Medical Home Renovations: A Patient-centered Medical Home Case Study

Stephen Tarnoff MD, Associate Medical Director, Group Health Cooperative
Right Care Initiative “University of Best Practices” Luncheon Series
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Medical Home Renovations…

- Revitalizing primary care: the medical home imperative
- The Patient-centered Medical Home: An Evolving Definition
- Medical Home Transformation: the Group Health Experience
- Spreading the Medical Home using Lean
The Importance of Primary Care

Ratings of Primary Care Strength and PYLL (OECD countries)

(* adjusted for age structure, GDP, mean income, and tobacco/alcohol.)

(Macinko et al, Health Serv Res 2003; 38:831-65.)
The burning platform of primary care

- Access to primary care difficult for many, particularly disadvantaged
- Quality of care remains mediocre with many gaps
- Payment systems are antiquated. Many functions are unrewarded
- Evidence-base has become unmanageable for individual physicians
- Primary care is an unattractive career choice. Burnout common
### Joint Principles of Patient-Centered Medical Home 2007

(ACP, AAFP, AAP, AOA)

1. Personal physician
2. Physician directed medical practice
3. Whole person oriented
4. Care is integrated & coordinated
5. Assures quality & safety
6. Enhanced access
7. Payment Reform
Medical Home: a Concept in Evolution

Reinvigorating Core Attributes of Primary Care
(access, longitudinal relationships, comprehensiveness, coordination)

System supports for Chronic Illness Care & Prevention
(info systems, practice redesign, self mgmt support, decision support)

Advanced information technologies
(EMRs, registries, reminders, patient portals)

Supportive physician payment methods
(promotes medical home goals, not simply volume)
The Chronic Care Model (CCM)

Informed, Activated Patient

Prepared, Proactive Practice Team

Improved Outcomes

(Wagner EH et al, Managed Care Quarterly, 1999. 7(3) 56-66)
Group Health’s Medical Home Experiment
About Group Health…

• Integrated health insurance & delivery system
• Founded in 1946
• Consumer governed, non-profit
• Membership: 628,000  Staff: 9,390
• Revenues (2008): $2.8 billion

• Multispecialty Group Practice
  • 26 primary care medical centers
  • 6 specialty units, 1 maternity hospital
  • 960 physicians
• Contracted network
  • > 9,000 practitioners, 39 hospitals

• Group Health Research Institute
  • 32 investigators
  • 235 active grants, $34 million (2008)
A little history....

• Since its origin, Group Health organized around primary care

  Defined practice populations  Multi-disciplinary teams
  Specialty care gatekeeping  Salaried physicians

• In 2000s multiple reforms to improve access, efficiency, productivity

  “Advanced access”  Same-day appointing
  Leaner primary care teams  Direct specialty access
  RVU-based productivity incentives

• $40 million invested in electronic clinical information systems

  System-wide EMR
  Patient portal with secure messaging & lab results access
  Decision support tools, reminders & alerts

MyGroupHealth adoption

150,394 Enhanced Services Members as of March 24, 2008

- 160,000
- 128,000
- 96,000
- 64,000
- 32,000

MyGroupHealth “Big Bang”
08/14/2003

47% of Group Health patients access their care teams online
The medical home imperative

Utilization Trends 1997-2005 by Quarter

Access & Efficiency Reforms

Primary Care Visits

Specialist Visits

Inpatient Days

ER Visits

Inpatient Admits

Frequency

The medical home imperative

Inpatient & ER Utilization Trends 1997-2005 by Quarter

Access & Efficiency Reforms

Inpatient Days

ER Visits

Inpatient Admits

Effectiveness of care

(% of women aged 21-64 with Pap Test in last 3 years.)

Cervical Cancer Screening (HEDIS)

(% of women aged 21-64 with Pap Test in last 3 years.)
Effectiveness of care

Childhood Immunization Combo2 (HEDIS)

(\% of 2 year olds immunized with DTaP/DT, Polio, MMR, HiB, HepB and VZV.)
Increasing primary care physician burnout

“...the way in which [care] is structured, it has shifted such an increased amount of work onto primary care that it is not sustainable ... I'm actually looking to get out of primary care because I can no longer work at this pace.”

