Primary Care from an Innovator’s Perspective

Goran Henriks, Gene Nelson
8th International Clinical Microsystem Festival
March 4, 2011, 14:45-15:30

Help us think about this …

• We see so many opportunities for a better future
• We are not patient, we do not want to wait (we will be patients soon enough)
Topics: Primary Care + Innovation

• Framing the challenge: the foundation is cracked (Goran)
• Primary care: past, present, future (Gene)
• Innovation “design elements” fit for the future (Goran & Gene)

1. Framing the Challenge

• Job 1 for a health care system is to deliver support for “producing” health
• Determinants of health
• Primary care: the foundation of a health care system
  – and therefore the place best positioned to produce health!
<table>
<thead>
<tr>
<th>Municipality</th>
<th>Average days on sick leave (paid sick days) July 2009</th>
<th>Percentage of 19 years old without dental caries 2008</th>
<th>Percentage of 4 year olds with overweight and obesity Born 2002-2004</th>
<th>Percentage of pregnant women smoking 2006</th>
<th>Children per 1000 births with low birth weight 2005-2007</th>
<th>Percentage of inhabitants with good self-perceived health (W/M)</th>
<th>Percentage of inhabitants with high alcohol consumption (W/M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jönköping</td>
<td>31,5</td>
<td>30%-53%</td>
<td>14,6%</td>
<td>5,8%</td>
<td>32,7</td>
<td>65/73</td>
<td>7/14</td>
</tr>
<tr>
<td>Habo</td>
<td>28,4</td>
<td>35%</td>
<td>12,9%</td>
<td>9,2%</td>
<td>21,6</td>
<td>73/74</td>
<td>6/15</td>
</tr>
<tr>
<td>Mullsjö</td>
<td>37,7</td>
<td>30%</td>
<td>16,4%</td>
<td>9,6%</td>
<td>28,1</td>
<td>73/67</td>
<td>7/14</td>
</tr>
<tr>
<td>Tranäs</td>
<td>39,0</td>
<td>42%</td>
<td>12,6%</td>
<td>9,1%</td>
<td>20,3</td>
<td>69/73</td>
<td>7/22</td>
</tr>
<tr>
<td>Äneby</td>
<td>34,5</td>
<td>48%</td>
<td>16,3%</td>
<td>10,9%</td>
<td>58,8</td>
<td>68/70</td>
<td>7/13</td>
</tr>
<tr>
<td>Eksjö</td>
<td>35,0</td>
<td>48%-59%</td>
<td>13,8%</td>
<td>9,3%</td>
<td>22,8</td>
<td>67/70</td>
<td>5/14</td>
</tr>
<tr>
<td>Nässjö</td>
<td>35,4</td>
<td>28%-30%</td>
<td>13,9%</td>
<td>9,8%</td>
<td>21,7</td>
<td>68/75</td>
<td>6/15</td>
</tr>
<tr>
<td>Sävsjö</td>
<td>35,2</td>
<td>41%-54%</td>
<td>12,5%</td>
<td>8,4%</td>
<td>20,4</td>
<td>70/67</td>
<td>8/8</td>
</tr>
<tr>
<td>Vetlanda</td>
<td>33,4</td>
<td>35%-42%</td>
<td>15,8%</td>
<td>8,8%</td>
<td>39,2</td>
<td>72/73</td>
<td>9/14</td>
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<tr>
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<td>31,3</td>
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<td>16,9%</td>
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<td>33,8</td>
<td>71/73</td>
<td>7/14</td>
</tr>
<tr>
<td>Gnosjö</td>
<td>29,2</td>
<td>29%</td>
<td>15,8%</td>
<td>8,9%</td>
<td>32,9</td>
<td>74/72</td>
<td>10/12</td>
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<td>28%</td>
<td>14,3%</td>
<td>8,7%</td>
<td>35,6</td>
<td>72/70</td>
<td>9/14</td>
</tr>
<tr>
<td>Varnamo</td>
<td>26,7</td>
<td>27-38%</td>
<td>15,3%</td>
<td>8,8%</td>
<td>23,4</td>
<td>76/75</td>
<td>5/11</td>
</tr>
<tr>
<td>County</td>
<td>32,0</td>
<td>38%</td>
<td>14,7%</td>
<td>8,1</td>
<td>30,1</td>
<td>70/73</td>
<td>7/14</td>
</tr>
<tr>
<td>Sweden</td>
<td>34,1</td>
<td>-**</td>
<td>-</td>
<td>7,5</td>
<td>31,1</td>
<td>67/69</td>
<td>10/16</td>
</tr>
</tbody>
</table>

Doing More of the Same Is Not Enough
Imagine
1876 Bell found a way to transmit *voice over wire*.
Western union called Bells innovation a toy.
1978 AT&T test *mobil phone* services – how should you talk about that with your colleague?
2004 I’ve read everywhere about the local *high speed wireless data networks* using a technology called 802.11?

