



# Measuring the Effect of Guidelines on Patient Outcomes

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U.S. Agency for Healthcare Research and Quality

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# In Memoriam

**John M. Eisenberg, M.D.  
Director, Agency for Healthcare  
Research and Quality**



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It may take as long as 17 years for original research to be put into routine clinical practice

Balas EA, Boren SA. Managing Clinical Knowledge for Health Care Improvement. Yearbook of Medical Informatics. Schattauer, 2000: 65-70.



# Quality Problems

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**Overuse**

**Misuse**

**Underuse**

# CPGs $\pm$ Change Practice

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## Overuse

- 5 million episodes of pediatric middle ear infection annually; costing \$3 billion
- 80% with uncomplicated infection recover within 1-7 days without antibiotics
- 93% treated with antibiotics recover during the first week

Source: S. Michael Marcy, M.D. et al, "Management of Acute Otitis Media Summary, Evidence Report/Technology Summary 15, AHRQ, August 9, 2000



## Misuse

- 280,000 children < age three undergo tympanostomy annually
- 43 month study found tympanostomy has no measurable effect on improving speech, language, cognitive, or psychosocial development at age three
- 588 children with middle ear fluid randomly assigned to (group A) early tympanostomy surgery or (group B) surgery after 6 months or no surgery

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## Underuse

“Simple averages from a number of studies indicate that 50 percent of people received recommended preventive care; 70 percent, recommended acute care; 30 percent, contraindicated acute care; 60 percent, recommended chronic care; and 20 percent, contraindicated chronic care”

Source: M.A. Schuster et al., *Milbank Q*, 1998; 76:517-563

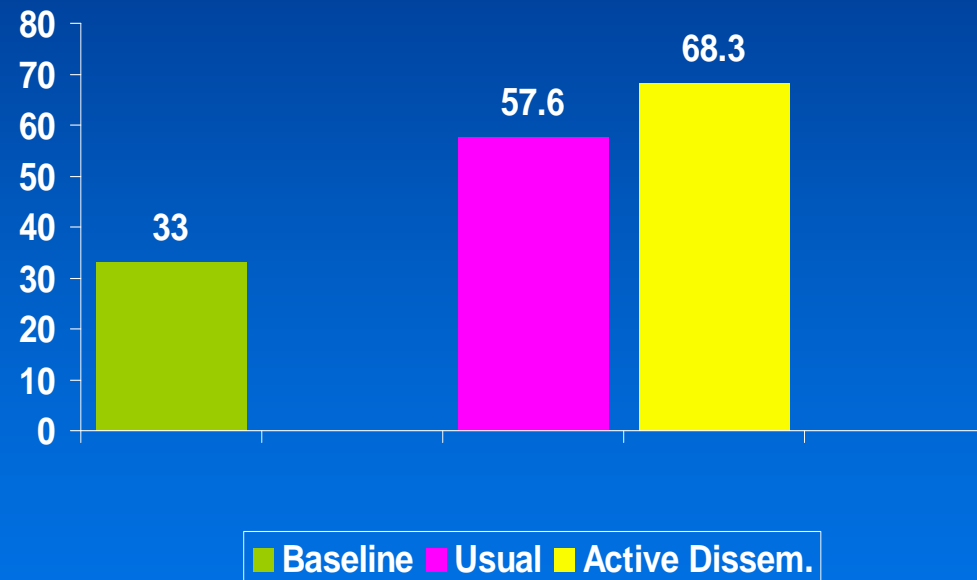


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- 52% of elderly adults received a flu shot in 1993
  - 33% of hospitalized elderly discharged on an anti-depressant were on a dose below recommended level
  - 49% of diabetic adults had dilated eye exam in past year
  - 43% of patients who should have received coronary angiography received it within 3 months



# Effect of Active Dissemination on Use of Ante-natal Corticosteroids

Percent eligible patients receiving corticosteroids



- Disseminated 1994 NIH Consensus Conference recommendations
- Usual Dissemination: publication, lectures, word-of-mouth
- Active Dissemination: opinion leaders, presentations, chart reminders, organized discussions, monitoring and feedback
- Active strategy led to 33% greater change