“The burnout rate among my colleagues is huge ... those of us that have managed to retain some semblance of balance do it by almost unacceptable levels of compromise, either for ourselves or what we define as good enough care.”

(Tufano et al, JGIM 2008;23:1778-83)

Looming primary care workforce crisis

• Many MD positions remained unfilled
• Shift to part-time practice
• Primary care MDs retiring earlier than specialists
• Most common reason for employment separation: high workload
The medical home imperative

There has to be a better way!
The **relationship** between the primary care clinician & patient is at our core; the entire delivery system will orient to promote & sustain.

The primary care clinician will be a leader of the clinical team, responsible for **coordination** of services, and together with patients will create **collaborative care plans**.

Care will be **proactive** and **comprehensive**. Patients will be **actively informed** and encouraged to participate.

**Access** will be centered on patients needs, be available by various modes, and maximize the use of technology.

Our clinical and business systems are aligned to achieve the most **efficient**, **satisfying** and **effective** experiences.
Revitalizing primary care

PCMH design:

Panel size
2,300 → 1,800

Appointments
30 min.
20 min.

Clinical teams

Desktop time

E-technology
Medical home change components

**Point-of-care changes**
- Calls redirected to care teams
- Secure e-mail
- Phone encounters
- Pre-visit chart review
- Collaborative care plans
- EHR best practice alerts
- EHR prevention reminders
- Defined team roles

**Patient-centered outreach**
- ED & urgent care visits
- Hospital discharges
- Quality deficiency reports
- e-health risk assessment
- Birthday reminder letters
- Medication management
- New patients

**Management & payment**
- Team huddles
- Visual display systems
- PDCA improvement cycles
- Salary only MD compensation
Medical home change components

**PCMH Model**

**Point-of-care changes**
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Group Health Research Institute conducted a 2 yr prospective, before-and-after evaluation comparing the pilot with 19 other Group Health clinics in western Washington State.
Medical home pilot evaluation

Evaluation measures:

- Patient experience
- Staff burnout
- Quality
- Utilization
- Cost
The Group Health Medical Home
At Year Two: Cost Savings, Higher Patient Satisfaction, And Less Burnout For Providers

**ABSTRACT**
As the patient-centered medical home model emerges as a vehicle to improve the quality of health care and to control costs, the experience of Seattle-based Group Health Cooperative with its medical home pilot takes on added importance. This paper examines the effect of the medical home prototype on patients' experiences, quality, and clinician burnout over two years. Compared to other Group Health clinics, patients in the medical home experienced 29 percent fewer emergency visits and 5 percent fewer hospitalizations. We estimate total savings of $10.3 per patient per month twenty-one months into the pilot. We offer an operational blueprint and policy recommendations for adoption in other health care settings.

The patient-centered medical home has emerged rapidly as the main policy vehicle to reinvigorate U.S. primary care. The widely endorsed 2007 joint principles of the patient-centered medical home, developed by a consortium of professional organizations, emphasize the attributes of primary care. These include access to care, long-term relationships with health care providers, and comprehensiveness and coordination of care. The principles also embrace the health professional and organization grounded in quality improvement staff, key electronic health record features, and operational methods for transformation to this new practice model.

Several questions about medical homes remain unanswered. These include how quickly the anticipated improvements emerge and how operational definitions apply to practices with different settings, patient mix, and cultures. Since 2006, Group Health Cooperative, a non-profit, consumer-owned, integrated health insurance and care delivery system based in Seattle, Washington, has pioneered a medical home redesign that relies on its existing electronic health record system. We report here the experience of the 2006 Group Health Cooperative demonstration project (GHC-DP) in a sample of primary care clinics.

GHC-DP: Goals and Methods
Group Health Cooperative, a non-profit, consumer-owned health plan serving Washington’s largely upper-middle class health care market, operates three clinics in the Seattle area as part of a three-practice network. The GHC-DP was designed to improve the overall efficiency and quality of care delivered to Group Health’s member population of 250,000. The project was launched in January 2006 in a single clinic, and in January 2007, the other two practices. The original grant was renewed in 2007 and again in 2009.

