Primary Care: Romance, Technology, and the Future

MARK SMITH, MD MBA
UNIVERSITY OF BEST PRACTICE
SAN DIEGO
OCTOBER 2016
Outline

1. Defining Primary Care and the Triple Aim
2. Changes in the last 25 years
3. How to handle the physician “shortage”
4. Self-service and “Patient Engagement”
5. The Future …
But first: a disclaimer and some background ...
Complexity
Constantly increasing, often exponentially

- **Information** – increasing exponentially
- **Diagnostic considerations** – factors well beyond human cognitive capacity
- **Conditions** – demographics and treatment success driving co-occurring conditions
- **Clinicians** – increasing number of clinicians per individual
- **Treatment choices** - steadily growing, with increased variation by individual
Complexity
Information volume and complexity

[Graph showing the increase in medical journal articles from 1970 to 2010]
Complexity

Treatment complexity (issues in play)

- **More conditions** – e.g. 79 year old patient with 19 meds per day for osteoporosis, diabetes, hypertension, and COPD

- **More coordination** – e.g. over 200 other doctors are also providing treatment to the Medicare patients of an average primary care doctor

- **More choices** – e.g. for prostate cancer: watchful waiting, laparoscopic or robotic assisted surgery, brachytherapy, IMRT, proton beam therapy, cryotherapy, androgen deprivation therapy

- **More activities** – e.g. ICU clinicians with 180 activities per person, per day
Complexity

Diagnostic complexity (factors in play)

 WW Stead (IOM 2007)
The past half-century has seen unprecedented knowledge generation and technical innovation in biomedical science and there is much more to come

but

our systems for choosing, training, deploying, and paying the health care workforce and organizing their work have not kept up with the biomedical science.
“Any system of care that depends on the personal knowledge and analytic capabilities of physicians cannot be trusted.”

- Lawrence L. Weed, MD & Lincoln Weed
The Triple Aim

- Population Health
- Experience of Care
- Per Capita Cost
What is Primary Care?

- First Contact
- Care for common, routine conditions
- Longitudinal responsibility
- Care for the “Whole Person”
- Coordination of specialists
- Generalist perspective
The Romantic Period
The Romantic Period...

We were going to take care of patients ...

- In the office
- In the hospital
- At work
- At home
- When dying
Primary care roles eroded?

- Primary care physicians
- "Mid-level" clinicians
- Proceduralists
- Computers
- Patients

©2016 Mark smith
“Physician shortage”
Primary Care: Physicians vs. Capacity

By Thomas S. Bodenheimer and Mark D. Smith

Primary Care: Proposed Solutions To The Physician Shortage Without Training More Physicians

ABSTRACT The adult primary care “physician shortage” is more accurately portrayed as a gap between the adult population’s demand for primary care services and the capacity of primary care, as currently delivered, to meet that demand. Given current trends, producing more adult primary care clinicians will not close the demand-capacity gap. However, primary care capacity can be greatly increased without many more clinicians: by empowering licensed personnel, including registered nurses and pharmacists, to provide more care; by creating standing orders for nonlicensed health personnel, such as medical assistants, to function as panel managers and health coaches to address many preventive and chronic care needs; by increasing the potential for more patient self-care; and by harnessing technology to add capacity.
1. Value Stream Mapping
The Patient’s Perspective for Migraine

Redesign creates:
1. Evidence-based care
2. High patient satisfaction
3. Same-day access
4. Rapid return to function
5. Lower cost for buyers and sellers

©2011 Virginia Mason Medical Center
“There is nothing so useless as doing efficiently that which should not be done at all.”

Peter Drucker
“Wedge” approach to Primary Care service capacity

- Physicians
- Non-physician licensed practitioners
- Non-licensed healthcare personnel
- Patients
- Technology

Time → Service Needs
The Rise of Self-Service
Banking ...
Travel arrangements ...
Research
Medical Consultation
So what is “patient engagement”?

A. Employers’ HR: “pay more”
B. CMS: Fill out your HRA
C. MDs: “take your medicine”
D. Case manager: “walk more, eat less”
E. Plan executives: “stay in network”
F. The future: *co-management* of health
Strep throat
Types of Self-Care

- Automating protocol – driven diagnosis
  - Home testing – pregnancy, HIV;
  - ?? Strep; ear infection

- Monitoring chronic conditions
  - Hypertension
  - Diabetes
  - ?? HIV

- Adjusting treatment
  - Diabetes; hypertension; anticoagulation
Types of Self-Care, cont.

- Providing treatment
  - Computerized Cognitive Therapy
  - Wound Care
  - Dialysis?!
UTI Kiosks Currently in the Field
Simple, Clear Questions

Does it hurt or burn when you urinate (go pee)?

Yes  No

Repeat  Back  Exit Program
Use of Graphics/Pictures

In the last 3 days have you had NEW flank pain?

