Marrying Technology to the Chronic Care Model

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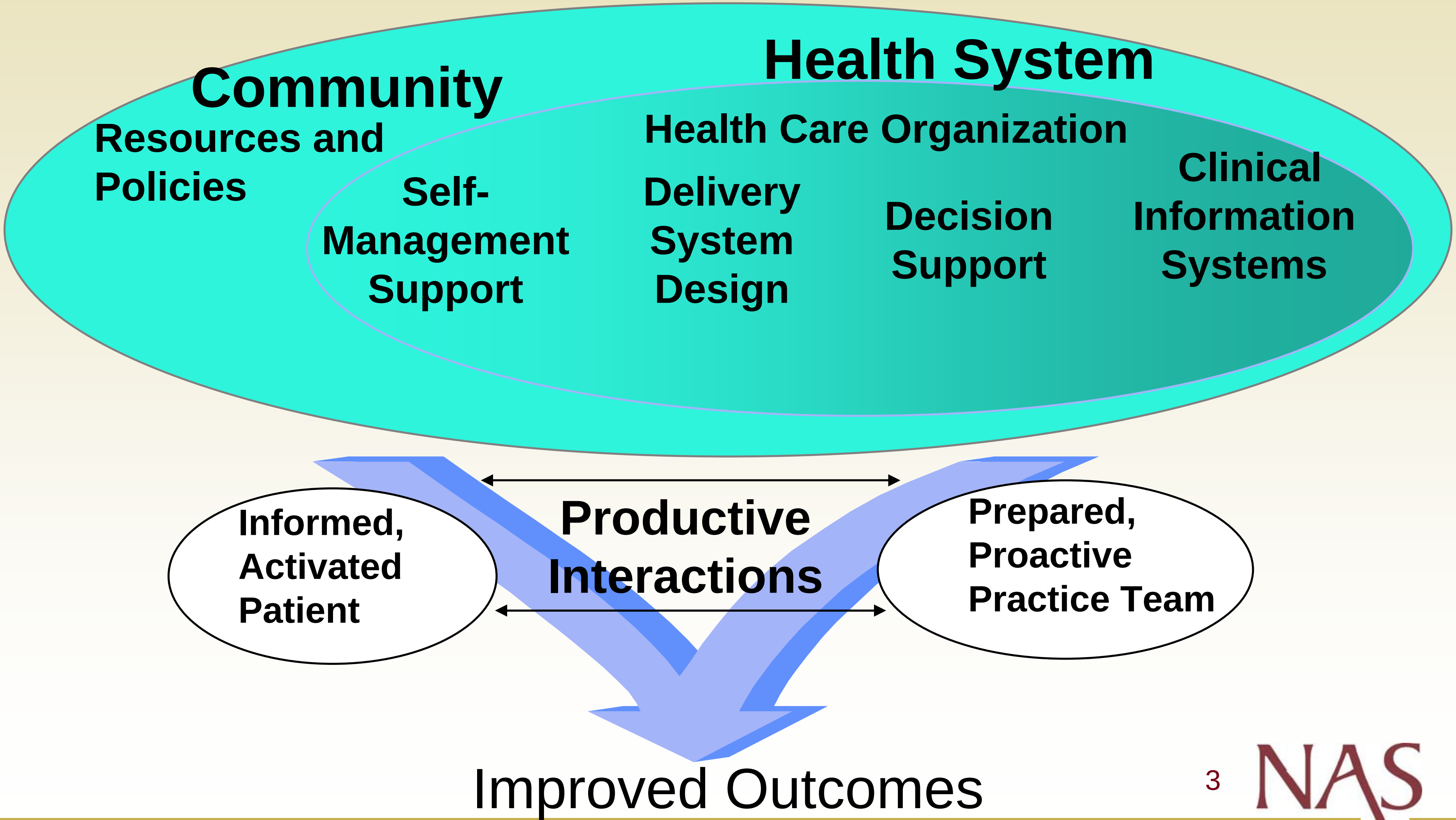
The Quality Chasm

What Do We Do With the CCM?



