

The Intersection of Quality Improvement & Research

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In My Experience - - -

- Family practice
- Specific quality improvement projects
- Quality Improvement Collaborative (ICSI)
- Medical group leadership
- Research

“Experience is the name that everyone gives to their mistakes” – Oscar Wilde





Agenda

- A. The quality and QI problem
- B. Research insights into QI
- C. Research as a problem for QI
- D. What's needed



A. The Quality Problem

Who's Happy?

- Physicians?
- Patients?
- Payers?
- Purchasers?
- Policy makers?



What Do Patients Think?

Gallup Poll

- What describes US healthcare?
 - Crisis-11%; Major problems-54%; Minor/OK-34%
- Are you satisfied with total cost of healthcare?
 - Satisfied-22%; Dissatisfied-75%
- Quality of your healthcare?
 - Excellent-28%; Good-54%; Fair-14%; Poor-3%



Institute of Medicine

- 1999 – To Err is Human
 - 44-98,000 hospital deaths/year
- 2001 – Crossing the Quality Chasm
 - “The difference between what we know and what we do is not just a gap, but a chasm”
- 2003 – Priority Areas for National Action
 - 20 medical conditions for transforming care



What Does the Data Show?

- RAND Studies in NEJM:
 - McGlynn 2003;348:2635-45
 - Asch 2006;354:1147-56
- 6,712 random adults in 12 metro areas with 1 or more MD visits
- 439 indicators for 30 conditions + prev'n
- Overall, participants received 54.9% of recommended care

RAND Studies

- Women: 56.6%
- Age <31: 57.5
- Blacks: 57.6
- Hispanics: 57.5
- Income >\$50K 56.6
- Education or health insurance status = No difference
- Prev/Acute/Chronic = No difference
- Men: 52.3%
- Age >64: 52.1
- Whites: 54.1
- Income <\$15K 53.1



Quality Improvement (QI) A Short History

- Deming taught CQI to the Japanese after WW II
- Brought back to US industry in 1970s
- Health care in 1980s - Quality assurance (QA)
- Berwick changed it to CQI – 1989
- Stage I: 1990s methods complex and slow
- Stage II: focus on rapid evolutionary change (IHI Breakthrough Series and the Model for Improvement)



QI Problems

- History of QA
- Multiplicity of approaches
 - PDCA, Lean, Six Sigma, Baldrige, consultants
- Too slow, cumbersome, costly
- Primarily used for business processes
- No effect on cost problems
- Lack of proven efficacy
- Dissemination problems

