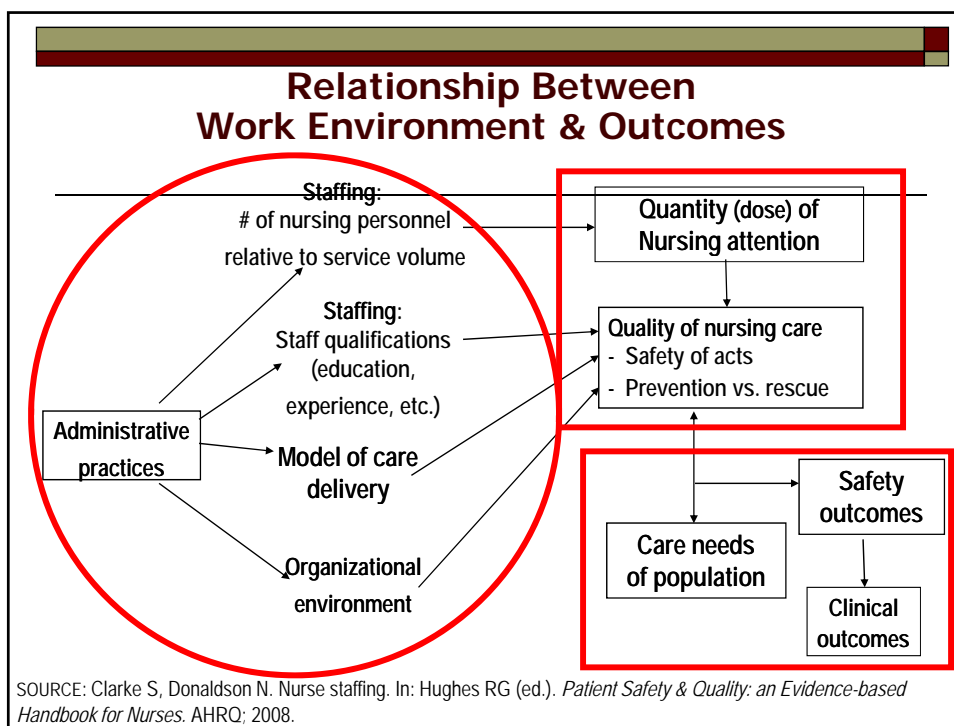
Mortality (ICU)	(OR 0.91, 95% CI 0.86 to 0.96)
Mortality (surgical)	(OR 0.84, 95% CI 0.80 to 0.89)
Mortality (medical)	(OR 0.94, 95% CI 0.94 to 0.95)

#### ↑ 1 RN per patient day ↓ odds of

Hospital acquired pneumonia (ICU)	(OR 0.70, 95% CI 0.56 to 0.88)
Unplanned extubation (ICU)	(OR 0.49, 95% CI 0.36 to 0.67)
Respiratory failure (ICU)	(OR 0.60, 95% CI 0.27 to 0.59)
Cardiac risk (ICU)	(OR 0.72, 95% CI 0.62 to 0.84)
Failure to rescue (surgical)	(OR 0.84, 95% CI 0.79 to 0.90)

LOS was shorter in ICUs and surgical patients with ↑RN staffing

Source: Kane R, et al (2007). Medical Care.



### Practice-Based Evidence

- Explaining outcomes
- Availability of research-based evidence
- Filling in the gaps

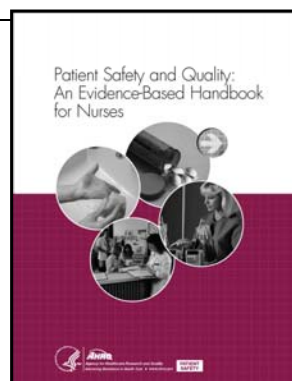
## Information Gaps

- “Need to know” vs. “Would be interesting to know”.
- NIH & Private Sector –
  - Do not have “a primary mission” the “goal of ensuring that studies are performed to address clinical questions important to decision-makers” (Tunis et al., 2003)

SOURCE: Tunis SR, Stryer DB, Clancy CM. Practical clinical trials: increasing the value of clinical research for decision making in clinical and health policy. JAMA 2003; 290:1624-32 (pgs. 1627-28).

