How Will We Meet The Health Service Needs Of An Aging America?

Transforming Care – Questions of Feasibility and the Role of Technology

Molly Joel Coye, MD, MPH
Founder and CEO
Health Technology Center

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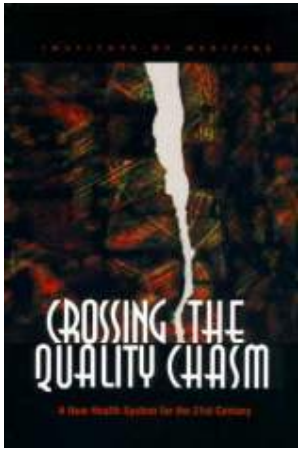
“You Can’t Get There From Here” – David Lawrence, c. 1999

In 2001, Crossing The Quality Chasm argued that systemic change would be required to transform healthcare.

- Care process reforms – to redesign care, roles, and accountability
- Reimbursement reform – to realign incentives
- Investment in information technology – to identify deficits and track progress



Almost 10 years later, we can observe these changes finally picking up steam.

- Care process reforms:
  - Chronic care model, PACE, medical home, transitions models
- Reimbursement reforms:
  - Episodes of care, modified capitation, gain-sharing, P4P
  - Provider-based plans begin to demonstrate traction in chronic care, less in cost
  - Creation of new health plans that target special needs populations: fragile elders, SSI, dual eligibles.
- Investment in IT:
  - EMRs, disease registries, e-prescribing, CPOE, decision support applications
  - Health Information Exchange
  - Data mining, predictive modeling

Will This Transform Care Management In An Aging Society?

The functions required for successful management of chronic diseases have been identified.

The advantages of systems of care that establish many of these functions in a coordinated care process have also been demonstrated.

But major challenges to the development of affordable, feasible and successful chronic care management remain:

- **Workforce** – the notable and growing shortage of primary care physicians, advanced practice nurses, nurses, pharmacists and information technology staff – all necessary for current models of chronic care management.
  - Capacity
  - Productivity
- **Diversity** – the need for culturally competent care management
- **Complexity** – the capacity to target appropriate interventions to individuals with multiple chronic diseases, therapies, environmental and social factors
- **Behavioral change** – the still limited ability of chronic care management to positively affect patient behavior
- **Quality and safety** – the integration of decision support and systems controls
- **Patient and consumer orientation** – the capacity to promote functional independence
- **Business models** – economic systems that reward successful management and control costs

You Still Can't Get There From Here…

. . . unless the management of care includes and/or is powered by transformational technologies.

This is especially true given the significant pressures that exist in regard to the workforce.

When are transformational technologies needed?

. . . when the innovation needed is not feasible at scale or affordable at scale.

What Are These Transformative Technologies?

The classes of transformative technologies that will be critical to chronic care management, especially regarding solving workforce challenges, include:

- Remote patient management
- Medication management
- Caregiver communication
- Cognitive assessment
- Video interpretation
- Remote training and supervision of health workers
- Social networking among patients, caregivers and health workers

How Remote Patient Management Transforms Chronic Care

Early intervention – monitoring patients' physiological, mental, and functional status early enough to detect deterioration and intervene before the need for unscheduled and preventable services

Integration of care – exchange of data and communication across multiple co-morbidities, multiple providers, and complex disease states, in contrast to disease management programs that often target a single disease

Coaching – motivational interviewing and other techniques to encourage patient behavioral change and self-care

Trust – patient reports of satisfaction and feeling of 'connectedness' with providers

Workforce – shift to lower levels of healthcare workers, including medical assistants, community health workers and social workers for much of the interaction with the patient

Productivity – more effective use of provider time at each level of worker

Early Trials of a Transformative Technology: Remote Patient Management

Home-based Telemedicine for Uninsured, High-risk Diabetic Population

Inpatient Admissions	▼ 32%
Emergency Room Encounters	▼ 34%
Outpatient Visits	▼ 49%

(Diabetes Technology & Therapeutics Journal, 2002)