GHC-DP: Impact on Cost, Quality, and Burnout
To evaluate the impact of the medical home model, an intervention team was convened from a pool of qualified care team members. The intervention team consisted of a group of primary care physicians, nurses, medical assistants, and administrative staff. The intervention team was responsible for ensuring the successful implementation of the medical home model.

GHC-DP: Lessons Learned
The patient-centered medical home model is a complex system of care that requires a major cultural shift in how care is delivered. The medical home model requires a commitment from all parties involved, including primary care physicians, nurses, medical assistants, and administrative staff. This requires a significant investment of time and resources. The medical home model also requires a commitment from patients, who must be willing to engage in a long-term relationship with their primary care physician and be willing to participate in the care planning process.

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Reid RJ et al, Health Affairs 2010;29(5):835-43
Larson EB et al, JAMA 2010; 306(16):1644-45
Reid RJ et al, Am J Manag Care 2009;15(9):e71-87
Selected change components

Year 1: 94% more emails, 12% more phone consultations, 10% fewer calls to consulting nurse

Year 2: Significant changes persisted

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secure email messages</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>Telephone encounters</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>Consulting nurse calls</td>
<td>↓</td>
<td>↓</td>
</tr>
</tbody>
</table>

Compared to controls: ▲ Medical Home significantly higher ▼ Medical Home significantly lower ↔ Difference not significant
## Patient experience

Significantly higher scores for patients at Medical Home Clinic

<table>
<thead>
<tr>
<th>Quality of patient-doctor interactions</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared decision making</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordination of care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helpfulness of office staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient activation/involvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goal setting/tailoring</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Compared to controls:  
- \(\uparrow\): Medical Home significantly higher  
- \(\downarrow\): Medical Home significantly lower  
- \(\leftrightarrow\): Difference not significant
Composite quality gains significantly greater for patients at Medical Home clinic across 22 indicators

<table>
<thead>
<tr>
<th>Mean difference of changes between pilot and control clinics</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% performance</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>75% performance</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td>50% performance</td>
<td>↑</td>
<td>↑</td>
</tr>
</tbody>
</table>

Compared to controls:  
- ↑ Medical Home significantly higher  
- ↓ Medical Home significantly lower  
- Difference not significant
Group Health ranks **top 48th** in the nation in the National Committee for Quality Assurance’s (NCQA) Health Insurance Plan Rankings 2010-11-Private. We’re up 28 positions from 2009-2010. Group Health is **ranked highest in its service area in Washington.**

Group Health is in the **top five percent** of Medicare plans nationally, according to the NCQA’s Health Insurance Plan Rankings 2010-11-Medicare. Group Health is the **11th highest ranked** Medicare plan, and this marks the third year we’ve been among the **top 15 plans** in the country.

NCQA awarded all 26 clinic locations of Group Health Medical Centers its **highest recognition status** for Physician Practice Connections®-Patient Centered Medical Home™

Group Health Medical Centers earned **more “above average” ratings than 76 other medical groups** in the Puget Sound Health Alliance’s 2010 Community Checkup.

Group Health HMO Medicare received **4 out of 5 stars** on Medicare Five-Star Quality Rating System in 2010.
HEDIS Clinical Outcomes--Cardiovascular

Medicare Controlling High Blood Pressure

Medicare Cholesterol Management for Patients with Cardiovascular Conditions
LDL-C Control (<100mg/dL)
Staff burnout

**Year 1:** Marked improvement in burnout levels at Medical Home

**Year 2:** Continued better scores at Medical Home; controls slightly worse

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional exhaustion</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td>Depersonalization</td>
<td>↔</td>
<td>↔</td>
</tr>
<tr>
<td>Lack of personal accomplishment</td>
<td>↔</td>
<td>↔</td>
</tr>
</tbody>
</table>

Compared to controls: ↑ Medical Home significantly higher, ↓ Medical Home significantly lower, ↔ Difference not significant
**Utilization**

**Year 1:** 29% fewer ER visits, 11% fewer preventable hospitalizations, 6% fewer but longer in-person visits

**Year 2:** Significant changes persisted

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care visits (in person)</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td>Emergency/urgent care use</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td>Preventable hospitalizations</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td>Total hospitalizations</td>
<td>↔</td>
<td>↓</td>
</tr>
</tbody>
</table>

Compared to controls:  
- ↑ Medical Home significantly higher
- ↓ Medical Home significantly lower
- ↔ Difference not significant
Year 1: No significant difference in total costs between Medical Home and control clinics.