Community

Resources and Policies

Health System

Health Care Organization

Self-Management Support

Delivery System Design

Decision Support

Clinical Information Systems

Informed, Activated Patient

Productive Interactions

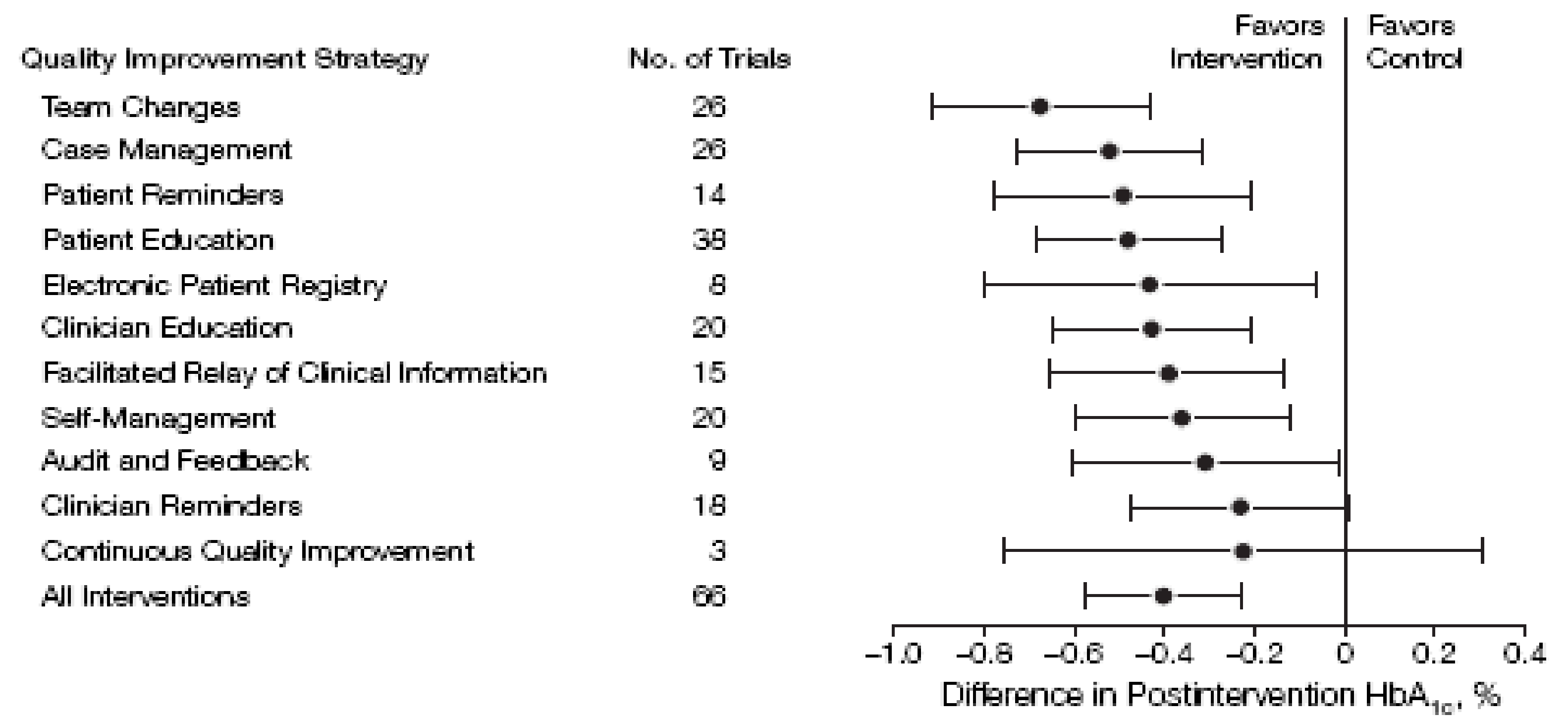
Prepared, Proactive Practice Team

Improved Outcomes

Linking QI Process to Outcomes

- Shojania, et.al., JAMA July 26, 2006
- Meta-regression analysis for HBA1c control
- 66 eligible controlled trials, mostly RCTs
- Considered 11 QI categories: case mgmt, team care, registry, CME, clinician reminders, facilitated relay of clinical info, patient ed, self-mgmt support, patient reminders, CQI

Figure 2. Postintervention Differences in Serum HbA_{1c} Values After Adjustment for Study Bias and Baseline HbA_{1c} Values