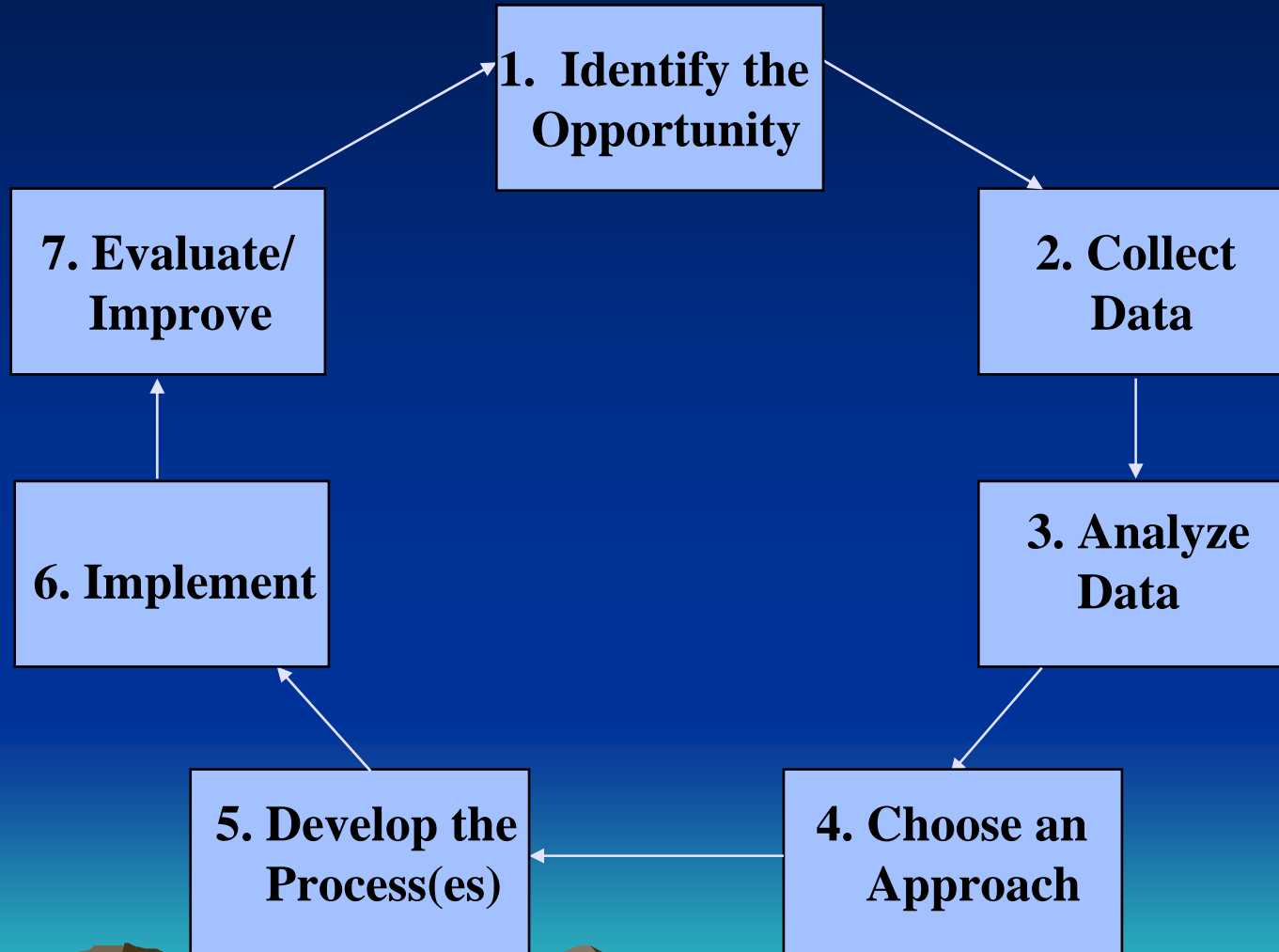


B. Research Insights into QI

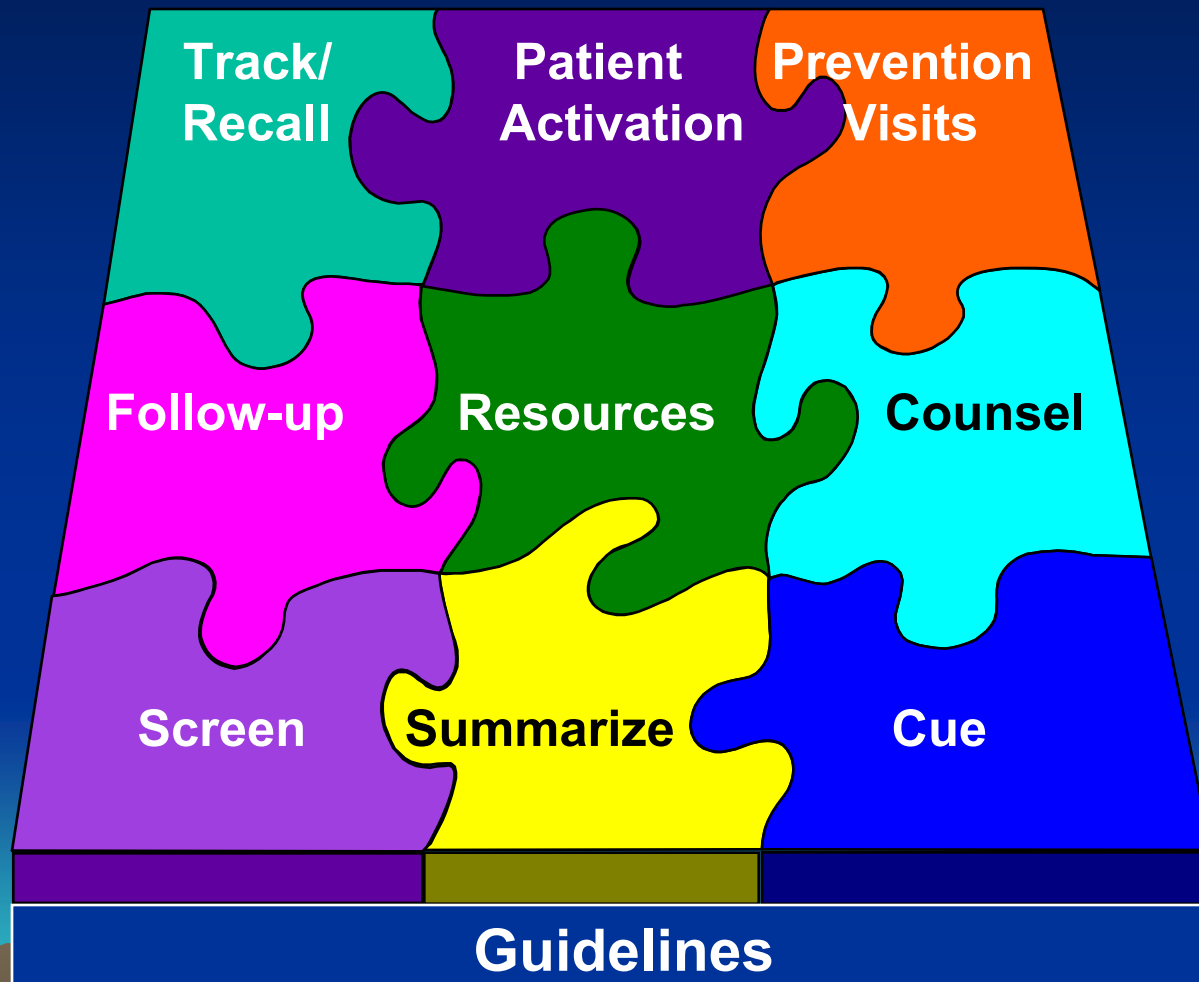
- IMPROVE Project (1993-7) *IMproving PRevention through Organization, Vision, and Empowerment*
- RCT of 44 clinics, testing training and facilitation of CQI methods + practice systems
- Targets:
 - Cancer Screening: (Pap, mammo, SBE)
 - CV Counseling: (BP, chol, smoking)
 - Immunization: (influenza, pneumococcus)



