Primary Care:
Why we need it.
New models of delivery.
Chronic disease management.
Care coordination.

Rob Janett
Assistant Professor of Medicine
Harvard Medical School
"If he wasn’t an internist he is now."

Primary Care

• Most providers trying to do their best for their patients
• US is behind developed nations in health outcomes
• Big changes coming with health reform
Definition of Primary Care

- First contact care
- Continuity over time
- Comprehensive
- Coordination with other parts of the healthcare system

** Barbara Starfield
US primary care workforce

- 240,000 primary care physicians represent 35% of physician workforce engaged in patient care
- 57% of all patient visits were to primary care
- Only ~6% of healthcare spending
Access to Primary Care

• 65 million Americans live in primary care shortage areas
• 1 out of 14 US medical students choose primary care
• Lifelong earning for primary care is ~$2 million
  – ~$5 million for cardiologist
Outdated fee-for-service payment system

• Paid only for “in-person” visits
• Email and phone can handle many patient concerns
• Does not compensate for time spent in care coordination
• Good primary care can save the system large amounts of money.
  – Should primary care share in the savings?
Do the math...

• Panel size 2000 patients/doctor
• 17.4 hours per day performing all recommended acute, chronic and preventive care
• It does not add up
• Cries out for redesign:
  – Increase the follow-up interval
  – Delegate more activities to non-MD staff
  – Use the phone and the internet
Origins

• All care was once primary care
  – Rural, horse-and-wagon, home-centered, comprehensive (there was nothing else!) and unregulated

• Technology
  – Automobile, telephone, the modern hospital

• Rise of specialties with the rise of new medical knowledge
  – Criticized for failure to consider the patient as a whole
  – First specialty was ophthalmology (1916)
Origins of Board Certification

• Pediatrics in 1933
• Internal Medicine in 1936
  – View of a healthcare system with the generalist at the center
• Certification a special honor for a few elite
  – Few residency positions
  – Most practice was ‘general practice’
• Changes after World War II
COULD BE ANYTHING.

WAY TOO GENERAL PRACTITIONER
‘Modern’ primary care

• Late 1960s.
• American Academy of Pediatrics in 1967 proposed the “medical home”
  – Accessible
  – Accountable
  – Comprehensive
  – Integrated
  – Patient-centered
Impact on quality and costs of healthcare

• Specialist care costs more
• Specialists more likely to perform recommended care in their narrow specialty and use new technology
  – (with our without proven effectiveness)
• Conflicting data on health outcomes from chronic conditions
Resource use in primary care

- Fewer diagnostic tests
- Fewer procedures per capita
- Equal or lower health care costs

When compared to care delivered by specialists
Usual source of care

• With a usual source of care, patient is more likely to receive recommended preventive services
• Enduring relationship with patient associated with better quality
• Better patient experience scores, lower utilization, lower costs of care.
  – Lower use of ER for non-urgent conditions
  – Lower rates of hospital admission
Regional variations

• High primary : specialty care ratio
  – Found in lower cost regions of the USA
  – Better health outcomes
  – Lower mortality
  – Fewer ER visits
  – Fewer hospitalizations
  – Fewer procedures per capita
  – Lower cost
South Florida

- Highest cost region of the USA
- Higher mortality
- Lower primary : specialty care ratios
International comparisons

• OECD countries
  – Higher rates of health system primary care orientation → better health outcomes and lower costs
  – Low or no copayments for primary care
  – Required first contact with primary care
  – Guidelines to facilitate care coordination between providers
Models of high performance

• Group Health Cooperative
  – $10 million investment in 26 clinics $40 million per year in overall cost savings

• Geisinger Clinic
• Mayo Clinic
• Kaiser Permanente

Health reform legislation enables a variety of experiments in practice re-design
Five principles of primary care practice reform

• Paradigm shift → from individual to population.
  – The care team has the responsibility. Team is focused on this with appointments today and those who are not being seen.

• Encounter types
  – Not all care requires a 15 minute face to face visit.

• Stratify the panel.