Source: LC Leviton et al., *JAMA* 281:46, 1999



# Donabedian

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**Structure**

**Process**

**Outcomes**

# Measuring Quality

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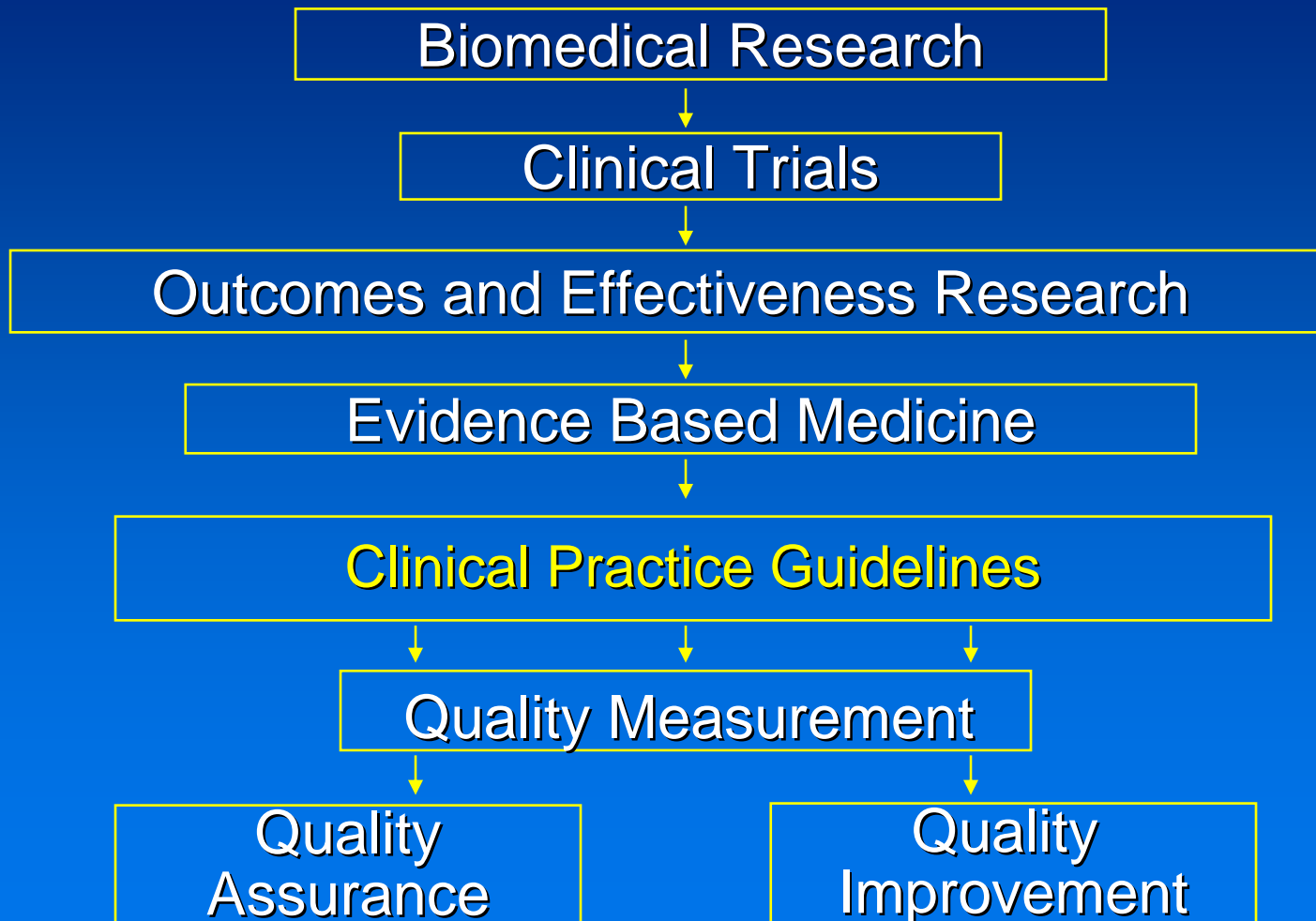
- **Structure** - Are the right elements in place to be able to provide quality?
- **Process** - Are the right things done to the right people at the right time?
- **Outcome** - Is the result as good as it should have been given current knowledge?