Process Improvement 7-Step Model



Preventive Services Care System



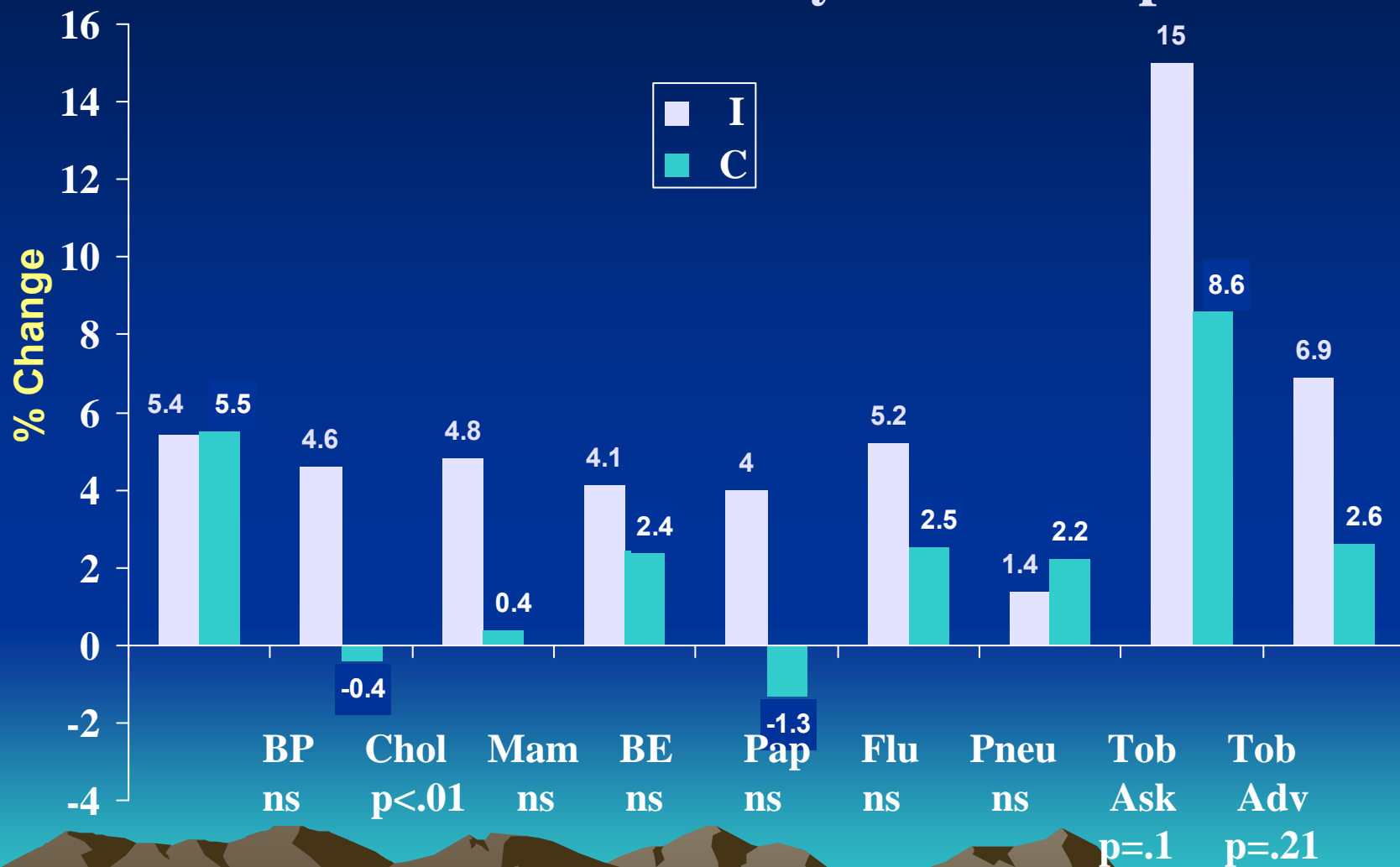
Apparent Success

- Clinic team enthusiasm/hard work
- More systems in I clinics
- 94% satisfaction at end of Intervention
- Larger Round II (28)
- Still working/expanding at project end and thereafter



IMPROVE - PIN Change From T1 to T2

Mean Clinic Rates by Patient Report



Problems

- Limited leadership commitment
- Limited planned change ability
- Inefficient QI model
- Incomplete use of QI model
- Turmoil
- Incomplete system development
- Incomplete implementation
- Resistance to new roles
- Insufficient time
- Faulty care model