## Applied Research & Policy

- **Collaboration - 90 experts**
- **51 Peer-reviewed chapters**
- **Intended for all nurses, especially those in academic settings & hospitals**
- **Provides practice implications & sets forth a research agenda**
- **Funded by AHRQ & RWJF**
- **Over 1 million users**
- **Available now on the AHRQ website:  
[www.ahrq.gov/qual/nurseshdbk](http://www.ahrq.gov/qual/nurseshdbk)**



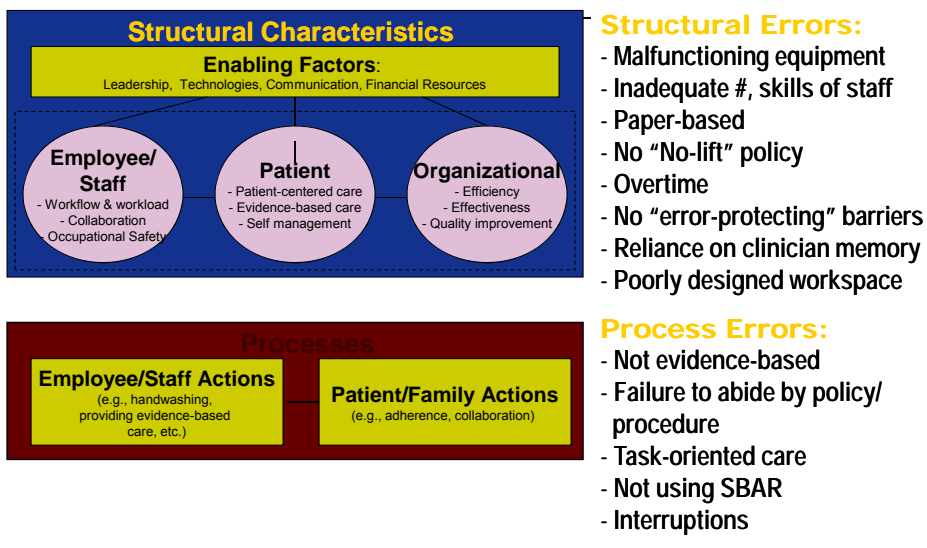
3 Volume Set = 1 CD

## Framework for Success or Failure in Handoff

- Organizational culture
- Communication
- Variance in interpersonal skills, experience, & settings
- Structure of how handoffs conducted
- Access to information
- Environmental design/environmental factors
- Knowledge on how to conduct handoffs

SOURCE: Friesen, M, Byers, S, & White, S. Nurse staffing. In: Hughes RG (ed.). *Patient Safety & Quality: an Evidence-based Handbook for Nurses*. AHRQ; 2008.

## Types of Errors ("Root Causes")



## Using Data & Information

### Benchmarks:

1. Health Grades
2. Nationally representative databases
3. Large, multi-site studies
4. Annual mortality rate
5. Average length of stay by DRG
6. # of beds
7. # of ED visits on weekends
8. # admissions for pneumonia

### Organizational:

1. RN skill-mix (education/experience)
2. Patient case-mix
3. Resources
4. Type/volume of surgeries
5. Shift work timeframes
6. Intraprofessionals
7. Procedure protocols
8. Root causes
9. #/type of medication administration errors

## Triggers

- A surveillance rule or algorithm applied to patients' clinical or administrative data to identify individuals at high risk of iatrogenic adverse events
- Ex.: Risk for Pressure Ulcer =  
Over age 65 + unable to ambulate on own +  
LOS > 2 days + incontinent

## Ex: Readmission

Strategy: F/U with Primary Care Clinician, post Hospitalization

### Critical Information

- Patient history/profile during hospitalization
  - Medications
  - Morbidities/diagnoses
  - Physical signs/symptoms
  - Labs
  - Nursing interventions
  - Discharge plan(s)

### Source of Information

- EHR/Paper record/Patient

## Impact of Practice-Based Interventions

- Improve health care processes and outcomes:
  - Improved prescribing of psychotropic drugs in nursing homes.
- Heterogeneity of interventions & settings.
- Use natural variation
- What works, for whom, when, and at what cost.
- Research vs. Quality Improvement.
- Interventions:
  - Printed materials may change process, but not outcomes.
  - “Healthy Steps” – program effective in preventing negative child & parent outcomes, & enhancing positive outcomes.
  - Minimizing wound-related pain with dressing change.

## Measures & Standards

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- Medical Diagnosis Codes
- Medical Procedure Codes
- What is missing?
  - Nursing Process Codes
    - Nursing assessment
    - Nursing interventions
  - Nursing Role/scope of practice
    - Direct & supportive care
  - Patient Education
    - Who does it & does it make any difference?

## The Bottom Line

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- Identify problems
- Develop strategy
- Pilot & phase in
- Increased resource need
- Cause & effect

## Improving Outcomes



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## Strategies for System Improvement

- Institute & foster a culture of safety.
- Institute continual quality improvement processes.
- Decision makers must insist on high-quality evidence in making decisions.
- Systematically identify & prioritize knowledge gaps.
- Examine current processes.
- Gather and use all available data.

