

PCMH Cyber-Infrastructure: Critical Capabilities for Future Care Delivery Models

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Pranav P. Kothari, MD
Renaissance Health
E: PK@renhealth.net



Collaborating Authors

- Published: *Patient-Centered Medical Home Cyberinfrastructure* (American Journal of Preventive Medicine, May 2011; 40(5S2):S225-S233) in collaboration with Joseph Finkelstein, MD, PhD, Michael S. Barr, MD, Pranav P. Kothari, MD, David K. Nace, MD, Matthew Quinn, MBA
- Paper thematically based on panel discussion organized by the Agency for Healthcare Research and Quality at the Informatics for Consumer Health Summit – moderated by Teresa Zayas Caban, PhD.

Renaissance Health:

Catalyzing stakeholder partnerships to dramatically improve health – through targeted, financially sustainable interventions

Intensive Outpatient Care Innovation (IOC)

- Leading IOC planning and implementation
- Customized approach based on geography, market readiness, payer strategy
- E.g.: The Boeing Company, Oregon PEBB, etc.

Multi-stakeholder Collaboratives

- Organizing and leading collaboratives to implement new models
- Developing learning communities to share best practices, common challenges
- E.g. Oregon High Value Patient Centered Demonstration, Pacific Business Group on Health

Provider-sponsored IOC and PCMH-type models

- Implementing models with providers, as they embrace new reimbursement models
- **Renaissance Health Academy** provides complex care management training

Partnership development, rapid cycle care innovation, robust care management training, actionable information transparency strategy, provider change management

Problem 1

Little Innovation in Process of Care Delivery



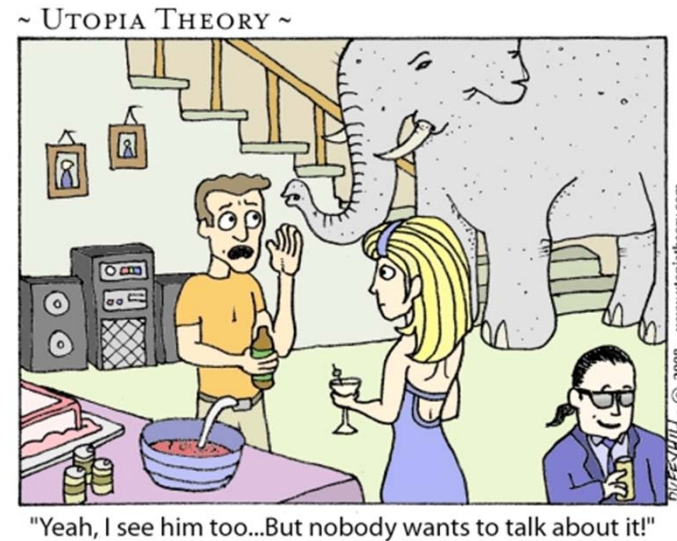
"We are carrying the 19th century clinical office into the 21st century world. It's time to retire it."

- Donald M. Berwick

Problem 2

The Current Model of Care is Unsustainable

- 9.8% annual rise in healthcare spend since 1970
- >7K expenditure on health per capita - by far the highest amongst developed nations
- Increasing cost-shifting from employer to employee
- Health insurance premiums rising faster than wages, resulting in increased systemic stress and 50+M uninsured
- Per capita spend unlikely to be lower with health reform legislation; pressure on payers, purchasers and individuals will be higher
- Increasing dialogue to share cost accountability with providers



Unstable and Unsustainable System

Problem 3

Usual Approaches to Change are Inadequate

Just try harder
Small P4P

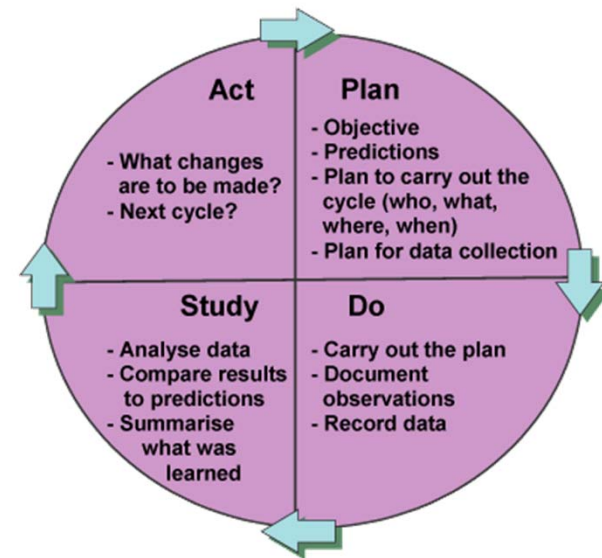
Incremental Improvement
PDSA/CQI/ Six sigma