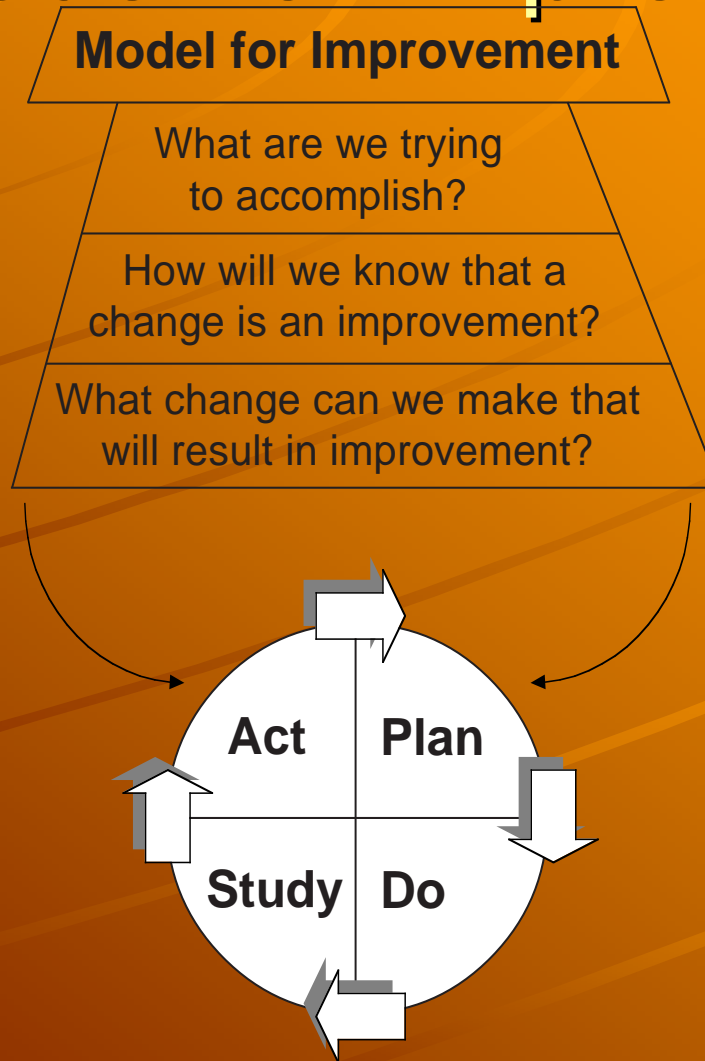


Stage II of Health Care QI

- Berwick - Inst. Healthcare Improvement (IHI)
- Model for Improvement:
 - Rapid development and implementation
 - 3 questions and small tests of change (PDSA)
- Breakthrough Series:
 - 1 year from start to report
 - 3 2-3 day learning sessions with work between
- Overall message: Urgency & transformation



The Model for Improvement



So Let's Try Again

- DIAMOND Project
- Trial of Stage II methods for depression care
- Compare 3 volunteer clinics with 6 others
- Involve organizational and clinic leaders
- Common QI team with short deadline (7 months), clear goals and content (from lit.), rapid cycle tests of impl'n changes



DIAMOND Results

- Same findings – patient surveys showed no real differences in care or outcomes
- Fewer causes:
 - Little real leadership support
 - Faulty care model – MDs had to change



What Did We Learn?

- Physicians don't change
- Many of the new demands on physicians are better done by others on their team, so:
 - Change the working environment
 - Make it automatic, easier than the alternative
 - Delegate where possible
 - Emphasize standing orders
- Such systems changes require committed effective leadership and a high priority



Guideline Implementation: What the Literature Doesn't Tell Us

- Systematic review of 47 reviews
- Focused on how to change the behavior of individual physicians
- Little attention to:
 - practice systems or organizational support
 - the process by which change is produced
 - the role of practice environmental context
- Key individual studies support value of systems

Jt Comm J QI 2000;26:525-37



Lessons from Experienced Guideline Implementers

- 12 IIMPs selected from most effective groups
- Literature review and interviews
 - Goal: identify most important factors & strategies
- Iterative group process of voting and discussion
- Final review by an international expert panel

- Jt Comm J QI 2000;26:171-88



Attend to Many Factors -

Identified 87 factors affecting implementation

44 – rated as having extremely or very much effect on the ability to implement a guideline

- 20 – Organizational capability for change
- 9 – Guideline characteristics
- 7 – Medical group characteristics
- 6 – Infrastructure for implementation
- 2 – External environment

#1 was Presence of organized systems in clinic



- and Use Multiple Strategies

Identified 25 implementation strategies:

- 20 needed to be used Most or All the Time
- 19 were considered Very or Extremely Effective when used appropriately
- #1 in both categories was *System Supports* like reminders, registries, or task delegation

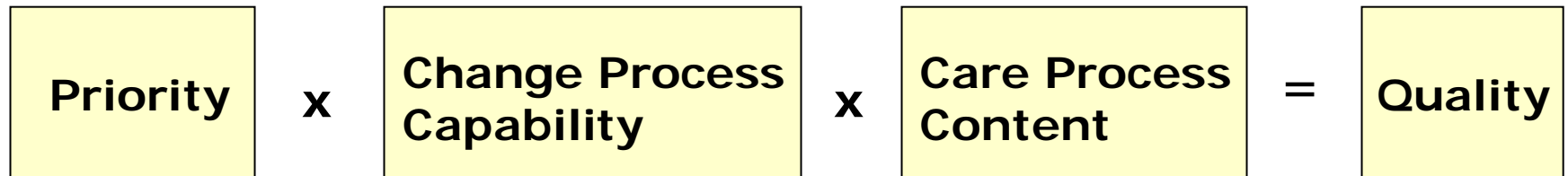


Conceptual Framework for Practice Change

Facilitators

Facilitators

Facilitators



Barriers

Barriers

Barriers

Organizational Priority

- Both overall and for the specific topic
- Identified by leadership, supported by MDs
- External facilitators:
 - Financial incentives or penalties
 - Key customers
 - Regulatory and payor groups
- Internal facilitators – Idealism & mission
- Internal barriers – \$ problems & new systems



Change Process Capability

- Understanding and ability to use a proven framework for managing change
- Organizational infrastructure for change
- Facilitators:
 - Adequate resources
 - Effective leaders at all levels
 - Systems thinking and measurement skills
 - Mature clinical information system



