How Patient Reported Outcomes & Patient Generated Health Data is Being Used in Direct Patient Care

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Flow

1. Outcomes, value & feed forward patient generated health data
2. Case studies: Dartmouth, Sweden, Group Health
3. Answers to key questions
1. Introduction

A principle, the concept of value & feed forward patient generated data
What do we really want?  
What indeed?

Q: How is a kilowatt-hour of electricity like a day in the hospital?

A: Nobody wants either

Hot showers, cold beer.

Better health, better care, lower costs for patients and communities.

End use, least cost

Negawatts and Negabeds: Berwick, Lovins, Fisher
Huffington Post, December 29, 2008

Amory Lovins
The “it” is value = outcomes + experience / costs over time
Basic Logic

We all need to know what outcomes the health system produces at what cost to patients and families and caregivers and communities. The preferred source of some health data (that’s needed to measure outcomes and health care value) is the patient … the primary beneficiary of health care. Therefore, we need a rich information environment that makes use of simple & valid patient generated data that is fed forward so that outcomes improve 1 patient at a time and fed back for program improvement, research, public reporting & accountability.
2. Case Studies: Dartmouth, Sweden & Group Health

Dartmouth Spine Center

- Started in 1998 by Jim Weinstein
- Innovative interdisciplinary clinical microsystem ... 1 stop shopping
- “Back to work back to play 1 back at a time.” ... patient-centered
- Better care in real time & better research over time
Spine Center: Integrating Patient Engagement into the Model of Care
... “SAME PAGE CARE” & collaboratory

Feed Forward

Referral or Visit Request

Orientation & PROMs

Initial Work Up Plan of Care

Acute Care Management

Chronic Care Management

Functional Restoration

Palliative Care

People with healthcare needs

Feedback

✓ Improvement registry
✓ Public reports website
✓ SPORT & research

People with healthcare needs met

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The summary report generated from patient-reported data is critical to a physician's ability to care for a patient. .. “More valuable than MRI, without it is like flying a plane without instruments” J. Weinstein
Herniated Disk
Outcomes @ 2 Years

- Surgery
  41 Ave Age
  43% Female

- Non-Surgery
  44 Ave Age
  45% Female

Functional Costs

- Clinical
  - Improved
  - Reduced Oswestry Symptoms

- Satisfaction
  - Improved
  - Satisfied With Improvement

Costs

- Total Direct & Indirect Costs
  - $10,195
  - $25,221

Physical SF-36 Improvement

- 1.64 QALY
- 1.44 QALY

Cost Per Quality Adjusted Life Year Added
By Surgery $74,870

Going from Concept of value To measured value
D-H Quality Reports

Physical Function

This chart shows the Physical Functioning Score, which measures how the patient does on various activities, such as walking, bending and lifting.

We get the results from the questionnaires filled out by the participants in SPORT who have lumbar herniated disc.

The physical function score is from a survey called the SF-36. The SF-36 is a standardized way to look at how people are feeling mentally and physically.

This chart shows:
- These results are raw scores, not percentages; a higher score is better.
- After treatment, the surgical patients had higher scores than the patients who had non-operative treatment.

http://med.dartmouth-hitchcock.org/quality/spine_index.html
Prototype SPORT Calculator

Personalized risk assessment
Based on people like me ...
From research back to patient care
Sweden: Rheumatoid Arthritis (RA) Registry

- Started in 2002 by Staffan Lindblad & Helena Hvitfeldt (& patient care-designer joined team later)
- Aim: to build the Swedish RA registry using feed forward & feedback design ... better care & better research
- Has spread to 22 out of 64 centers
- Innovation: fundamental change in way care is being delivered ... active co-design of care plan by patient, nurse and doctor
- Michael Porter ... a model for all of Sweden
- RWJ ... considering as a model for all US registries
Patient Registering Data on Swollen and Tender Joints on a Touch Screen
Case in point: Swedish National RA Registry …
This patient is doing better …
N of 1 experiment…
Dropped 2 meds
Key point: Swedish health system is doing better:
All Patients in the SRQ, from 1994 – 2006*

*Black line shows DAS at initial visit and blue after 6 months and turquoise after 12 months.
Group Health: Primary Care

- Started in 2006 by Rob Reid & colleagues
- Strategy: redesign a failing primary care system
- Tactic: use patient-reported data to improve preventive & chronic care
- Integrated with Epic electronic medical record
- >70% primary care patients using feed forward data with their primary care teams
Alcohol & Drug Use

Alcohol and other substances can increase your risk for certain health conditions.