Year 2: Significant utilization changes persisted. Lower patient care costs approached stat significance (~$10 PMPM; p=0.08)
Our learnings so far

*It is possible to improve outcomes, lessen burnout, and reduce costs but:*

- Investments in primary care are critical
- Requires fundamental change that is not easy.
- Physicians & care teams need to “own” the changes
- Including patient voices helps ground your efforts
- IT must be embedded in team workflows
- Capable & aggressive management
Our learnings so far

- **Financing:** investments made need to align with savings recouped

- **Reimbursement:** payments need to reward medical home activities & outcomes, not just volume

- **Education:** new skills needed (team work, quality improvement, behavioral medicine, virtual medicine)

- **IT:** meaningful use needs to incorporate patient perspectives
Based on pilot results, Group Health decided to invest $40 million and “spread” the medical home to 25 other clinics.

But new questions emerged:

- What were the key components of the redesign?
- Can they be generalized?
- Can similar benefits accrue when clinics don’t invent the work?
- What techniques & tools should we use to spread?
How Was Medical Home Spread?

**Design Process**
- RPIW’s
- Dissected pilot experience
- Designed standard work by engaging frontline teams

**Spread Pilot**
- Testing and improving the standard work elements at 3 other clinics
- Learning best practices to help future clinics with spread

**Spread**
- Each element rolled out across clinics (10 wks)
- Each element implemented before the next started
1. Staged spread of practice change modules

Virtual Medicine
Care Management
Visit Preparation
Patient Outreach

2. Supported by changes to mgmt, staffing, & MD payment

Call Management  Team Huddles  Standard Mgmt Practices
Enhanced Staffing Model  Value-based MD Payment Model

Standardization & Spread using LEAN Techniques & Tools
AFFORDABLE EXCELLENCE
Implementing the Medical Home Value Stream

- Enrollment Costs
- Outcomes // Patient & Staff Satisfaction

Outreach

Standard Work

Call Management

Virtual Medicine
- Phone, Secured Messaging

MORE TIME

MHM
Advancing Primary Care

Prepared for the Visit

Disease Management

Decrease Panels
e.g. 1,800

MORE TIME

Access: Visit Demand
**Medical Home staffing**

<table>
<thead>
<tr>
<th>Work Elements</th>
<th>Per 10,000 Enrollees</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physician</strong></td>
<td>5.6 FTE</td>
</tr>
<tr>
<td>Medical management</td>
<td></td>
</tr>
<tr>
<td>virtual medicine, care plans for chronic disease</td>
<td></td>
</tr>
<tr>
<td><strong>PA/NP</strong></td>
<td>1.5 FTE</td>
</tr>
<tr>
<td>Acute access, care plan support, prepared visit</td>
<td></td>
</tr>
<tr>
<td><strong>RN</strong></td>
<td>1.2 FTE</td>
</tr>
<tr>
<td>Chronic disease management for acute and unstable, transition</td>
<td></td>
</tr>
<tr>
<td>management (inpatient/SNF)</td>
<td></td>
</tr>
<tr>
<td><strong>LPN</strong></td>
<td>2.0 FTE</td>
</tr>
<tr>
<td>Incoming, outgoing advice; ED/UCC follow-up</td>
<td></td>
</tr>
<tr>
<td><strong>MA</strong></td>
<td>5.6 FTE</td>
</tr>
<tr>
<td>Visit preparation, in visit, post visit follow-up, addresses prevention and</td>
<td></td>
</tr>
<tr>
<td>treatment care gaps</td>
<td></td>
</tr>
<tr>
<td><strong>Pharmacist</strong></td>
<td>1.0 FTE</td>
</tr>
<tr>
<td>High risk, complex medication management, medication education, medication</td>
<td></td>
</tr>
<tr>
<td>reconciliation</td>
<td></td>
</tr>
</tbody>
</table>

*All outreach by any member of the team is comprehensive. For example: pharmacist call regarding medications address prevention care gaps (cancer screening).*
In Process Measures
In Process Measures by clinic and element

