Using PROMs to Improve Quality: Clinical Management of Individuals

Eugene C. Nelson, DSc, MPH

Director Population Health & Measurement
Dartmouth- Hitchcock
Professor, Community and Family Medicine
The Dartmouth Institute

Wayne Gretzky

Acknowledgements: J. Weinstein, R. Reid, S. Lindblad, J. Wasson, C. Kerrigan, W. Gozansky, A. Wu, P. Batalden and financial support from The Dartmouth Institute, The Dartmouth Center for Healthcare Delivery Science, the Robert Wood Johnson Foundation, PCORI and NIH-NIA.
An old story ... great clinical outcomes & better function (because of PROMs)

JAMA 1983

Functional Health Status Levels of Primary Care Patients

Eugene Nelson, DSc; Beach Conger, MD; Richard Douglass, MD; Dale Gephart, MD; John Kirk, MD; Robert Page, MD; Austen Clark, DPhil; Kenneth Johnson, MD; Kevin Stone; John Wasson, MD; Michael Zubkoff, PhD

- A cross-sectional study was conducted on functional status of adults visiting primary care practices. Limitations in physical and mental function were assessed independently in 28 practices by patients (N=1,227) and physicians (N=47) using a simple global index of disability. Results indicated 12% of patients rated their physical limitations as major and 8% rated major emotional limitations during the past month. Comparable assessments by
to gain a better understanding as to the ramifications of disease on the individual patient’s life—his work, social activities, and emotional well-being—that could aid in making the physician-patient relationship more

Jack Kirk, MD
Founder
Dartmouth COOP Project
Topics

• Using PROMS for clinical management of individuals to improve quality
  – Where?
  – How?
  – Why?
  – Research questions?
1. Where are PROMs Being Used for Individual Patients to Improve Quality?

- 18 Dartmouth Programs Using PROMs for Individuals
  - Orthopedics: hip & knee & shoulders & spine
  - Plastics: hand & breast
  - Pain clinic: chronic pain
  - Hematology/Oncology: breast, head & neck, neuro-oncology, prostate
  - Psychiatry: sleep disorders, depression, anxiety
  - OB-GYN: uro-gynecology, post partum depression
  - Rehabilitation: functional restoration
  - Surgery: Pre-admission testing
  - Vascular: vascular conditions
  - Primary care: assessment & plans

- Registries: Sweden & International
  - Sweden: Rheumatology (64), CF (6), HIV (8) & rest starting
  - ImproveCareNow: pediatric IBD improvement network
  - Parkinson’s Disease International Qii registry

- Progressive Systems
  - High Value Healthcare Collaborative (100 m patients & 20 systems)
  - HowsYourHealth: British Columbia & US primary care practices
  - UPMC, UCLA, Duke, Michigan, Cleveland Clinic, Cincinnati Childrens, Geisinger, etc.

Not yet mainstream but a very partial listing
2. How are PROMs Being Used for Individual Patients to Improve Quality?

- **Primary care**
  - Dartmouth COOP (New England)
  - HowsYourHealth (British Columbia)
  - Kaiser-Permanente (Colorado)
  - Group Health Cooperative (Washington state)

- **Specialty care**
  - Dartmouth Spine Center
  - Swedish Rheumatology Quality Registry

Some Cases
Primary Care Cases
HowsYourHealth: British Columbia

Sponsored by British Columbia Medical Association & Provincial Government

- Free for use by any person or patient
- Health assessment
- Personal health care plan
- Outcomes tracking
- Health & decision making information
- Feed forward PROMs pre-visit
- Used for co-production of care & self management
- Creates a patient registry for practices
- Also endorsed by AAFP, ACP, AHRQ

http://www.howsyourhealthbc.ca/

John Wasson, MD

Coming Next: HealthConfidence Massachusetts
• Annual wellness visits for primary care patients age 65 plus
• PROMs based health assessment to make patient’s personal care plan
• Goal is 100% participation
• Last year reached 45,000 out of 80,000 patients
Group Health Coop: 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
Patient Home Page