Care Process Content

- Understanding of a framework (CCM)
- Emphasis on practice systems
- Facilitators:
 - Existence of other practice systems
 - Interest in standardizing care & using teams
 - Patient-centered culture
 - Focus on population management
 - Choosing changes with benefits for all



“Every system is perfectly
designed to achieve exactly
the results it gets”

Paul Batalden, MD



C. Research as a Problem for QI

1. QI is confused with research
2. Researchers and funders set the research agenda
3. The evidence comes from RCTs
4. RCT methods are the gold standard
5. IRB issues



1. Confusion of QI & Research

(Solberg et al. Jt Comm J QI 1997;23:135)

Feature	QI	Research
Purpose	Improve a local care process and outcome	Create generalizable knowledge
Question & Audience	Clinicians/Leaders Local clinical setting	Researchers/Funders Science/Medical public
Measures & Sample size	Few, simple Small	Many, complex Large to very large
Confounders & Analysis	Awareness Keep it simple	Measure or control Statistics
Resources & Timeline	Few Short so can be used	Many Long – who cares?

QI and Research Similarities

Both must consider very carefully:

- Question or purpose
- Measurement selection
- Sampling strategy
- Data collection techniques
- Results and lessons
- Utility for others



2. Researchers/Funders Set the Research Agenda

- Questions important to care don't get studied
- Results may be misleading or inappropriate for general population
- Practice gets the blame for lack of implementation



3. Evidence Comes From Randomized Controlled Trials

- The gold standard
- Is it fool's gold?
 - Very expensive
 - Long time delays
 - Questions may not be relevant
 - Interventions may not be replicable/feasible
 - Methods often limit value of answers
 - Not appropriate for all questions



4. RCT Methods = Gold Std.

- Other methods lack credibility for funders and journals, so hard to get acceptance
- QI advocates discount possibility of using research methods
- Implementation studies have been infrequently or poorly done



Research Methods Useful to QI of Medical Practice

- QI methods described more completely
- N-of-1 trials
- Case studies
- Qualitative methods
- Observational/descriptive studies
- Before/After or Time series
- Evaluation
- Mixed or multi-method



5. IRB Issues

- IRBs claim oversight of any QI with intent to publish
- Multi-site practice-based research or collaborative QI efforts → multiple IRBs



D. Needed: Research/QI Merge

- A different paradigm:
 - Not “Translate research into practice” (TRIP)
 - Instead “Optimize practice through research”
- Encouragement of collaborative studies
- Research agenda from practice
- Expanded methods
- More transformational QI
- Documentation and dissemination of QI lessons



Examples

- VA QUERI program
- Kaiser Care Management Institute
- Glasgow RE-AIM
- Partnership grants at HealthPartners
- DIAMOND project/study



VA QUERI Program

- Quality Enhancement Research Initiative
- Begun in 1998 as part of VA transformation
- Data-driven outcomes oriented QI
- Now 10 topic-area centers
- Processes critical to success:
 - Research focused on patient needs/system performance
 - Implementation is studied systematically
 - Researchers and policymakers interact directly
 - Activities are both top-down and bottom-up



Kaiser Care Management Institute

- Goal: make the right thing easier to do
- Method: research grants to QI leaders with commitment to region-wide dissemination plans
- Examples:
 - Diabetes care
 - Secondary prevention of cardiac risk factors



RE-AIM

Glasgow – Kaiser Colorado

- Reach = % of population affected
- Efficacy = success rate
- Adoption = % of sites adopting
- Implementation = fidelity of intervention
- Maintenance = sustained over time



Partnership Grants

- HealthPartners Research Foundation
- History of \$25,000 internal research grants
 - Problems of implementation and outcomes
- 2006 change for ½ of total funds if:
 - Proposed/implemented by partnership
 - Addresses organizational strategic issue
 - Operational leader commitment
 - Final report specifies effects



Funded Grants

- Patient decision quality measure
- Hospice team evaluation
- Dental caries risk level and sealant use
- Public performance reporting
- EMR and child medication safety



New DIAMOND Project/Study

Project

- Depression Improvement Across Minn. –
Offering a New Direction
- New payment model for best practice depression care
- Training & certification by ICSI
- Bonuses/penalties for patient outcomes