By element

By clinic
## Reinventing Primary Care - Group Health Medical Home Model

### Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Target</th>
<th>% Change</th>
<th>CM</th>
<th>PV</th>
<th>CDM</th>
<th>VM</th>
<th>CM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Call Resolution</td>
<td>Target: 85%</td>
<td>% Decrease from Prior: 5%</td>
<td>BVU</td>
<td>90%</td>
<td>100%</td>
<td>3/3</td>
<td>1/3</td>
</tr>
<tr>
<td># of MDs w/ 1 or more phone visits</td>
<td>Target: 65%</td>
<td>% Increase from Prior: 5%</td>
<td>BRN</td>
<td>100%</td>
<td>76%</td>
<td>5/7</td>
<td>6/7</td>
</tr>
<tr>
<td>% Members w/ Enhanced Access</td>
<td>Target: 65%</td>
<td></td>
<td>CDA</td>
<td>80%</td>
<td>74%</td>
<td>2/3</td>
<td>0/3</td>
</tr>
<tr>
<td>% Members w/ Enhanced Access Sessions</td>
<td>Target: 65%</td>
<td></td>
<td>DOW</td>
<td>80%</td>
<td>91%</td>
<td>4/6</td>
<td>6/6</td>
</tr>
<tr>
<td># of MDs, 1st Visit, 2nd Visit</td>
<td>Target: 100%</td>
<td>% Increase from Prior: 5%</td>
<td>EVT</td>
<td>70%</td>
<td>100%</td>
<td>8/9</td>
<td>7/9</td>
</tr>
<tr>
<td># of MDs w/ Completed Pre-Visit Prep</td>
<td>Target: 100%</td>
<td></td>
<td>FAC</td>
<td>70%</td>
<td>90%</td>
<td>10/10</td>
<td>7/8</td>
</tr>
<tr>
<td>% Completed Joint Plan</td>
<td>Target: 100%</td>
<td></td>
<td>FED</td>
<td>80%</td>
<td>81%</td>
<td>no data</td>
<td>3/7</td>
</tr>
<tr>
<td># of MDs at 80% - Addressing Identified Care Needs</td>
<td>Target: 100%</td>
<td></td>
<td>FHC</td>
<td>90%</td>
<td>69%</td>
<td>21/24</td>
<td>21/24</td>
</tr>
<tr>
<td># of MDs at 100%</td>
<td>Target: 100%</td>
<td></td>
<td>KNT</td>
<td>80%</td>
<td>91%</td>
<td>5/5</td>
<td>4/5</td>
</tr>
<tr>
<td>% Access Within 36 Hours</td>
<td>Target: 90%</td>
<td></td>
<td>LWH</td>
<td>70%</td>
<td>57%</td>
<td>5/9</td>
<td>7/9</td>
</tr>
<tr>
<td>% Access Within 36 Hours</td>
<td>Target: 90%</td>
<td></td>
<td>LYN</td>
<td>70%</td>
<td>93%</td>
<td>6/7</td>
<td>7/7</td>
</tr>
<tr>
<td>% Access Within 36 Hours</td>
<td>Target: 90%</td>
<td></td>
<td>NGT</td>
<td>90%</td>
<td>82%</td>
<td>12/18</td>
<td>15/18</td>
</tr>
<tr>
<td>% Access Within 36 Hours</td>
<td>Target: 90%</td>
<td></td>
<td>NSH</td>
<td>80%</td>
<td>90%</td>
<td>6/6</td>
<td>5/5</td>
</tr>
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Closing the gaps....
AHRQ R18 Grant – Mixed Methods Evaluation

Quantitative Component
- 60 month interrupted time series design
- Effect of PCMH transformation on cost, quality & staffing

Qualitative Study
- Staff & leader interviews, direct observation & patient focus groups
- Organizational & contextual effects on PCMH transformation
- Effect of PCMH transformation on patient experiences
Thank you!!
Steve Tarnoff
Tarnoff.s@ghc.org
1. What aspects of medical home model is your organization considering adopting?

2. What are the main barriers to adoption?

3. What do you see are the key drivers of improved BP, lipid and A1c control that are incorporated in the medical home model?