# Quality Measures

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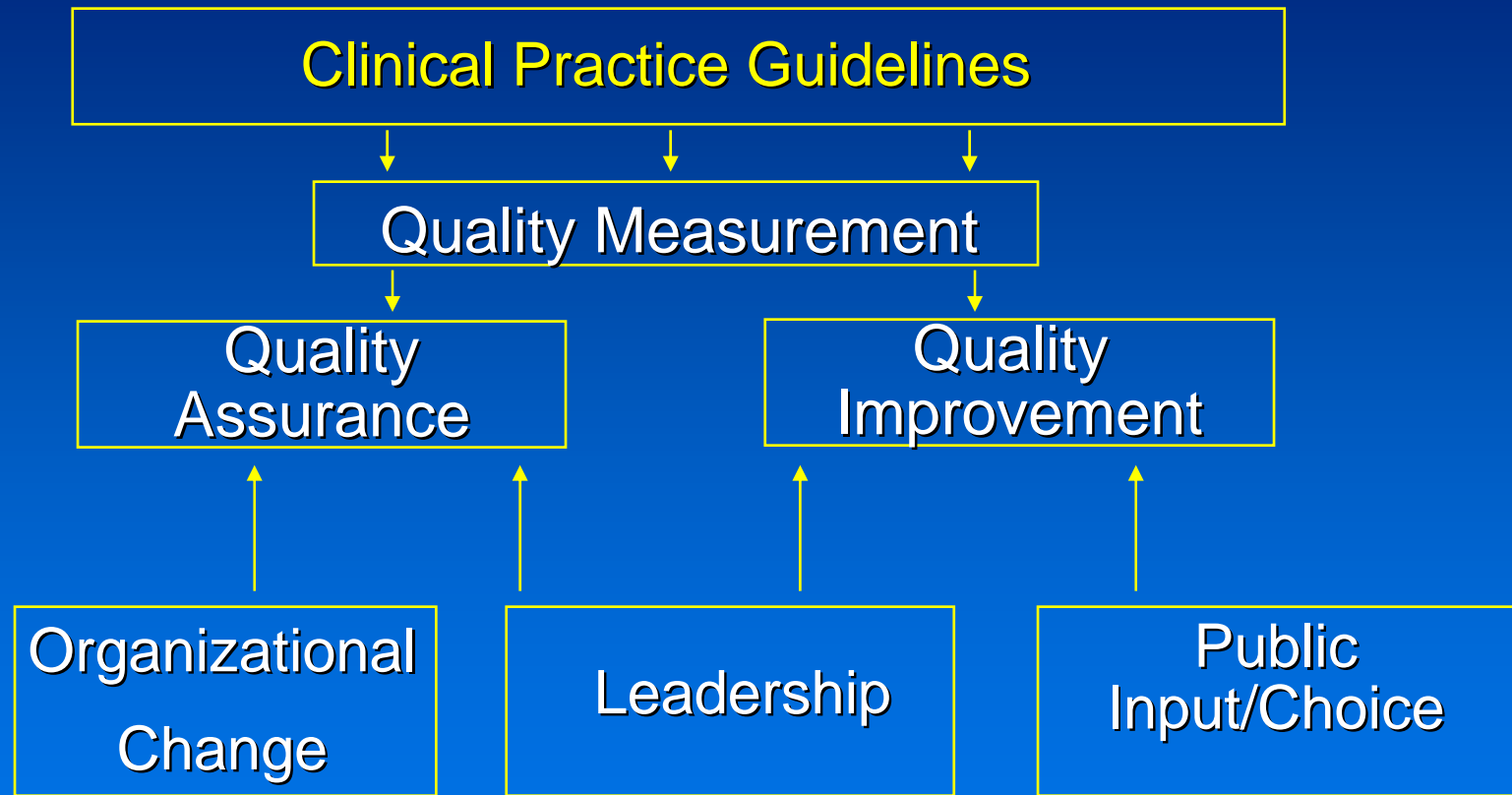
- Measures of process versus measures of outcomes
  - Improving a mammography screening rate is not the same as improving diagnosis and treatment of breast cancer and decreasing mortality
  - Where processes are known to be linked to quality, or where outcomes are not likely to be observed within a short time, process measures may be appropriate
  - Outcomes measured must be important to patients

# The Genealogy of Quality: Quality Research to Quality Care



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# Quality Measurement

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- Quality measurement for **choice**
  - Consumers ↔ Patients
  - Purchasers
  - Clinicians
- Quality measurement for **improvement**
- Quality measurement for **accountability**

# Advancing the Science of Measurement

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## ■ Past

- Knowledge passed down from experts
- Quality = the result of individual efforts

## ■ Present

- Knowledge obtained from multiple dynamic sources
- Quality = the result of the individual + system





# Many Challenges

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- Difficult to develop rigorous quality measures
- Appropriate and available data sources
- Reliability and validity testing is difficult and expensive
- Quality measures must be current with CPGs
- Attributes of measures poorly described

# National Quality Measures Clearinghouse

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- The quality measure must address some aspect(s) of quality of care delivered to specific patients by a specified individual, group of individuals or organization(s).

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- Documentation should include at least:
    - The rationale for the measure
    - A description of the denominator and numerator of the measure (including specific variables for inclusion or exclusion of cases from either the denominator or numerator)
    - The data source(s) for the measure

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- Documentation of supporting evidence

\* Evidence-based CPG\*

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- Must meet at least one of the following:
    - Cited in one or more peer-reviewed articles applying or evaluating measure properties
    - Peer-reviewed article evaluating measure reliability and validity
    - Developed, adopted, adapted, or endorsed by an organization that promotes rigorous development and use of clinical performance measures

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- Measure must be in current use or currently in widespread testing and must be the most recent version if the measure has been revised

# Categories for Measure Attributes

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- Measure identifying information
  - name, measure set, status, update, developer, etc.
- Evidence supporting the measure
- Evidence supporting the selection of the measure
  - variation in quality
- State of use of the measure

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- Application of measure
    - settings of care, patient population, provider type, etc.
  - Characteristics of the primary clinical component of the measure
  - Data collection for measure
  - Computation of the measure
  - Evaluation of properties of the measure



# Pilot Test Results

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- There is a lot of work to do to bring documentation and reporting of measures to the same level of CPGs
- It is critical to link CPGs to rigorous measures
- Genealogy of measures and measure sets is hard to trace

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- Stay tuned - December 2002