Add to the work
Group visits, Email

Just add technology
Electronic Health Records

Wrap around
Disease management, case management

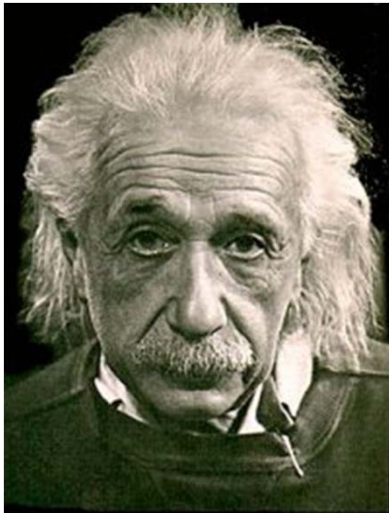
The PDSA Cycle for Improvement



Problem 4

Limited Success in Innovation Beyond the Usual *Highlighted by CMS Demos*

- 1993-2007 - >6 demonstrations targeted at reducing healthcare spend
 - Case Management
 - Coordinated Care
 - Disease Management
 - Health Support
 - Physician Group Practice
 - Care Management for High Cost Beneficiaries
- Only 3 of 20 programs show any reduction in high-cost utilization or overall cost of care
- Some moderate improvement in quality
- More recently, early medical home data limited or uneven; very little consistency in models, so difficult to isolate elements



“Insanity is doing the same thing over and over and expecting different results”

-Albert Einstein

Imperative for Action

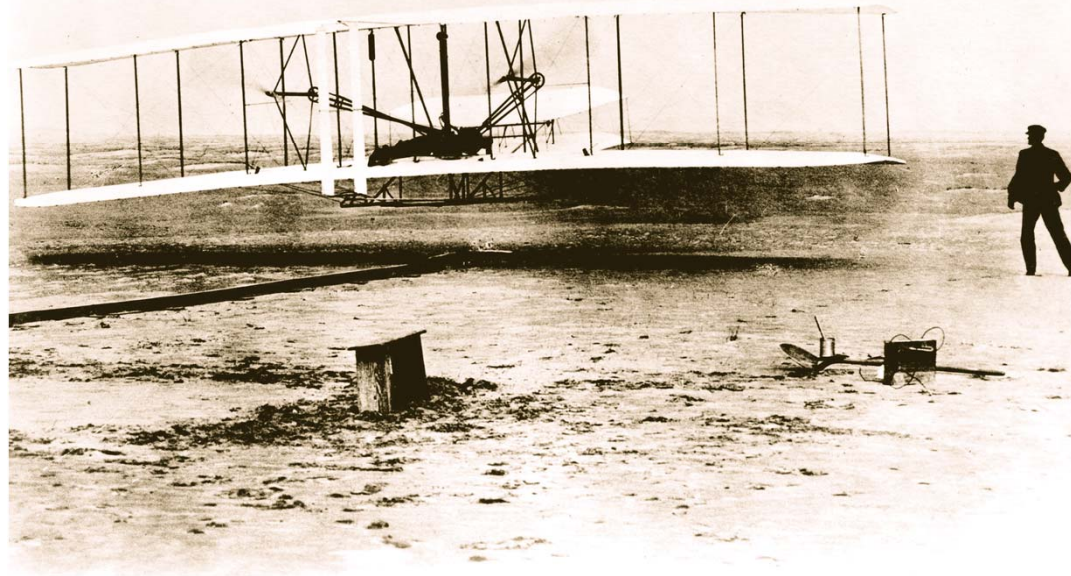
An Urgent Moment

- Current environment has shared pain-points necessary to synchronize all stakeholders
- Unique momentum for action towards new models of care/reimbursement
- We need to go beyond tweaking the existing infrastructure – technology, benefit design, care delivery model, reimbursement
- Risk of good innovation being muted due to implementation and operations
- Reimbursement increasingly moving down value-based paths; increasingly sharing accountability for quality and cost

The key to successful, sustainable innovation is new, more rational systems of care coupled with reimbursement transformation.