How often do you have a drink containing alcohol?

- Never
- Monthly or less
- 2 to 4 times a month
- 2 or 3 times a week
- 4 or more times a week

How many drinks containing alcohol do you have on a typical day when you are drinking?

- 0 to 2 per day
- 3 to 4 per day
- 5 to 6 per day
- 7 to 9 per day
Patient Report Delivered by Web Portal

Chronic care tracking

**Current medical conditions**

<table>
<thead>
<tr>
<th>Condition</th>
<th>POOR CONTROL</th>
<th>FAIR CONTROL</th>
<th>GOOD CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension Care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asthma Care</td>
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</tr>
<tr>
<td>Depression Care</td>
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</tr>
</tbody>
</table>

**Future disease risk**

<table>
<thead>
<tr>
<th>Condition</th>
<th>STRONG RISK</th>
<th>MODERATE RISK</th>
<th>LOW RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorectal Cancer Risk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin cancer risk</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Diabetes Risk</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Lung Cancer Risk</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Cardiovascular Disease</td>
<td></td>
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</tbody>
</table>

**Lifestyle**

<table>
<thead>
<tr>
<th>BMI (Body mass index)</th>
<th></th>
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Risk Status tracking

**Recommended actions**

- Take steps to control your blood pressure
- Strive for a healthier weight
- Set a plan to quit tobacco
- Get your pneumococcal immunization
- Take steps to control your asthma
- Get moving for better health
- Take steps to manage stress
- Lower your risk for heart disease

Next Actions

Talk with your doctor if you have questions or concerns about your health. This assessment is not intended to be professional health advice, diagnosis, or treatment. If you have non-medical questions about this profile, contact Group Health Customer Service at 1-888-901-4636.
Report Delivered to the Clinical Team

Call to action

Health Profile - Primary Care Team Report

- **Patient Name**: Momentumweb, Harry
- **Gender**: Male
- **Date of Health Profile**: 08/09/2007
- **Previous Health Profile**: None

**Disease Management Concerns**:
- Diabetes
- Hypertension

**Other Issues to Consider**:
- Weight
- Eating habits
- Physical activity

**Chronic Conditions**
- Diabetes: Poor control

**CLINICAL REFERENCES**
- Diabetes type: Type 2
- HbA1c: 8.1%
- Microalbumin test: Negative
3. Key Questions
Q1. How is Dartmouth using PGHD in direct care?

- Prevention & health promotion
- Shared decision making
- Primary care, surgical care, chronic care
- Program improvement, research, transparency, public reporting, payment
Patient History

Patient Reported Information & Measures

Advantage of Dartmouth-Hitchcock's model of integrating patient-reported data into care

Patient Care
- Patient and provider engagement
- Whole patient care
- Informed patient choice

Research
- Research as part of clinical practice
- Same system for practice and research
- Comparative effectiveness research
- Patient-centered, value-based research

Health System
- Patient-reported outcomes reporting
- More efficient, complete visit documentation
- Practice improvement based on outcomes
- Value-based payment measures for ACOs*

*Value-based payment measures will be used for Accountable Care Organizations (ACOs), future reimbursements around episode bundled measures

SUCCESES

Early Adopters
- Primary Care - GIM*
- Pain Center
- Orthopedics (Wrist, Hip & Knee*, Shoulder)
- Plastic & Hand, Breast
- Urology (Prostate)
- Vascular
- Comprehensive Breast Center*
- Neuro (Oncology, Multiple Sclerosis)
- Spine Center
- Occupational Medicine
- Functional Restoration
- Infectious Disease
- REI
- Psychiatry

18 Patient Populations
Q2. What does it take to make PROs & PGHD meaningful & useful?

1. **Educate** patients and staff on aims of using data and how to use it to make care more effective & efficient

2. Make it easier for patients, caregivers & clinical teams to do their work

3. Redesign **workflows** to collect and use the data in best possible way

4. Produce **actionable reports** for use at point of care and to follow progress over time

5. Make it easier for patients to become more engaged & empowered in their own care by making good **decisions** & effective self-management

6. Integrate with other data sources to enhance value of data & data to measure **value**

7. Safeguard **privacy** data per legal and ethical requirements
Take Home Points

• Patients want best value … outcomes, experience, costs
• Delivering and measuring best value … requires patient generated data
• Patient generated data is being used effectively in direct patient care in some health systems
• To provide patient-centered care … patient generated data needs to be used in every health system for all patients