## **Hardwire the 'New' Culture to Operations**

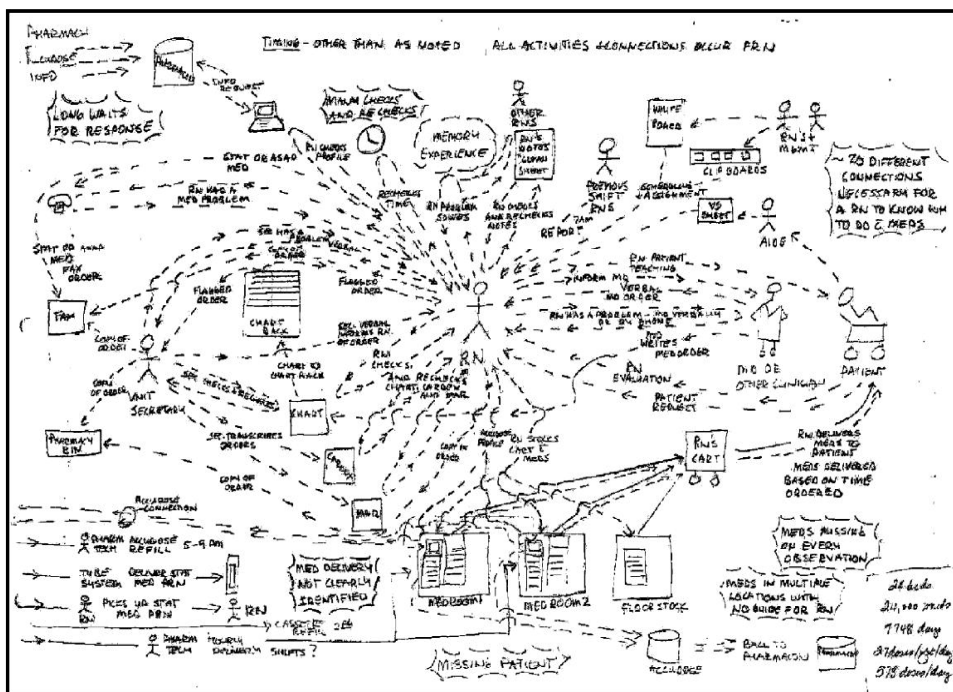
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- Key: Embed values-based culture into all aspects of operations
  - Leadership Strategy
  - Continuous Quality Improvement (CQI) Process
  - Communications
  - Human Resources
  - Tools
  - Facilities

## **Culture Embedded in: Continuous Quality Improvement (CQI) Process**

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- Key: Engage everyone in performance improvement process
  - Customer Focus
  - Staff Involvement
  - Measurement
  - Team Approach
  - Celebration and Recognition



Source: Thompson DN, Wolf GA, Spear SJ (2003) JONA.

## What Organizations Need To Do

- **Focus on Safety & Systems Issues**
  - Safety is a subset of quality
  - Infrastructure needs to support high quality
- **System of Performance Measurement & Quality Improvement**
  - Evaluate effectiveness
  - Impact of strategies to address "errors"
  - Interdisciplinary problem solving & prevention
- **Evaluate performance using 6 IOM/NQF aims:**
  1. Safe
  2. Beneficial
  3. Patient-centered
  4. Timely
  5. Efficient
  6. Equitable

## What Organizations Need To Do (con't)

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- **Communication**
  - Ensure information flow (e.g., HIT, SBAR)
  - Handoffs (e.g., documentation, site-to-site)
- **Commit to & Support a Learning Organization**
  - Culture of safety (e.g., transparency, near-misses)
  - Empowerment & teamwork
  - Problem solving & innovation
- **Ensure Adequate & the Right Resources**
  - Staffing
  - Equipment

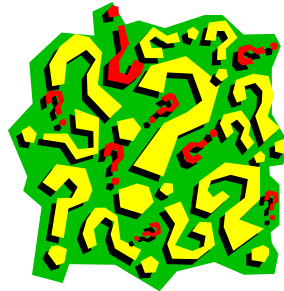
## Transforming Care Delivery

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- Precarious economy.
- Raising & changing performance expectations of health care delivery.
- National Priorities:
  - Eliminate *harm*
  - Eradicate *disparities* in health care access & outcomes
  - Reduce the *burden* of disease
  - Remove *waste* to ensure resources are focused appropriately

## Questions? Thoughts?

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Ronda G. Hughes, PhD, MHS, RN, FAAN

E-Mail: [Helpmeronda@yahoo.com](mailto:Helpmeronda@yahoo.com)

(443) 629-7372