

Approaches to Researching Health Care Quality Improvement

Evidence Based Practice Center
Stanford University

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Evidence Based Practice Center



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CENTER FOR PRIMARY CARE AND OUTCOMES RESEARCH
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RESEARCH AT CHP/PCOR



Stanford University/University of California, San Francisco Evidence-based Practice Center

Research Program

LEADERSHIP

Douglas K. Owens (Director) - Stanford University

Eugene Washington (Director) - University of California, San Francisco

Kathryn M. McDonald (Associate Director) - Stanford University



Program Web Site:

<http://healthpolicy.stanford.edu/stanford-uc...>

Stanford-UCSF Evidence-based Practice Center (EPC)

- n Virtual Research Center – over 40 investigators from 2 universities; plus additional collaborators
- n Designated by Agency for Healthcare Research and Quality (AHRQ)
- n Housed at Center for Primary Care and Outcomes Research/ Center for Health Policy at Stanford (PCOR/CHP)
- n Produces Evidence Reports
- n Disseminates Results



EPC Project

n AHRQ request

- Topic by topic review
- Best strategies

n Stanford-UCSF response

- Develop initial framework for thinking about strategies to improve quality
- Broad involvement of experts and stakeholders
- Evidence review and synthesis

*Evidence Report Title:
“Closing the Quality Gap:
A Critical Analysis of
Quality Improvement
Strategies”*

Series of Reports

- n Reports completed
 - n Background, Methods, QI Theory
 - n Diabetes
 - n Hypertension
 - n Medication management – antibiotic use
- n Reports underway on more IOM topics
 - n Asthma
 - n Care coordination
 - Special Needs Children [white paper]
 - n Nosocomial infections
- n Heart failure report with VA-QUERI

Goals

- n Provide guidance to those involved in quality improvement
- n Determine if some QI strategies work better for
 - Specific circumstances
 - Specific settings
- n Advance systematic review methods for QI
 - Apply consistent methods across topics
 - Collaborate with Cochrane EPOC Group (Grimshaw)

QI Strategies

- n Provider reminders
- n Facilitated relay of clinical data to providers
- n Audit and feedback
- n Provider education
- n Patient education
- n Promotion of self-management
- n Patient reminder systems
- n Organizational change
 - Disease or case management
 - Team or personnel changes
 - Changes to medical record systems
- n Financial incentives

QI Designs Evaluated

- n Randomized trials
- n Concurrent controls
- n Interrupted time series

Hypertension QI Findings

- n All QI strategies are associated with improved hypertension control
 - 4.5 mmHG systolic BP median reduction (N=33)
- n Strategies with apparent greatest impact:
 - Organizational change, specifically disease or case management
 - Patient education
 - Facilitated relay of patient data
 - Inadequate evidence regarding multi-component vs. single component strategies
- n Greater effect sizes in smaller studies suggests publication bias (negative studies not published as frequently if small).
- n RCT and CBA results similar