MyGroupHealth

APPOINTMENTS
- No office visits
- Schedule Appointments [NEW FEATURES]
- Current Appointments

MESSAGES
- No new messages
- E-Mail Health Care Team
- Message Inbox
- Sent Messages

VISIT & CALL SUMMARIES
- After-Visit Summaries
- Consulting Nurse Calls
- Urgent Care & Hospital Services

MEDICAL RECORD
- Lab & Test Results
- Immunizations
- Blood Pressure & Weight
- Health Conditions
- Allergies
- Letters & Vision Prescriptions
- Routine-Care Reminders

MEDICATIONS
- Refill Prescriptions
- Recent Medications
- Check Order Status

HEALTH PROFILE
- Fill Out Questionnaire & See Reports
- Your Reports Before 2010

HEALTH COVERAGE
- Explanation Of Benefits
- Coverage Documents
- Benefits Usage Status

MEDICAL CENTER
- Federal Way Medical Center

NEW SERVICES
- Wellness Site
  There is no access at this time. An updated wellness site will be available in March.
  Learn more

Access Your Children’s Online Records
Sign up now to send messages to your children’s doctors, see immunization records, check lab results, and more!

FEATURED CONTENT
- Flu Vaccine Recommended
  Experts recommend vaccinations for everyone aged 6 months and older.
- Share Your Group Health Story
  Your stories can encourage and inspire other members facing health problems. Tell us about...
Example of the eHRA Questions

Health Profile

Standard serving of one drink:

- 12 ounces of beer or wine cooler
- 1.5 ounces of 80 proof liquor
- 5 ounces of wine
- 4 ounces of brandy, liqueur or aperitif

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**

**Risk status tracking**

<table>
<thead>
<tr>
<th>Current medical conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hyertension Care</strong></td>
</tr>
<tr>
<td><strong>Asthma Care</strong></td>
</tr>
<tr>
<td><strong>Depression Care</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Future disease risk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Colorectal Cancer Risk</strong></td>
</tr>
<tr>
<td><strong>Skin cancer risk</strong></td>
</tr>
<tr>
<td><strong>Diabetes Risk</strong></td>
</tr>
<tr>
<td><strong>Lung Cancer Risk</strong></td>
</tr>
<tr>
<td><strong>Cardiovascular Disease</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lifestyle</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Body mass index (BMI)</strong></td>
</tr>
<tr>
<td><strong>Nutrition</strong></td>
</tr>
</tbody>
</table>

**Next 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
Report Delivered to the Clinical Team

Health Profile - Primary Care Team Report

Patient Name: HARRY MOMENTUMWEB
Gender: Male
Date of Health Profile: 10/05/2007
Previous Health Profile: None

Disease Management Concerns:
- Diabetes
- Hypertension

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

Chronic Conditions:
- Diabetes, Poor control

Document Text:

Health Risk Assessment Report

Patient Report
Complete Health Profile Questionnaire

Call to action
Specialty Care Cases
Using PROMs with Individuals: Dartmouth Spine Center

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

Feed Back

Expectations For Good Care → Improvement registry → Public reports website → SPORT & research

Disease Status

Sunk Costs

Functional & Risk Status

Experience Against Need

Incremental Costs

© 2000, Trustees of Dartmouth College, Batalden, Nelson, Wasson
The summary report generated from patient-reported data is critical to a physician's ability to care for a patient: same page care.
SPORT NIH Trial

- 13 Centers
- 3 spine conditions
- Feed forward PROMs
- Prospective controlled trial
- 6 years of follow up
Herniated Disk Outcomes @ 2 Years

<table>
<thead>
<tr>
<th>Surgery</th>
<th>Non-Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>44 Ave Age</td>
<td>30 Ave Age</td>
</tr>
<tr>
<td>43% Female</td>
<td>45% Female</td>
</tr>
</tbody>
</table>