Ref: C M Christensen

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**Googles Vice president Cerf talks about**

- Internet works in over 80 000 000 servers and it is store and package support –
- 1800 million people have a computer
- 4800 million cellphones are sold so internet will be in each pocket in the world
- Speach understanding computers are soon possible to use by cellphones
- We have already twitter, voicemail, videomail
- It’s about protocols, standards and how to work with complexity
Why Doing More of the Same Is Not Enough

- Do we have to continue to have hospitals bursting at the seams?
- Can we afford to continue the way we do?

- How can we develop work processes in care where we work with technical efficiency and allocative efficiency at the same time?

- Can Integration and connectivity between health, community and home – become our way of working?

“The product of a health care system should be health”  
T. Colacchio, MD
2. Primary Care Models: A Panoramic View

- Past
- Present
- Future
Primary Care is the Foundation of All Health Systems but the Foundation Is Cracked

- Sweden
  - Testing competition
- UK
  - Eliminating Health Trusts
- US
  - Building medical homes

Primary care is the gateway to a health care system and is in best position to improve patient & population health.

The primary care system is being redesigned in Sweden & the UK & in the US to do a better job, especially in health promotion, disease prevention & chronic care.

Kerr White’s Boxes

Population of 1000

Population seeing a PCP in 1 year 800

Population seeing a specialist in 1 year 400

Note key role of primary care:
• External interface to population
• Internal interface to health system

Hospitalized 50

AMC 10
Clinical care is provided in a very complex environment.

Yesterday: 1:1  
Today: Many : 1

The clinical microsystem is the smallest (replicable) unit of health care delivery. Primary care microsystems are being reinvented. The master trend is towards interdisciplinary teams with THE patient at the center and the aim being optimal health and well being.
**Yesterday: Solo Practice**

- Dr. Kirk
- Gene Nelson
  - Hi Cholesterol
  - Annual exam
  - Ad hoc sick care
Today: Team Practice

- DH-Hudson Family Practice
- A Medical Home
  - 2 MDs
  - 1PA & 1NP
  - 1 RN
  - 4 Med Assts
  - Part time (0.2) Care manager
  - 3,200 patients
- Using microsystem principles
- Major focus on formal care plans
- Keeping score

Clinical Microsystems
“The Place Where Patients, Families and Clinical Teams Meet”

Assessing, Diagnosing and Treating Your Outpatient Primary Care Practice

www.clinicalmicrosystem.org
Building Care Plans at Hudson

This care plan is to help everyone on the care team communicate with you and with each other about your care. Our aim is to create patient-centered, goal-directed health care.

Date of Birth: 12/25/1947  Age: 63  I prefer to be called: April

Best Phone: 603-555-1111

Do you have advanced directives filed? Yes XXX No
Community CPR order. Yes XXX No

Patient or family has signed a release of information indicating we may send all above information to the Emergency Department? Yes

Hospital Preference: Southern New Hampshire Medical Center

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EMERGENCY PLAN:

<table>
<thead>
<tr>
<th>Problem &amp; Presenting Symptoms</th>
<th>Recommended Patient Action</th>
<th>Recommended Provider Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreased urine output</td>
<td>Drink fluids, monitor BP, proceed to ER if no urine output in 10 hours.</td>
<td>Use fluids, monitor BP, check renal labs, consider fluid &amp; diuretics. Assess for underlying condition.</td>
</tr>
<tr>
<td>Worsening shortness of breath</td>
<td>Increase oxygen to 2.5 L/min. Use Duoneb, call the office.</td>
<td>Evaluate for COPD exacerbation, vs worsening CHF, vs worsening pulmonary hypertension.</td>
</tr>
<tr>
<td>Increased back pain</td>
<td>Use heat or ice, massage, and apply lidocaine patch.</td>
<td>Consider short-term increase in Percocet (with stool softener) for exacerbation of pain.</td>
</tr>
</tbody>
</table>
ACTIVE PROBLEM LIST:
1. Congestive Heart Failure
2. COPD - oxygen dependent
3. Smoker - 1 1/2 ppg - contemplative re: quitting but not confident
4. Pulmonary hypertension
5. Osteoarthritis - chronic pain
6. Anxiety