Asthma Self-management for High-risk Pediatric Population

Activity Limitation	▼ (p = .03)
High Peak Flow Readings	▲ (p = .01)
Urgent Calls to Hospital	▼ (p = .05)

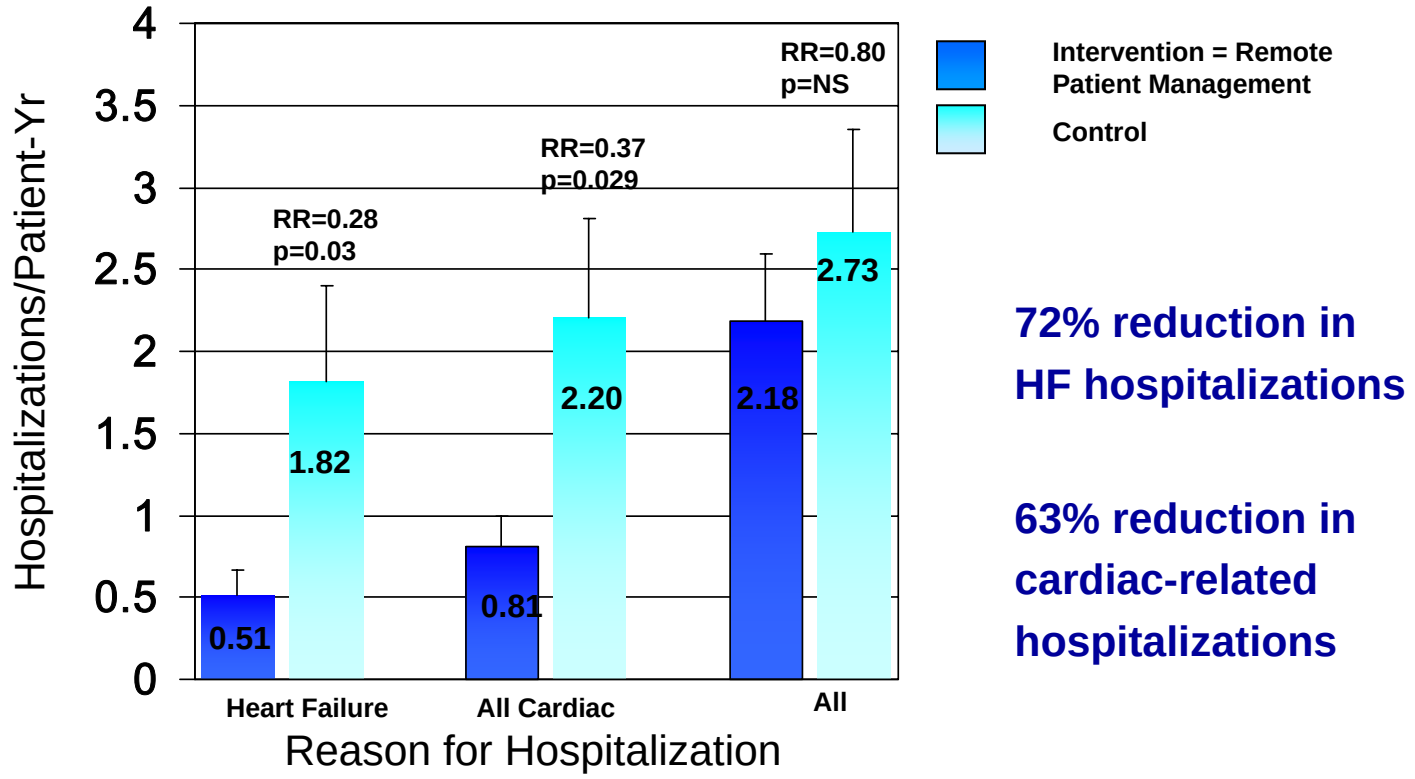
(Arch Pediatr Adolesc Med. 2002)