Diabetes QI Findings

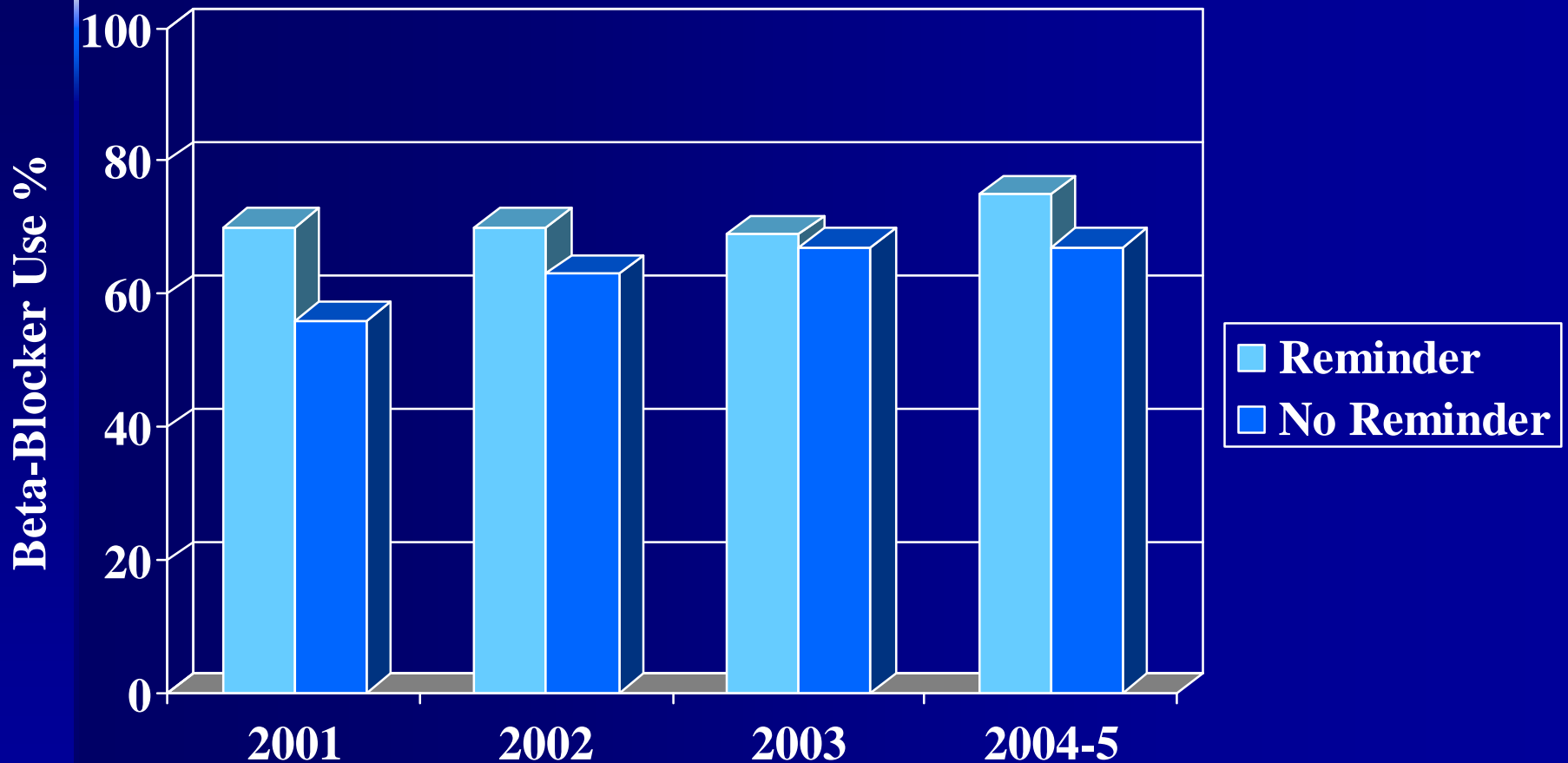
- n All QI strategies are associated with improved glycemic control
 - 0.48% HBA1c reduction (N=39)
- n Strategies with apparent greatest impact:
 - Organizational change, specifically disease or case management
 - Patient education
 - Multi-component strategies
- n Greater effect sizes in smaller studies suggests publication bias (negative studies not published as frequently if small).
- n Smaller effect sizes in RCTs