This success will depend on infrastructure that allows for standardized, data driven processes and medical decisions

A Game Changer



Essential Components of the PCMH

Basic Foundational Functions

- Provide easily accessible services during and outside normal business hours through multiple communication mediums
- Have systems to identify patients needing specific interventions and to manage population segments (e.g. complex health needs, post-hospitalization, etc.)
- Coordinate care through organized and efficient processes that facilitate timely bi-directional information exchange between health information databases
- Utilize key elements of technology (e.g. e-prescribing, clinical decision support, registries, secure e-mail, etc) to deliver safe, high quality, efficient health care
- Engage patients in developing action plans with trained healthcare professionals
- Track and trend performance of the practice and individual clinicians

Health Information Technology plays a major role in enabling the functions of a Patient Centered Medical Home, or any future state healthcare model.

Comprehensive HIT Infrastructure Key to Future Delivery Models

- Movement away from isolated IT application and towards comprehensive HIT infrastructure
- HIT must integrate into workflow
- HIT must enable the necessary functions of delivering care, managing the population; usability is key, structural capability alone not enough

Workflow and care delivery goals must drive HIT development, not vice versa

Many Challenges for HIT (especially EHR) Adoption

- Policy debates
- Cost-effectiveness issues
- Limitation and controversy around standards
- Interoperability issues
- Physician (and patient) acceptance
- Software glitches
- Limited interface with external data sources
- Lack of nimble customization
- Anchored in traditional visit-based model; many systems not able to easily do population or individual reporting, care managing and customization
- Silo-based; not fully integrated health information exchange (HIE)**

Highest value for EHRs will be harvested with deep HIE – truly providing a 360 degree view of the patient’s health across a continuum

Imperative for HIT (and HIE) Evolution

An Opportunity to Catalyze the Movement

- Current national dialogue highlighting the need for HIT and HIE
- New models of care delivery increasingly dependent on provider-payer partnerships
- Reimbursement models have more risk and shared savings opportunity
- These future models will require the partners/stakeholders to have more transparent, timely, actionable information exchange

We must accelerate the pace of information exchange and integration – as new models are launching now without the already-known technology requirements. Without improvements in comprehensive health information technology and exchange, we will not be able to achieve the quality, safety, experience and financial goals of these new models of care.

Capabilities of HIT to Support PCMH

- Collection, Storage, Management and Exchange of health information – clinical, administrative, personal
- Coordination and communication support and facilitation between patient and other members of care team – 1:1 or to groups
- Standardizing and automating workflow and processes for individual and population care management
- Capture data to enable individual and mass-customization for patient care – including beyond clinical data (e.g. preferences, social factors, literacy, etc.)
- Enable collection, storage, analytics and reporting on processes and outcomes for population, individuals, providers, segments, etc.

Capabilities of HIT to Support PCMH cont.

- Standardizing, evidence-based decisions, treatments and tests at the point of care for providers and at decision moments for patients
- Enable improved non-visit based access for consumers to receive care, information and advice from the right care team member
- Access to health information for consumers to be engaged and educated
- Enable self-management and care through coaching, monitoring, tools, communication, peer groups, etc.
- Capture service and relationship management information to improve consumer engagement, provider-patient relationships, health care experience

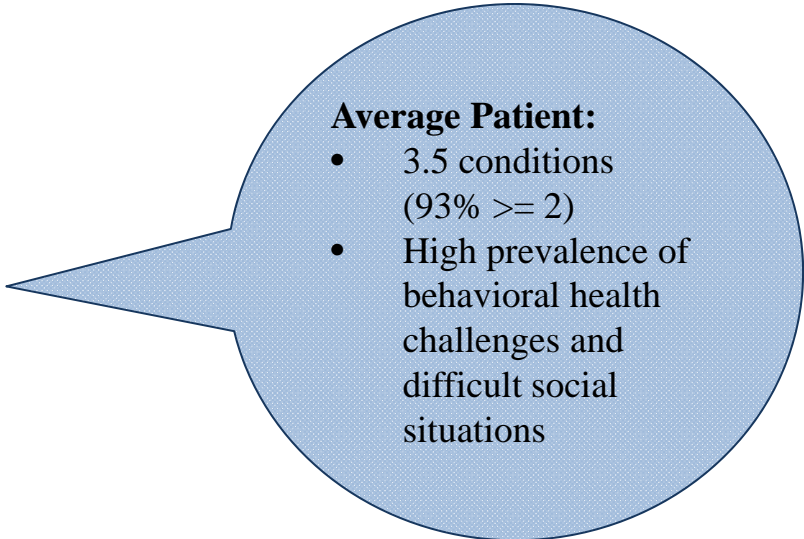
Case Examples– Intensive Outpatient Care