Who else is involved in your care? (Specialists, Nurses, Agencies, Schools)

<table>
<thead>
<tr>
<th>NAME</th>
<th>Role &amp; Location</th>
<th>Phone</th>
<th>Fax/email/other</th>
<th>Release of info signed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michelle Ward, RN</td>
<td>RN Care Coordination</td>
<td>603-555-1234</td>
<td>603-555-1235</td>
<td>N/A</td>
</tr>
<tr>
<td>Dr. Goodman</td>
<td>Pulmonology, DH Manchester</td>
<td>603-555-2222</td>
<td>603-555-3333</td>
<td></td>
</tr>
<tr>
<td>Dr. Yost</td>
<td>Rheumatology, DH Bedford</td>
<td>603-555-2345</td>
<td>603-555-2356</td>
<td></td>
</tr>
<tr>
<td>Jane Dough</td>
<td>Counselor, Nashua Counseling Center</td>
<td>603-555-6666</td>
<td>none</td>
<td>YES</td>
</tr>
</tbody>
</table>

Emergency Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Relationship</th>
<th>Phone</th>
<th>Permission to contact filed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>John T.</td>
<td>Husband</td>
<td>603-555-8888</td>
<td>yes</td>
</tr>
</tbody>
</table>

PATIENT SNAPSHOT

Communication Considerations: Arm has decreased hearing in right ear.
Cultural or Religious Considerations: Catholic, does not believe in DNR order

1. Patient view: What is important for the care team to know about you? Aside from medical history, what do you want someone involved in your care to know?

2. Strengths & Assets: Who or what helps you? My husband is a great support. He does a lot for me. Going to church helps too.

3. Patient priorities: What is most important to you? I don't want to keep going back to the hospital. I want to get well and be able to do my own housework and go out with my husband.
**ACTION PLAN:**

My GOALS:

1. **Short-term:** "I do not want to be readmitted to the hospital."
2. **Long-term:** "I want to control my pain and have more energy so that I can do things around my house and can visit my friends."

<table>
<thead>
<tr>
<th>Concern</th>
<th>Goal 1:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shortness of breath</td>
<td>Be able to breathe easier and avoid going back to hospital</td>
</tr>
</tbody>
</table>

**Action Plan**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action Plan</th>
<th>Who is responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Continue full course of antibiotics, take all prescribed medication</td>
<td>April</td>
</tr>
<tr>
<td>2</td>
<td>Set up Pulmonary Rehab</td>
<td>Michelle will help set up apt. Dr. Council will do referral</td>
</tr>
<tr>
<td>3</td>
<td>Follow up visit with Dr. Goodman, pulmonology</td>
<td>April will call for appointment</td>
</tr>
</tbody>
</table>

**Time Frame:**

<table>
<thead>
<tr>
<th>Confidence (1-10)</th>
<th>Motivation (1-10)</th>
<th>Stage of change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence (1-10)</td>
<td>Motivation (1-10)</td>
<td>Stage of change</td>
</tr>
</tbody>
</table>

**Outcome:**

(What was the outcome of this plan?)

09/11/2011

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**Keeping Score at Hudson**
Keeping Score at Hudson

• APF at Mass General Hospital
• A personal care team
  – 1800 Clients
  – 1 MD
  – 1 RN
  – 1 NP
  – 1 Medical Assistant
  – 1 MSW/CC
• Primary focus on health and wellness
  – Group visits
  – Learning center on site

Tomorrow: Ambulatory Practice of the Future
APF Mission

“We will design the ambulatory care practice that delivers ideal care in the ideal environment to optimize outcomes for all.”

Discovery & Inspiration

- Design expertise adjacent to clinical setting
- Patient – centeredness = patient as expert
- Collaboration is working
- Patient – driven care is a powerful model
- Care teams with non-physician care providers
- Technology and space engineering will adapt to future care models
The APF Care Model

- Health & Life Balance Plan
  - Compact
  - Orientation & guide
  - Customized care plan
- Advisory role in ongoing APF development

The APF Care Model

- Members - MD, RN, NP, MA, Care coordinator, Greeter, Medical secretary
- Acute / chronic care
- Proactive pop mgmt
- Shared responsibility of ongoing practice redesign
- ‘Productivity’ redefined (Compensation supports longer visits and non-traditional care activity)
The APF Care Model