• How physicians spend time

• Reimbursement
New expectations

• Computerized information
• Regular measurement of care and quality
• Focus on chronic and preventive care
• Concern for the entire population of patients
• Patient-centered culture
  – Putting the needs of the patient above all else
Cambridge Health Alliance
Introduction

• Primary service area is the region north and west of Boston, Massachusetts

• More than 50% of our patients speak a primary language other than English

• Largest proportional provider of uncompensated care in Massachusetts (33%)

• Highly public payer mix (82%)
Cambridge Health Alliance Highlights

- Tenth largest healthcare system in Massachusetts
- Academic public health care system
  - 15,000 hospital admissions
  - 600,000 outpatient visits
  - 99,000 emergency room visits
- Largest acute mental health provider in state
- Community-based primary care and mental health services at over 20 sites
  - 90,000 primary care patients
Academic, Public, Community- Focused

• Training programs in internal medicine, adult psychiatry, child/adolescent psychiatry, clinical psychology, social work, nursing, occupational therapy, and podiatry

• Cambridge Public Health Department, Somerville Health Agenda, Everett Community Health Assessment, and the Institute for Community Health

• Network Health - a statewide managed Medicaid health plan and Commonwealth Care plan
Hospital Network

3 campuses all with 24-hour Emergency Services and 2 with inpatient services

- Primary & Secondary Care Services
- Primary Service Area (PSA): 7 communities including Cambridge, Somerville, Everett, Malden, Chelsea, Revere, Winthrop
- Single License and Single Joint Commission Accreditation
- Serve patients from over 230 communities
- 2,800 employed FTEs
Cambridge Health Alliance Physicians

Alliance serves as employer and contractor for MD services

- Physician services organization:
  - Provider Enrollment
  - Billing
  - Claims Management
  - Malpractice Insurance
  - Human Resource Support & Recruitment
# CHA Physicians

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total employed MDs</td>
<td>321</td>
</tr>
<tr>
<td>Contracted private MDs</td>
<td>99</td>
</tr>
<tr>
<td>Leased MDs</td>
<td>43</td>
</tr>
<tr>
<td>Primary care</td>
<td>89</td>
</tr>
<tr>
<td>Med/Surg specialists</td>
<td>143</td>
</tr>
<tr>
<td>Psychiatry/psychology</td>
<td>89</td>
</tr>
<tr>
<td>Mgd care contracts</td>
<td>32</td>
</tr>
</tbody>
</table>
Our patients: culturally diverse

Source: US Census Bureau, Census 2000, Table DP-1
More than HALF our patients speak a LANGUAGE OTHER THAN ENGLISH

PC Patients by Language

2005

- English
- Spanish
- Portuguese
- Haitian Creole
- Other
Future directions for CHA

• Can no longer rely on subsidies
• Seeking global capitation payments as an Accountable Care Organization
• Patient Centered Medical Homes
• Key partnership(s) with tertiary hospital(s)
• Model program with highest risk patients under Network Health Alliance
  – care planning and management for 2000 complex patients, with reduction in unnecessary care and costs and improved health outcomes
Substantial Quality Gap in US Healthcare System

• We know what works. But what is actually done?
• Recommended care given only 54.9% of the time.
  – acute: 53.5%; chronic: 56.1%; preventive: 54.9%
• Wasted opportunities to prevent serious illness and to treat chronic illness to avoid morbidity.

The “Defect Rate” in the technical quality of US health care is approximately 45%
The Case

- Large premalignant adenomatous polyp found in 2002. Close follow up advised.
- No further colon cancer screen in five years
- Malignant entero-cutaneous fistula in 2007
- Multiple hospitalizations, XRT, long rehab stay, colostomy, family angst, pain and suffering, disability, & cost.
## Actual Costs of Medical Treatment

<table>
<thead>
<tr>
<th>Service Category</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inpatient Hospital</td>
<td>$37,008</td>
</tr>
<tr>
<td>Outpatient Hospital</td>
<td>$11,767</td>
</tr>
<tr>
<td>Ambulance - Land</td>
<td>$7,988</td>
</tr>
<tr>
<td>Skilled Nursing Facility</td>
<td>$4,780</td>
</tr>
<tr>
<td>Patient’s Home</td>
<td>$3,788</td>
</tr>
<tr>
<td>Emergency Room - Hospital</td>
<td>$2,074</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$67,404</strong></td>
</tr>
</tbody>
</table>

**vs. costs of:**

- Colonoscopy with biopsy = $962
- Colectomy = ~$5600
CHA ‘Planned Care’ innovation

• Designed to make care more reliable
• Population and outcomes focused
• Data-driven
• Re-assign jobs
• Make the life of a primary care provider better
• Improve patient experience
HOW we implemented planned care?

By:

• Redesigning care processes
• Providing evidence-based care and “best practices”
• Using information technology
• Increasing teamwork
• Activating patients in self-care of chronic disease
WHO benefits?