Limitations and Challenges

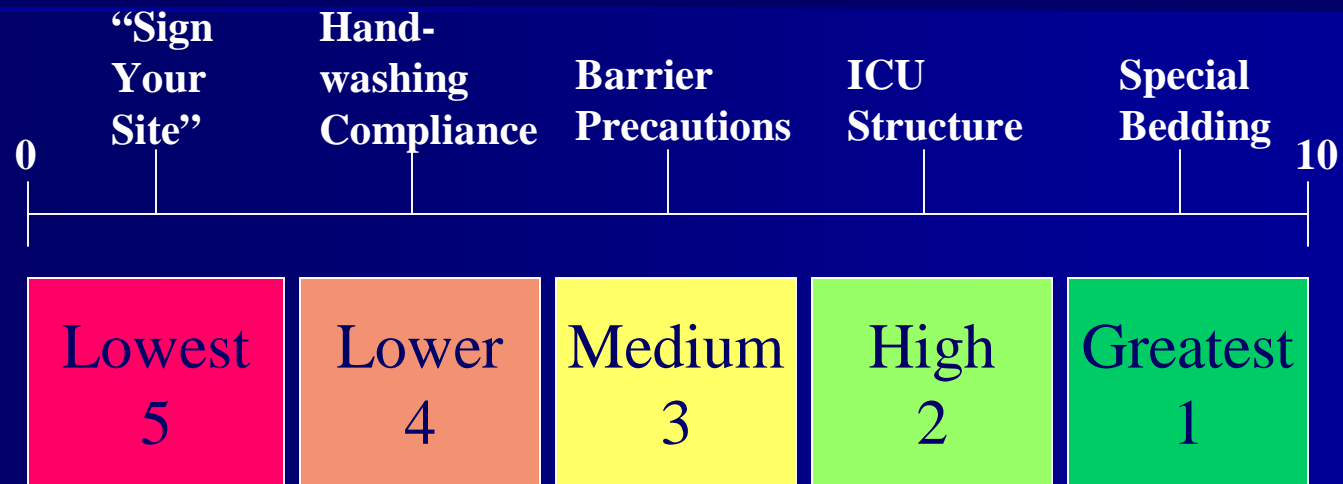
- n Vague descriptions of QI strategies
 - Challenging to compare studies
- n Inadequate information on organizational setting
 - Challenging to provide tailored guidance
- n Confounding - many different combinations of individual QI strategies reported
 - Challenging to determine active ingredient(s) within QI initiatives

The Problem of Secular Trends

Increase in Beta-blocker use over time for both groups



Strength of Evidence Scale



Impact

Low

High

Study Strength

Low

High

Effect Size

Negligible

Robust

Implementation Rating

n Cost barriers

- Start-up & annual outlay
- *“High”* (\$1M+), *“Medium”* (\$100K+), *“Low”*

n Complexity barriers

- Technical (e.g., integration of legacy and newer computer systems)
- Policy & politics (major shifts in who does work or who pays for it)
- *“High” vs. “Low”*

Is the Required Evidence Different from Clinical Medicine?

- n Depends on potential harm and cost
 - In drug trials these are significant
 - n Thus we need a lot of evidence to be sure of a benefit
 - In quality improvement potential harm and cost may be negligible (reminders for foot exams in diabetics)
 - n Evidence of benefit needed for implementation is small

Evaluation of Context

- n Whenever possible
 - Example: Clinic effect for reminders for beta-blockers in heart failure
 - n Significant effect for general internists
 - n No clear effect for cardiologists
 - Evaluation often occurs during implementation

Additional Research

- n Evaluate components of multi-dimensional interventions (disease management).
- n Evaluate the implementation of QI interventions.



Potential Conflicts of Interest

- n Employed by the VA
- n Research grants from the VA

Background

n Problem

- Quality Gap

n Current Context

- IOM Crossing Quality Chasm Series: National Priorities for Transforming Healthcare
- “The Quality of Health Care Delivered to Adults in the United States” McGlynn et al, NEJM 2003
- AHRQ Activities
 - n National Healthcare Quality Report
 - n Closing the Quality Gap Series by Stanford-UCSF EPC

Quality Improvement Strategies Project

Evidence-based Practice Center Team Leaders:

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Kathryn M. McDonald, MM (Stanford)

Robert M. Wachter, MD (UCSF)

Douglas K. Owens, MD, MS (Stanford)

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n Agency for Healthcare Research and Quality

- Jean Slutsky, PA, MSPH, Kenneth Fink, MD, Marian James, PhD

- n The Stanford-UCSF Evidence-based Practice Center provides an infrastructure and focal point for conducting high-quality systematic literature reviews, supplemental syntheses and technology assessments, and generating evidence reports from these efforts. Access to local experts in all components of healthcare decision-making enhances the center's multidisciplinary scope. The center will focus on furthering the practice and translation of evidence-based medicine in the pursuit of improving health outcomes for populations and individuals.

Evidence-based medicine is the defining principle in much of the work of the group of investigators at both institutions. The toolbox of evidence-based medicine includes: systematic review and critical appraisal of the medical literature; clinical epidemiology; biostatistics; health services research; development of clinical guidelines; and supplemental analyses such as meta-analysis, decision analysis, cost-effectiveness analysis. The EPC effort extends current collaborative work in these areas of health services and outcomes research.

Surrogate Markers

Ventricular Ectopic Beats



Antiarrhythmic
Drugs



ASSUMED
Ventricular Fibrillation/
Sudden Death