Quality Improvement Strategy	No. of Trials
Team Changes	26
Case Management	26
Patient Reminders	14
Patient Education	38
Electronic Patient Registry	8
Clinician Education	20
Facilitated Relay of Clinical Information	15
Self-Management	20
Audit and Feedback	9
Clinician Reminders	18
Continuous Quality Improvement	3
All Interventions	66

Negative estimates favor intervention groups over control groups for the indicated quality improvement (QI) strategy. These estimates were derived from a meta-regression model with adjustment for the effects of study size (at least as many patients as the median among all included studies vs not) and a dichotomous variable that equaled 1 if the mean baseline glycosylated hemoglobin (HbA_{1c}) value was ≥8.0%. Thus, the point estimate of −0.67% for team changes indicates that, given a large study (ie, having at least as many participants as the median of 180 patients) in which the mean baseline HbA_{1c} values were 8.0% or higher, the intervention group would have a follow-up HbA_{1c} value 0.67% lower than the follow-up value in the control group.

What Roles For Technology?

- Facilitate care teams
- Case management support
- Home-based care assistance
- Links between patient and clinicians
- Physician reporting and feedback
- Clinician prompts and reminders

What Do the Tools Look Like?

- Registries
- Electronic Health Records
- Personal Health Records
  - Putting the control into the hands of the patients
- Web-based communication tools

What is a Registry?

- An electronic tool that captures and tracks data for a patient population with a particular disease or health state.
- Enables population-based care for entire group of patients, not just those that elect to come into the office.

Chronic Disease Registries

- Identify, stratify and track populations
- Interconnect members of the care team
- Find patients "falling through the cracks"
- Provide point-of-care support
- Help the organization prioritize

Starting a Registry

Key considerations:

1. Product selection: Buy vs. build
2. Data issues
3. Provider involvement

Registry Options

- Home grown—built off claims, labs, rx
- Vendor product
  - Public domain software (Access database)
  - Commercial software on client hardware
  - Data supplier delivers regular reports
- ASP Model
  - Runs remotely; MDs and managers access over secure internet connection

Buy vs. Build

- Decision depends on organizational resources, characteristics
- Buy:
  - + Speed to implementation
  - + Less internal staff needed to maintain
  - + Some products can track multiple conditions
  - ◆ Reliance on external vendor for customization
    - New features
    - Integration with EHR or other local needs
- Build:
  - + Retain control over functionality and data
  - + Can customize to meet needs
  - ◆ Requires knowledge in database management, IT understanding of chronic care management

Data Quality

- Data accuracy important to success
  - Relevant recommendations, comparisons
  - Credibility with physicians, patients
- Consider implications of errors
  - Cohort: false positives, false negatives
  - Interventions/measures
- Timeliness of data refresh
- On-going quality control, maintenance

Registry in Action

- NP reviews report of all patients overdue for a test or out of control
  - Calls highest risk patients to check in and schedule visit or tests
  - Generates letters to patients mildly out of adherence
- MA prints snapshot of patient’s status and clips to chart for MD seeing patient
  - May show most recently lab values, when meds last filled, any recent hospital admissions, etc.
  - May provide prompts if patient overdue for evals

Electronic Health Records

- Acquire and assemble data – lab, radiology, etc.
- Connect to colleagues – team care, consultants
- Provide clinician reminders/decision support
  - Identify patients overdue for routine care – prompts
  - Drug-drug; drug-dx; drug-lab; dose checking
  - Tagged literature to support decision-making
- Support clearer and fuller documentation
- All patients, all parts of their care

EHR in Action

- Delivery system EHR allows case manager to review MD notes and manage patient with primary physician
- Chronic disease templates allow rapid documentation of key findings
- Embedded decision support prompts and reminds clinician during encounter

EHR vs. Registry for Chronic Disease

- EHR positives
  - Useful for all patients, all data
  - Complete visit documentation
  - Strong R&D and support (major vendors)
- Registry positives
  - Population based
  - Easier to stratify, target, track patients
  - Less expensive, easier to implement

EHR vs. Registry for Chronic Disease

- EHR negatives
  - Handle one patient, one problem at a time
  - Weak population management functions, little or no care/case management
  - Expensive, hard to implement and maintain, usually takes a long time to get to chronic dz fxns
- Registry negatives
  - Limited data—patients, and clinical info for them
  - Can't document for entire clinical note
  - Limited R&D to expand capabilities
  - Weak implementation support