- Approximately 4,000 adults with diabetes receiving care at CHA
- Approximately 2,400 children with asthma receiving care at CHA
- Approximately 15-20% of adults receiving primary care at CHA with depression
- Patients with other chronic health conditions
- Patients needing preventative screening
- Providers who are otherwise drowning in paperwork
Key components of Planned Care

- Self Management
- Delivery System Design
- Decision Support
- Information Technology
- Community Linkages
- Health Care Organization and Infrastructure
Re-design

- **Self-Management**
  - Activating patients and families in self management of their health/chronic illness (e.g., patient/family action plans & behavioral goal setting)

- **Delivery System Redesign**
  - Building and extending the multidisciplinary care team
    (i.e. new roles: Planned Care Site Coordinator; think beyond the health centers and include school nurses, community volunteer health advisors)
  - Group visits for education, support and medical visits
Clinical Information System: the foundation of effective Planned Care

Identifies: *who are our patients?*

Identifies: *what do they need?*

– 2002: Implemented a web-based registry that supported proactive patient care and performance feedback to care team

– Extended the registry network to enable care management beyond the practice site (e.g. schools)

– 2005: Migrated to EPIC (electronic record)
<table>
<thead>
<tr>
<th>C</th>
<th>Age</th>
<th>Telephone</th>
<th>Last Visit PCP Date</th>
<th>Next Visit PCP</th>
<th>Next Visit PCP Date</th>
<th>Eye Exam Date</th>
<th>Last LDL Date</th>
<th>Last LDL</th>
<th>Last A1c</th>
<th>Last A1c Date</th>
<th>Last Malbumin Date</th>
<th>Last Malbumin</th>
<th>Last BP Date</th>
<th>Last BP</th>
<th>Last PHQ9 Date</th>
<th>Last PHQ9</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>40</td>
<td>617-240-9906</td>
<td>12/05/07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>53</td>
<td>617-389-0118</td>
<td>12/05/07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>81</td>
<td>617-625-4914</td>
<td>10/01/07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>51</td>
<td>617-628-7614</td>
<td>11/30/07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>53</td>
<td>978-667-9747</td>
<td>10/17/07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>28</td>
<td>617-387-3493</td>
<td>11/10/07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>53</td>
<td>857-888-9639</td>
<td>01/09/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>86</td>
<td>781-771-5473</td>
<td>01/17/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>40</td>
<td>617-417-5683</td>
<td>12/27/07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>60</td>
<td>617-625-5658</td>
<td>11/17/07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>43</td>
<td>617-625-3843</td>
<td>02/12/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>63</td>
<td>617-201-6251</td>
<td>02/11/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>74</td>
<td>617-628-2460</td>
<td>12/12/07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>71</td>
<td>617-628-4688</td>
<td>10/22/07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>62</td>
<td>781-391-3802</td>
<td>11/06/07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>68</td>
<td>617-776-3716</td>
<td>01/24/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>58</td>
<td>617-460-5219</td>
<td>11/15/07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>39</td>
<td>857-204-2949</td>
<td>02/12/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>51</td>
<td>781-322-8631</td>
<td>01/09/08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
• Decision Support
  – Implementing evidence based care and embedding best practice alerts in the EMR

• Community
  – Building on our strong community linkages through communication with our 200+ volunteer health advisors
  – Collaborating with schools, senior centers, churches, Neighborhood Diabetes Shoppe
Childhood Asthma:
% Patients with Asthma Admissions

Goal <=0.5%

Pilot Sites (PEDO & SOPED) - Rest of CHA

Jan-2002 (N-Pilot = 125) (N-Rest = 18)
Jan-2003 (N-Pilot = 369) (N-Rest = 30)
Jan-2004 (N-Pilot = 479) (N-Rest = 209)
Jan-2005 (N-Pilot = 596) (N-Rest = 643)
Jan-2006 (N-Pilot = 926) (N-Rest = 880)
Jan-2007 (N-Pilot = 1097) (N-Rest = 889)
Jan-08
Jan-09
Childhood Asthma:
% Patients with Asthma ED Visits

Goal <= 2%
“It’s fine to discover cures, but, remember, chronic conditions are our bread and butter.”
Lessons Learned: Pediatric Asthma

CHANGE IS HARD.
The road to Hell (bad asthma outcomes) is paved with good intentions
To succeed you need -
  real time data
  buy-in by providers
  consensus on goals
  RESOURCES
  project champion - leadership
  relentless commitment
  collaboration - with many!