Best Practice Depression Care

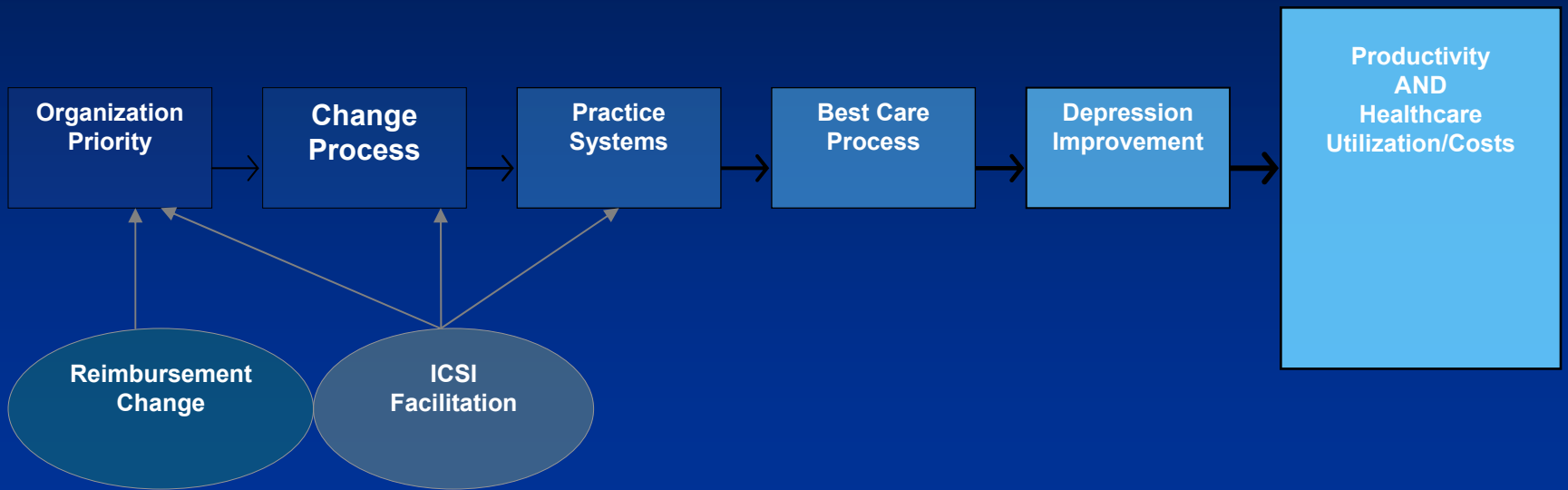
- Comprehensive initial evaluation
- Registry and tracking/monitoring system
- Treatment intensification
- Relapse prevention
- Care manager role in primary care
- Psychiatric collaboration



DIAMOND Study

- NIH proposal to evaluate this natural experiment
- Multiple baseline, staggered intervention
- Measure change in practice systems, care process, patient outcomes, work productivity, healthcare costs





The Implementation Chain

Conclusions

- We must improve (Priority)
- Doing so will require good use of QI (Change Process)
- It will also require good choices (Care Process, Research)
- But it is really all about Systems Thinking



Conceptual Framework for Practice Change (QI)

Facilitators

Facilitators

Facilitators



Barriers

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Thank You!



What Distinguishes Research Useful to Practice?

- Question comes from practice
- Commitment to implement/use answer
- Designed and conducted by a practice-researcher collaboration
- Short timeline
- Publish the lessons and impact for other practices



Before/After Study

- Dr. K.
- Primary care internist at a 22 PC MD urban clinic in a large multi-specialty group
- He thought he provided good diabetes care
- Shocked when he saw his quarterly data
- First, he just tried harder
- When that didn't work, he got systematic



Change Process (QI) Approach

1. What to achieve? – drastic improvement in overall care of his diabetes patients
2. Outcome measure: ODC (Optimal Diabetes Care) = % of patients who have all 5:
 - LDL <100 in past 12 months
 - HbA1c <7 in past 6 months
 - Systolic BP <130 at last visit
 - Regular ASA use documented
 - Tobacco free status documented