Personal Health Records

- Same data as EHR, different presentation format to non-MD
- Some PHRs allow for patient data entry (e.g. home BP readings)
- Good tools pre-populate all key fields
- Potential to motivate and provide self-management support for patients
- Can dramatically improve office and organizational efficiency
- Still in infancy

Patient Communication Tools

- Web-based secure e-mail or similar
- Focused reminders to patients (outbound)
- Succinct updates and questions/ concerns from patients (inbound)
- Referrals to sources of “information therapy”

Types of Secure Communication

- Stand-alone programs—e.g. Relay Health, Medem
- Provided by delivery system
- Integrated into EHR

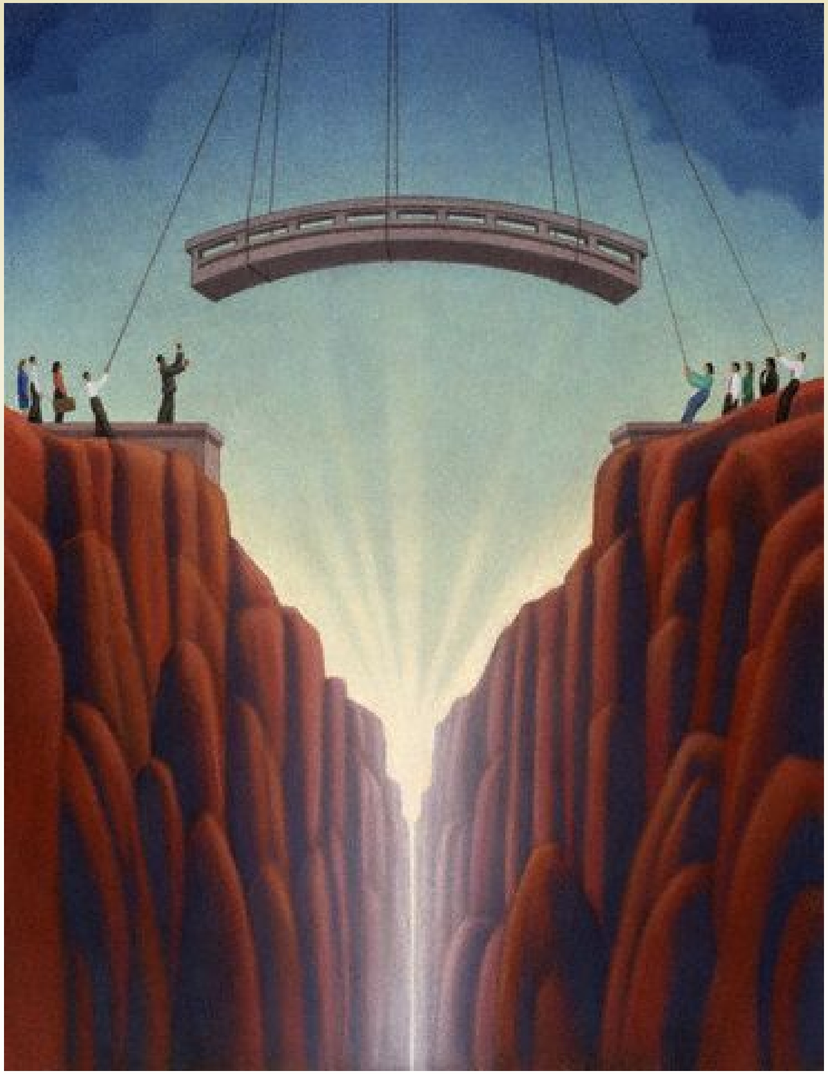
Common Concerns

- HIPAA, privacy, confidentiality
- Lack of reimbursement
- Malpractice fears
- Time sink

Recap

- Top QI changes
  - Team care, case management, patient reminders and patient education
- Key tools
  - Registry, EHR, PHR, secure communications
  - All are evolving, some interrelate
  - Implementation more important that what you choose to use

Its All About the Team



References

- IT Tools for Chronic Disease Management: How do they Measure Up? Jantos and Holmes, CHCF, 2006
- Effects of Quality Improvement Strategies for Type 2 Diabetes on Glycemic Control. Shojania, et.al., JAMA July 26, 2006
- Improving Chronic Illness Care web site: improvingchroniccare.org