- iHealthSpace (portal)
- Chart review, visit prep, ongoing care plan work
- Synchronous and asynchronous e-visits
- Communication tech
- Remote physiologic monitoring (CCH, CIMIT)
- New services (online scheduling)
- Population management
- Peer-to-peer care

APF at Mass General Hospital
3. Innovation “Design Elements” Fit for the Future

- Innovation needed, not incremental change
- Design components for innovation
- Improvement science domains to support innovation

Goran & Gene

Innovation Needed, Not Incremental Change

- Upstream prevention needed to prevent downstream chronic disease
- Primary care must innovate to
  - Promote health
  - Prevent disease
  - Manage chronic problems
Design Components for Primary Care Innovation

• New health learning systems for health activation: health promotion & prevention, shared decision making & self-management
  – Examples: APF, Center for Shared Decision Making, HealthMedia Inc, Healthwise Inc.

• New social contract to align health care with public health & with community-based population health “influencers” such as schools, work places, senior citizen housing
  – Examples: Jönköping County BMI, Dartmouth PRC

Design Components for Primary Care Innovation

• New health information environment to feed forward measures of health (risk, disease, function) for individuals and populations
  – Examples: Sweden RA Registry, Dartmouth Spine Center, Group Health of Puget Sound Health Assessment System

• New health value production systems to “scale up” innovation:
  – Value chains, e.g., Minute Clinics
  – Value (solution) shops, e.g., Geriatric Consult Service
  – Value (computer assisted) peer networks, e.g., “Patients Like Me”
4 Knowledge Domains to Spur Innovation

1. Measurement & informatics
2. Reliability & safety sciences
3. Patient-centered design
4. Lean principles and methods

Knowledge Domains to Spur Innovation

1. **Measuring** Outcomes, Care & Costs

- Population of People
- Initial Health Status
- A Health System: Entry → Asmt → Dx → Rx
- Value
- New Health Status + $$

1. Patient-centered co-design
2. Reliability-safety science
3. Lean principles & methods
**Valuecompass koloncancer – inhabitants**

**Funktionellt status/hälsostatus**

Hälsokurvan/befolkning/område

**Kliniskt status**

Incidens

**Patient/kundupplevda behov**

Hälsokurverändring

Folkhälsoskåt – frågor kopplade till upplevd kunskap om prevention

**Resurser/Kostnader**

Folkhälsoplanerare

Hälsorådgivare

- Personalkostnader
- Kompetens

**Valuecompass koloncancer – patient**

**Funktionellt status/hälsostatus**

Hälsokurvan/befolkning/område

**Kliniskt status**

Överlevnad

**Patient/personalupplevelse**

Patient

- Kunskap om vad jag kan/kunde göra preventivt

Personal

- Upplivd kunskap om vad som kan göras preventivt
- Upplivd tillgång till säker information om vad som kan göras preventivt

**Resurser/Kostnader**

Hälsorådgivning

- Personalkostnader
- Kompetens
Primary Health … A New Shape of Relationships & A New Information Environment

Healthiest People

&

Populations Possible

Your thoughts??
Design Process – Critical Elements

• Partnerships – bring diverse group to the work and include customers & design expertise
• Goals – establish vision, mission, culture
• Discovery – search for inspiration and guidance
• Leadership – ownership & management of process; buy-in of institutional leadership
• Business case – support development; justify care model for large self-insured population; ROI for innovation lab
  • Committed, core design team
  • Project management – executing on design plan
Primary Health Center: Feed forward (& feedback) system, featuring PROMs (Patient Reported Outcome Measures) for engaging patient, shared decision, making & revising care plan, coordinating care, improving care, measuring & researching health care value.

The summary report generated from patient-reported data is critical to a physician's ability to care for a patient.
MEASURING VALUE: SPORT* trial, patient-reported data combined with cost data to compare effectiveness & value of treatments

NIH-sponsored Spine Patient Outcomes Research Trial; publications in JAMA, NEJM, Spine, etc.

Avoidable Risks of Death

Deaths attributable to individual risks (thousands) in both sexes

- Smoking
- High blood pressure
- Overweight-obesity (high BMI)
- Physical inactivity
- High blood glucose
- High LDL cholesterol
- High dietary sodium (salt)
- Low dietary omega-3 fatty acids (seafood)
- High dietary trans fatty acids
- Alcohol use
- Low intake of fruits and vegetables
- Low PUFA (in place of SFA)

Cardiovascular
Cancer
Diabetes
Respiratory
Other NCD
Injury