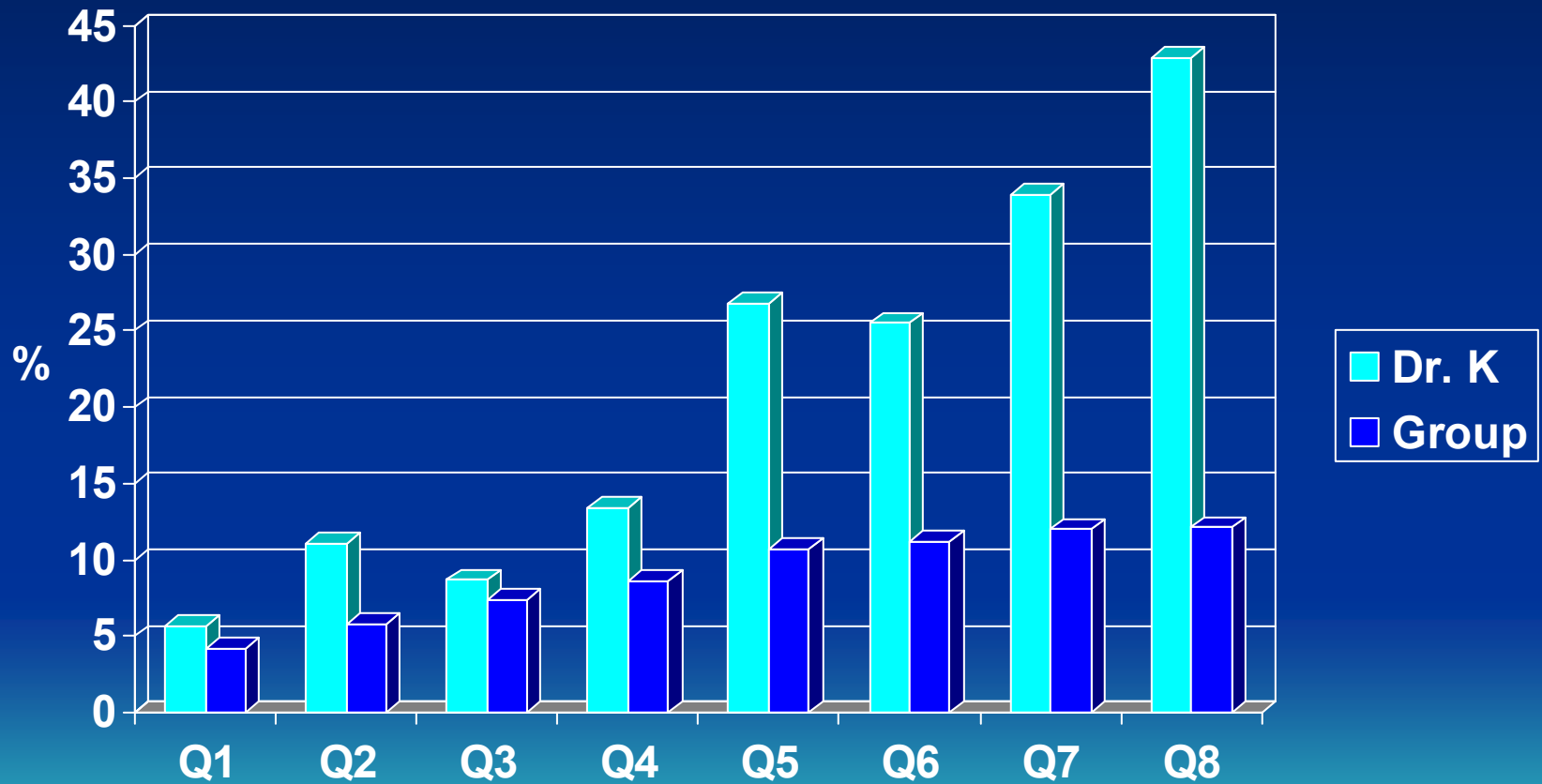


QI Process (cont.)

3. Focus on key care change concepts:
 - system changes
 - combating clinical inertia
4. Rapid cycle tests of changes
5. Work closely with medical group and clinic leadership
6. Collaborate with others with expertise or resources



Optimal Diabetes Care



Effective Care Changes

1. Freq. measures
2. Freq. intensification
3. Active outreach
4. Delegation/Standing orders
 - Receptionist
 - Rooming nurse
 - Phone RN
 - Pharmacist/educator
5. Optimizing visit eff'y
6. Optim. follow-through
7. Activating patients
8. Quarterly MD chart review & letters
9. Stressed importance and urgency of goals

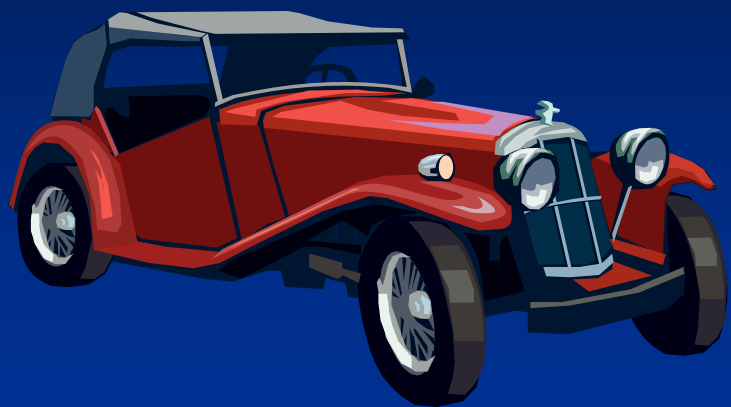


Fundamental Law of Improvement

“Every system is perfectly designed to achieve exactly the results it gets”

Paul Batalden, MD





Can QI be Research?

Feature	QI	QI Research
Purpose	Improve a local care process and outcome	Describe what was done & the lessons
Question & Audience	Clinicians/leaders Local clinical setting	Other clinicians and care delivery leaders
Measures & Sample size	Few, simple Small	Describe the setting and document the changes
Confounders & Analysis	Awareness Keep it simple	Description
Resources & Timeline	Few Short so can be used	A little more A little longer

Ineffective Care Changes

1. Trying harder on his own
2. Focus on life style changes
3. Assigning groups of patients to team members
4. Delegating med changes to phone RNs



Case Study Example

- 15 FP group in NE metro with 3 clinics
- Star performer on quality measures
- Interviewed 16 people
- Identified 12 attributes as keys to success:
 - Leadership
 - Patient centeredness
 - Extensive involvement & engagement
 - Highly organized change management



- Focus
- Strongly oriented to change & improvement
- Teamwork and standardization
- Focus on patient-physician relationship
- Physician ownership & responsibility for group
- Market-driven
- Data-based, transparent, and accountable
- Pride and joy in work



Evaluation Example

- HPMG needed a measure of patient safety
- Used a quarterly patient satisfaction survey to ask about errors experienced
- 10-12% of respondents reported at least 1 family member had an error in past year
- Leaders and MDs asked, “What does that mean?”