What does not work -
  exhortation to do good (concede this to clergy)
  lack of system
  complicated systems
  non-collaboration

"We have met the enemy, and they is us" - Pogo
### Health Maintenance

<table>
<thead>
<tr>
<th>Due Date</th>
<th>Procedure</th>
<th>Date Satisfied</th>
<th>Date Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/12/1983</td>
<td>DM DENTAL REFERRAL (EVERY 6MO)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04/12/1983</td>
<td>DM FASTING LIPID PROFILE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04/12/1983</td>
<td>DM HEMOGLOBIN A1C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04/12/1983</td>
<td>DM MICROALBUMIN (YEARLY)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04/12/1983</td>
<td>DM NUTRITION REFERRAL (YEARLY)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04/12/1978</td>
<td>HIV SCREENING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09/25/2010</td>
<td>COLONOSCOPY</td>
<td>09/25/2007</td>
<td>Done</td>
</tr>
<tr>
<td>08/01/2008</td>
<td>DM COMPLETE FOOT EXAM</td>
<td>02/01/2008</td>
<td>DISCUS P</td>
</tr>
<tr>
<td>08/01/2008</td>
<td>DM EKG &gt; 40 (ONE TIME ONLY)</td>
<td>02/03/2004</td>
<td></td>
</tr>
<tr>
<td>08/01/2008</td>
<td>DM PNEUMOCOCCAL VACCINE (ONCE)</td>
<td>09/25/2007</td>
<td>Decline</td>
</tr>
<tr>
<td>10/26/2008</td>
<td>MAMMOGRAPHY (YEARLY)</td>
<td>10/26/2007</td>
<td>Done</td>
</tr>
<tr>
<td>06/05/2009</td>
<td>PREDICTION (EVERY 6MO)</td>
<td>06/05/2009</td>
<td>03/04/2007</td>
</tr>
</tbody>
</table>

**Patient Modifiers**
- PAP every 6mo
- Colonoscopy every 03 Yrs
- Diabetes - Adult 18 and over

**Related Plans**
- Diabetes - Adult 18 and over
- Colonoscopy every 03 Yrs
- PAP every 6mo

**Abbreviations for Override Types**
- ABSTRACTION: Abstraction
- Declined: Declined
- DISCUSSED, P: Discussed, Patient to call
- Discussed, Patient to call: Discussed
- Done: Done
“Give it to me straight, Doc. How long do I have to ignore your advice?”
Planed Care - Diabetes

% patients with at least 2 HgbA1c tests done in the past 12 months

Graph showing the percentage of patients with at least two HgbA1c tests in 12 months from July 2006 to June 2007. The goal is to have at least 85% of patients meet this criteria.

N=2,312
N=2,423
N=2,480
N=2,761

Goal ≥ 85%

Senior Leadership Report FY2007 Dashboard definition:
Measures the percent of adult patients with diabetes (ICD-9 250.00-250.93) who have been in the CHA diabetes registry for at least 12 months.
1st Planned Care Site Coordinator Arrives at East Cambridge Health Center
June 2005 (N=173)

% of Patients with an A1C Done in the Past 6 Months
N=173

- June: 62.35%
- July: 71.84%
- August: 73.99%

% of Patients with an Eye Exam in the Past Year
N=173

- June: 54.59%
- July: 60.57%
- August: 71.09%
Dramatic increase in annual diabetes eye examinations after deployment of Planned Care Coordinators (PCCs)

- PCC joins PCU September 2004
- PCC joins ECHC May 2005
- PCC joins WIN July 2005
CHA Ambulatory: Depression

Antidepressant Medication - Optimal Contacts During Acute Phase
HEDIS 2007 Commercial Products

0% to 60%

2003 2004 2005 2006

CHAMA Statewide Rate
National 90%ile
"Our psychopharmacologist is a genius."
Cambridge Health Alliance

Biannual Mammography for Women ages 52 - 69

Total Eligible Women

- 2006/66%
- 2007/83%
- 2008/87%
- 2009/89%

- No Mammo
- Had Mammo
YES, I DID HAVE MY MAMMOGRAM TODAY... WHY DO YOU ASK?
Challenges and Barriers

• Fee-for-service model not aligned with chronic disease management efforts
• Resistance to change
• Union and other labor relations issues
• Envisioning a better future beyond a challenging present
• Intensive investment in information technology
• Physician leadership
Planned Care: aligning the institution

- Passion for patient care
- Team building
- Quality improvement
- Public reporting
- Paying for quality
- Internal comparisons and fostering competition
- Provider, clinic and Alliance recognition
- Iterative Improvement over time
- Spreading the model to other domains