Care Coordination: Hypertension, Heart Failure, COPD, and Diabetes

Emergency Room Visits	▼ 40%
Hospital Admissions	▼ 63%
Hospital Bed Days of Care	▼ 60%
Nursing Home Admissions	▼ 64%
Nursing Home Bed Days of Care	▼ 88%

(Disease Management, 2002)

Frustrated Deployment of a Transformational Technology: Hospital-Led Implementation of Remote Patient Management



72% reduction in HF hospitalizations

63% reduction in cardiac-related hospitalizations

SPAN-CHF II: Tufts-New England Medical Center; Lahey Clinic; Beth Israel-Deaconess Medical Center; Rhode Island Hospital. Weintraub et al AHA 2005

The Early Adopter Experience: Veterans Health Administration

The VA's Care Coordination/ Home Telehealth (CCHT) program began in 2001.

VHA attributes the rapidity and robustness of its implementation to the "systems approach" taken to integrate the elements of the program.

Findings from 2006-07 comparative studies:

- 25% reduction in bed days of care
- 20% reduction in numbers of admissions
- 86% mean satisfaction score rating

A total of 43,430 patients have been enrolled since VHA implemented CCHT in 2003. VHA will increase these services 100% above 2008 levels to reach 110,000 patients by 2011 (only 50% of projected need).

Why Transformative Technologies Are Disruptive

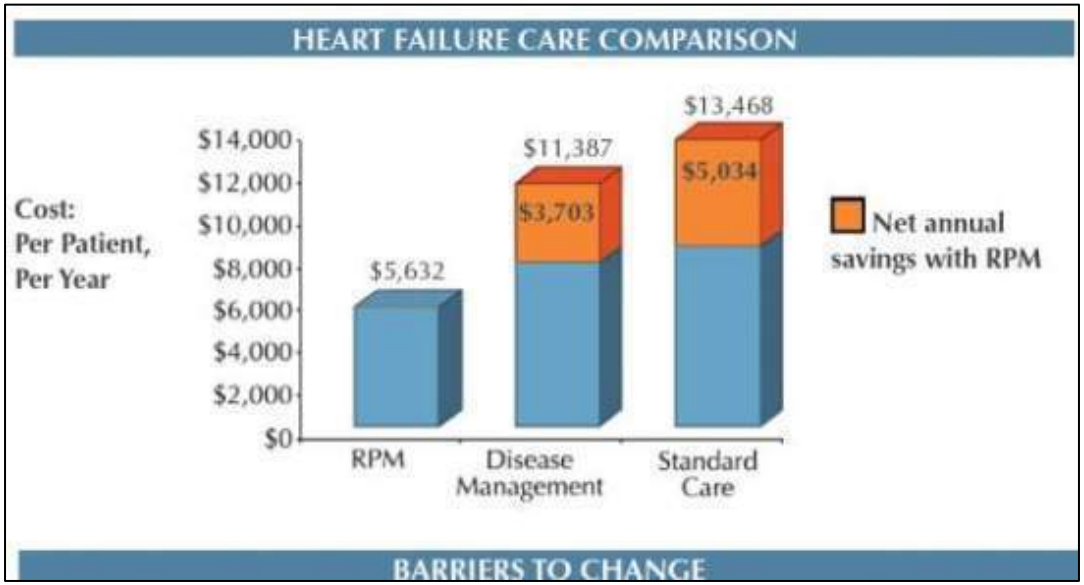
Transformative technologies enable a wide range of disruptive and positive changes in clinical care and administrative processes, *reducing net expenditures and improving the value of health care*.

Transformative Technologies are disruptive, and therefore more difficult to disseminate:

- They **reorganize care processes**
  - Disrupt workforce roles and interactions
  - Disrupt facility needs
  - Disrupt infrastructure support requirements – IT, pharmacy, ancillary services, home care
  - Disrupt standards for best practices, measures of quality and safety processes
- They **challenge existing business models**
  - Disrupt volume and revenue assumptions for hospitals, EDs, SNFs, home health agencies, home care
  - Disrupt contracting relationships between payors and providers
  - Provoke demand for gain sharing or other models for sharing savings, enabling investments

High Stakes: Potential RPM-Associated National Savings In CHF

The New England Healthcare Institute's Research Update: *Remote Physiological Monitoring* reports the following cost savings for all Class III and Class IV heart failure patients:



The net savings of RPM technology =

$3,703 / patient / year for those with disease management programs, and

$5,034 for those with standard care.