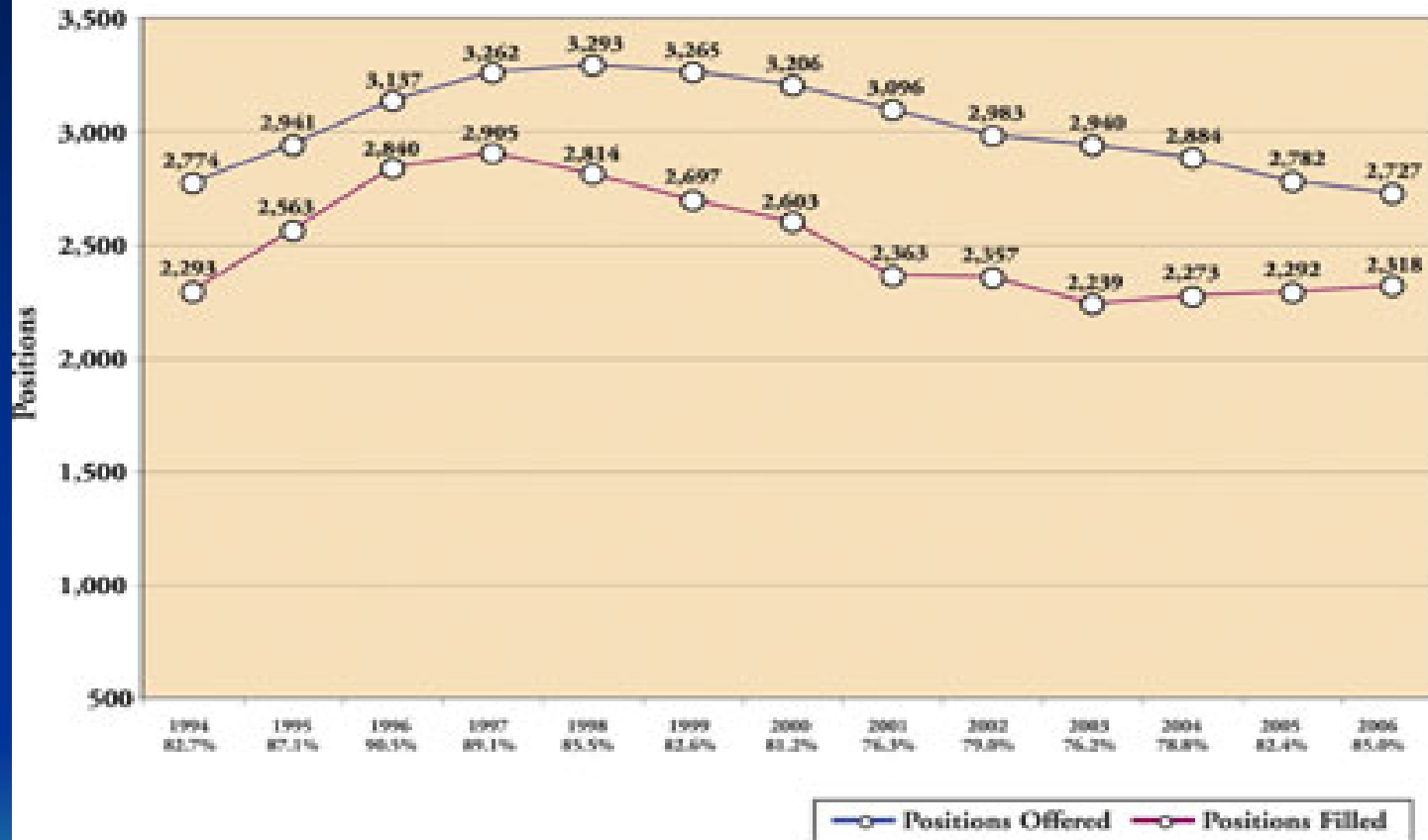
So We Studied It

- Small grant & assembled a team
- Methods: more questions + chart audit
- Results:
 - 1/10 of the 11% might be medical errors
 - 45% were misunderstandings
 - 20% were dissatisfaction
 - 15% had inadequate information to decide
 - 10% were non-medical errors
- Action: Stop asking, seek alternate rate

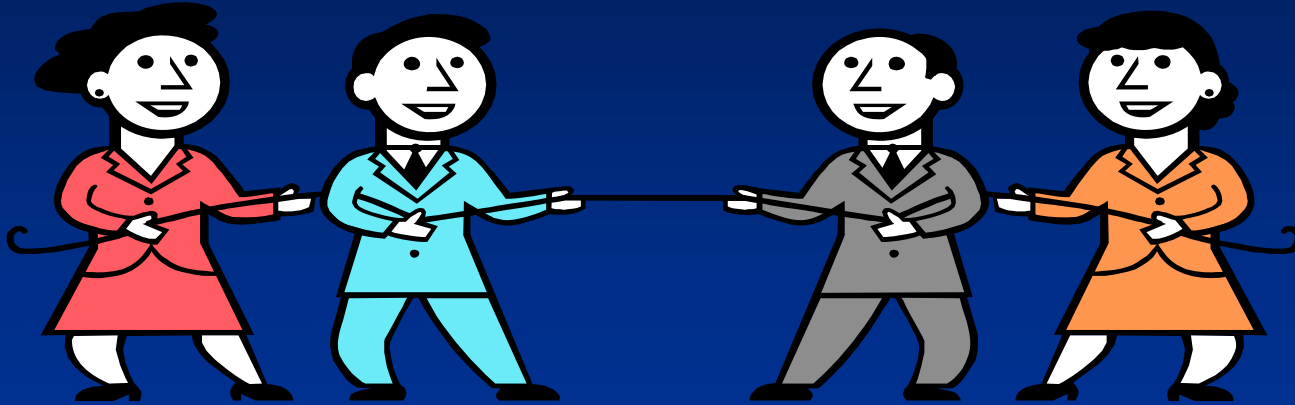


Graph 1

Family Medicine Positions Offered & Filled in March 1994 – 2006



Research Useful to Practice



QI Research



Other Research
Models