- **Boeing Company Intensive Outpatient Care Program (IOCP)**
 - >700 predicted highest risk for future utilization members enrolled in IOCP
 - Partnered with three medical groups to deliver intensive “medical home” elements of care
 - Sites paid a case rate PMPM for intensive care management
 - Results: 90th percentile quality, high levels of experience, higher productivity and self-efficacy, lower ED/Hospital and total cost
- **UNITE HERE/Atlanticare Special Care Center**
 - ~1000 highest risk members of population
 - Care team included 2 PCPs, health coaches, behavioralist, nutritionist, pharmacy – delivered intensive primary care
 - Global budget model
 - Results: significant increases in quality, patient experience and >12% drop in spend

Sample IOC Clinical Population Profile

| | |
|--------|------------|
| Height | 66 inches |
| Weight | 209 pounds |
| BMI | 36 |

| | |
|----------------|-----|
| Depression | 55% |
| HTN | 49% |
| Pain | 46% |
| Obesity | 40% |
| GI dx | 36% |
| CAD | 31% |
| Diabetes | 26% |
| Other Psych Dx | 24% |
| Asthma/COPD | 15% |
| Cancer | 5% |
| Neuro | 5% |
| Renal Dx | 3% |
| Liver Dx | 1% |



Average Patient:

- 3.5 conditions (93% \geq 2)
- High prevalence of behavioral health challenges and difficult social situations

IOC

Model in Brief

- Focused, high-intensity primary care for predicted highest cost 5-20% of population
- Team based model – Personal Nurse/Health coach, Primary Care Provider,, other team members working with small panel of patients
- Shared Action Plans make care more intentional, increase patient engagement and team accountability
- Integration with Specialists, behavioral health, social work services, pain management, physical therapy, etc. – in-office or virtual integration
- Coordinated care transitions and follow-up improve patient flow through episode and life cycle, reduce fragmentation
- Increased data transparency between health plan and medical groups

BUT, use of information platform limited due to interoperability and exchange issues – led to many manual work-arounds which limit scalability

Future HIT and HIE Vision

One-Stop Access to a Common Patient Record of Information

- Patient record and health-related information at point of need – wherever and whenever, by all critical stakeholders for the patient
- Value will be seen far beyond seeing available data; real high-value in the data enabling workflow functionalities, analytics, exchange of information
- Ultimately, robust HIT/HIE allows for more efficient, high quality, customized care delivery. Care will be experienced longitudinally, not episodically

Optimal Comprehensive Cyberinfrastructure

- **System:** national healthcare information infrastructure has to be established
- **Health-Organization:** interoperability of HIT components must be achieved – requiring standards
- **Provider:** exchange of clinical information should be supported by HIT; workflow needs to drive the HIT development
- **Patient:** user-friendly HIT tools must be accessible to enhance access, self-management and experience

This Will Be Hard

- Requires cooperation amongst stakeholders – with market demand likely ultimately driving HIT transformation
- Requires a paradigm shift from visit-based episodic IT development to future-state delivery system IT development
- Requires investment, especially during the transition
- Requires federal initiatives (and likely legislation) – both for HIT and for care delivery models

Key Points

- **Health Information Technology plays a major role in enabling the functions of a Patient Centered Medical Home, or any future state healthcare model.**
- **Workflow and care delivery goals must drive HIT development, not vice versa**
- **Highest value for HIT (including EHRs) will be harvested with deep HIE – truly providing a 360 degree view of the patient’s health across a continuum**
- **Current use of information platform limited due to interoperability and exchange issues – led to many manual work-arounds which limit scalability**

We must accelerate the pace of information exchange and integration – as new models are launching now without the already-known technology requirements. Without improvements in comprehensive health information technology and exchange, we will not be able to achieve the quality, safety, experience and financial goals of these new models of care.



Pranav P. Kothari, MD

Renaissance Health

One Broadway, 14th
floor

Cambridge, MA 02142

P: 617.682.3668

W:www.renhealth.net

E:PK@renhealth.net