Barriers To Dissemination of Transformational Technologies

1. Lack of a framework for deploying, evaluating and disseminating technologies

Current initiatives:

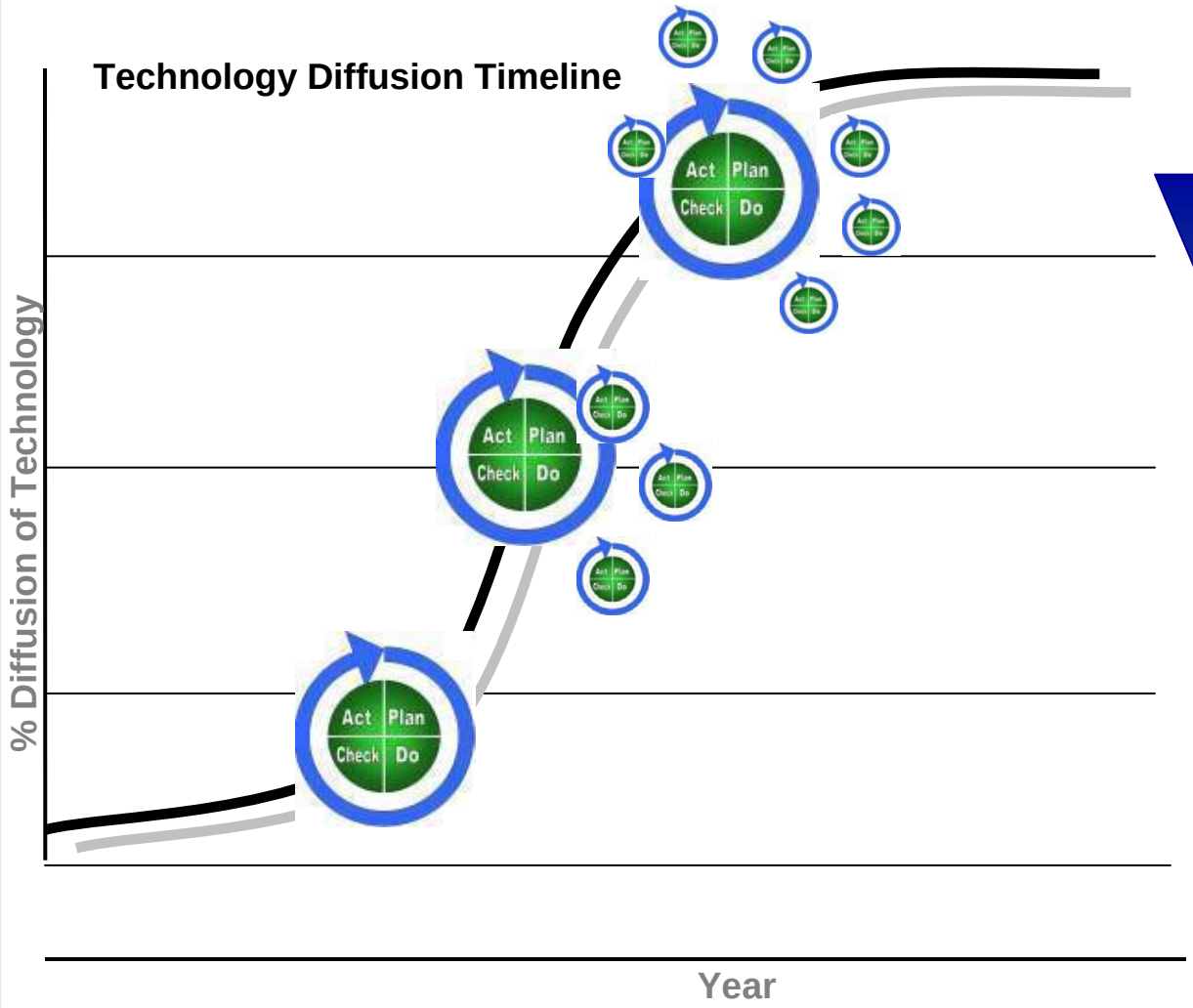
- are **multiple, parallel efforts**
- build upon **separate frameworks**
- have **limited collaboration**
- have little or no **evidence-based comparison** of results