- Yes
- No

flank

Repeat  Back  Exit Program
Data from follow-up surveys

<table>
<thead>
<tr>
<th>Opinion of the Kiosk Experience</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to use</td>
<td>98%</td>
</tr>
<tr>
<td>Would recommend to family/friends</td>
<td>91%</td>
</tr>
<tr>
<td>Would recommend development of modules for other uses</td>
<td>95%</td>
</tr>
</tbody>
</table>
Data from follow-up surveys

**Percent rating “good” or “excellent”**

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Kiosk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall satisfaction</td>
<td>17%</td>
<td>68%</td>
</tr>
<tr>
<td>Satisfaction with treatment explanation</td>
<td>50%</td>
<td>71%</td>
</tr>
<tr>
<td>Satisfaction with time spent in ED</td>
<td>0%</td>
<td>45%</td>
</tr>
<tr>
<td>Satisfaction with time spent with doctor</td>
<td>17%</td>
<td>60%</td>
</tr>
</tbody>
</table>
Original Investigation

Effect of Self-monitoring and Medication Self-titration on Systolic Blood Pressure in Hypertensive Patients at High Risk of Cardiovascular Disease
The TASMIN-SR Randomized Clinical Trial

Richard J. McManus, FRCGP; Jonathan Mant, MD; M. Sayeed Haque, PhD; Emma P. Bray, PhD; Stirling Bryan, PhD; Sheila M. Greenfield, PhD; Miren I. Jones, PhD; Sue Jowett, PhD; Paul Little, MD; Cristina Penalvo, MA; Claire Schwartz, PhD; Helen Shackleford, RGN; Claire Shovelton, PhD; Jinu Varghese, RGN; Bryan Williams, MD; F.D. Richard Hobbs, FMedSci

**IMPORTANCE** Self-monitoring of blood pressure with self-titration of antihypertensives (self-management) results in lower blood pressure in patients with hypertension, but there are no data about patients in high-risk groups.

**OBJECTIVE** To determine the effect of self-monitoring with self-titration of antihypertensive medication compared with usual care on systolic blood pressure among patients with cardiovascular disease, diabetes, or chronic kidney disease.

**DESIGN, SETTING, AND PATIENTS** A primary care, unblinded, randomized clinical trial involving 552 patients who were aged at least 35 years with a history of stroke, coronary heart disease, diabetes, or chronic kidney disease and with baseline blood pressure of at least 130/80 mm Hg being treated at 59 UK primary care practices was conducted between March 2011 and January 2013.

**INTERVENTIONS** Self-monitoring of blood pressure combined with an individualized self-titration algorithm. During the study period, the office visit blood pressure measurement target was 130/80 mm Hg and the home measurement target was 120/75 mm Hg. Control patients received usual care consisting of seeing their health care clinician for routine blood pressure measurement and adjustment of medication if necessary.

**MAIN OUTCOMES AND MEASURES** The primary outcome was the difference in systolic blood pressure between intervention and control groups at the 12-month office visit.
Home INR Monitoring

Now is the time to improve your PT/INR control by self-testing with our Home INR Monitors.

With a portable INR monitor and help from Alere™ Home Monitoring, you can now determine your INR easily and reliably at home. As you may know, warfarin helps prevent blood from clotting and needs to be monitored frequently. It
Dialysis

At the regional hospital Ryhov in Jönköping, there has been a unit for self-dialysis for several years.
IN-CENTER SELF CARE
HEMODIALYSIS

An unappreciated Modality for renal replacement therapy

Edward R Jones, MD, MBA
Medical Director
Self-care FMC MtAiry Phila.
In-center self-care hemodialysis

• In-center hemodialysis with minimum assistance from health care personnel
• The patient performing the task of dialysis as if they were at home
• Patients Activities
  – follow agreed upon perscription,
  – set-up their machines,
  – some cannulate themselves,
  – monitor hemodynamics- establish EDW, administer NSS
  – Trouble shoot issues e.g. alarms, low bp, cramping etc.
  – record data (today on paper),
  – understand their medications, and
  – participate in their care.
  – Rinse back, decanulate, discard tubing etc. and clean machine

©2016 Mark smith
Self Care is a Culture

• SCIC HD is a culture
  – Patient empowerment
  – Creates setting that allows patient independence
  – Provides a setting that gives the patients a sense of control of their life
  – Fosters adherence
  – Entails a process of education about the dialytic process and over all state of health
  – Avoidance of paternalistic approach to patient care
  – Staff follow principles of SC
  – Patient foster the culture
The Future:
What are the tasks of tomorrow’s primary care doctors?

1. Diagnosis, treatment referral of individual patients*
2. Manage population health outcomes *
3. Help lead and manage treatment teams *
4. **Facilitate and teach patient self-management** *
5. Continuous learning and quality improvement *

*All require **organization**
Outline

1. Defining Primary Care and the Triple Aim
2. Changes in the last 25 years
3. How to handle the physician “shortage”
4. Self-service and “Patient Engagement”
5. The Future ...
“Self-portrait with Dr. Arrieta” 
(1820)

"Goya, in gratitude to his friend Arrieta: for the compassion and care with which he saved his life during his acute and dangerous illness he suffered towards the end of the year 1819 in his seventy-third year."
The Future is Bright