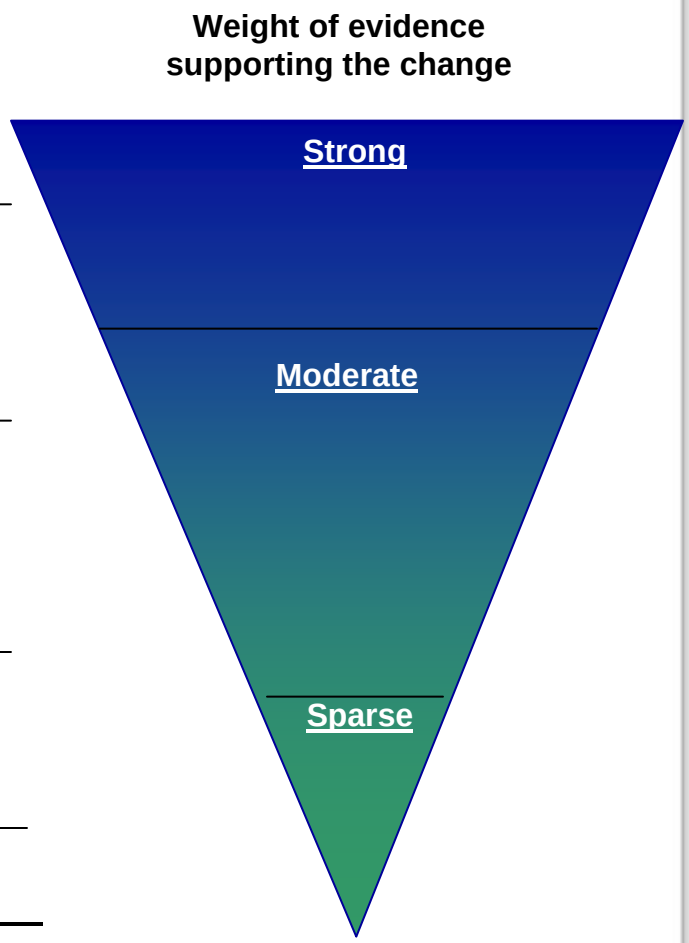
2. Failure to target disruptive levels of change, and incorporate enabling technologies

Example of an innovation, stated as a goal, enabled by technology:

To increase workforce productivity by 20% over 3 years, using remote patient management and medication management technologies.

Breaking Through: Rapid Innovation, Learning And Diffusion





Source: Everett Rogers Diffusion of Innovations, 1995

Molly Joel Coye, MD, MPH
Founder and CEO
415.537.6960 phone
415.537.6969 fax
mcoye@healthtech.org

Health Technology Center
524 Second Street, 2nd floor
San Francisco, CA 94107
www.healthtech.org

HealthTech: Technology and Transformation

A non-profit research organization and expert network that develops forecasts and planning tools for emerging technologies in healthcare, and works with a broad range of stakeholders to advance their adoption. Represents approximately 20% of hospital capacity in the U.S.

Created in response to the IOM Crossing The Quality Chasm report: an average of 17 years elapses between demonstration that a new technology represents a significant advance and the widespread adoption of that technology.

Our Vision:

- Innovations and technologies are adopted rapidly across the industry to make healthcare better and reduce the cost of care

Our Mission:

- To make healthcare better, safer, more satisfying and more affordable – by building partnerships across the industry to research and accelerate the adoption of transformative technologies