Physical SF-36 Improvement

- Functional Costs
- Clinical Costs
- Satisfaction

Cost Per Quality Adjusted Life Year Added By Surgery $34,355

Reduced Oswestry Symptoms

Satisfied With Improvement

Total Direct & Indirect Costs

Moving research results back to patient care ... risk calculator used at point of care for Shared Decision Making
Sweden: Rheumatology Quality Registry (SRQ)

- SRQ uses PROMs feed forward data in flow of care: better care for individuals, practice improvement, new care models, retrospective & prospective research
- Started in 1995 & covers > 90% of Swedish patients with RA in 64 centers
- Innovation: fundamental change in way care is being delivered … active co-design of care by patient, nurse and doctor
- Swedish government & Michael Porter … a model for all of Sweden
- RWJF … considering as a model for 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…

Responded to biologics

<table>
<thead>
<tr>
<th>Year</th>
<th>January - March</th>
<th>June - December</th>
</tr>
</thead>
<tbody>
<tr>
<td>År</td>
<td>Dags Månad</td>
<td>Årskontroll</td>
</tr>
<tr>
<td>2010</td>
<td>05-Jan</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23-Feb</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>28-Mar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>03-Jun</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>05-Sep</td>
<td></td>
</tr>
<tr>
<td></td>
<td>08-Dec</td>
<td></td>
</tr>
<tr>
<td>Månads-Kontroll</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>MK-grupp</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Arbetsförmåga</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>Allmän hälsa</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>SR</td>
<td>54</td>
<td>63</td>
</tr>
<tr>
<td>Läkarbedömning</td>
<td>Hög</td>
<td>Hög</td>
</tr>
<tr>
<td>EQ5D</td>
<td>-0.045</td>
<td>-0.045</td>
</tr>
<tr>
<td>CRP</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>Spord. artrit, Ank. spond.</td>
<td>BASFI</td>
<td>Svullna leder (66)</td>
</tr>
<tr>
<td>Daktylit</td>
<td>Entesit</td>
<td>Funktionsneds. - HAQ</td>
</tr>
<tr>
<td>IRA</td>
<td>Trombocyten</td>
<td>DAS28</td>
</tr>
<tr>
<td>NSAID</td>
<td>COX1</td>
<td>COX1</td>
</tr>
<tr>
<td>KORT</td>
<td>PRE</td>
<td>PRE</td>
</tr>
<tr>
<td>KORT dos</td>
<td>10/1d</td>
<td>15/1d</td>
</tr>
<tr>
<td>DMARD 1</td>
<td>MTX</td>
<td>MTX</td>
</tr>
<tr>
<td>DMARD 1 dos</td>
<td>20/1v</td>
<td>20/1v</td>
</tr>
<tr>
<td>DMARD 2</td>
<td>SAL</td>
<td>SAL</td>
</tr>
<tr>
<td>DMARD 2 dos</td>
<td>2000/1d</td>
<td>2000/1d</td>
</tr>
<tr>
<td>DMARD 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMARD 3 dos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMARD 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMARD 4 dos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uppföljd månad</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Uppföljt läkemedel</td>
<td>ENB</td>
<td>REM</td>
</tr>
<tr>
<td>Läkemedelsdos</td>
<td>50/1v</td>
<td>200/8v</td>
</tr>
</tbody>
</table>
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.
3. Why ???
Why use PROMs in flow of care for clinical management of individuals?

PROMs & Patient Generated Data = Guidance System for Getting It Right …

• Health care decisions right for Amy
• Health care plans right for Amy
• Health care outcomes best for Amy
• Thus, Amy is able to co-produce her care
Why use PROMs for clinical management?

- Using PROMs in flow of care using feed forward principles is a triple play
  1. Better care for individual patients
     - Tracking outcomes over time
     - Agency for co-production of care
  2. Better data for practice improvement
     - Comparative benchmarking vs other practices
     - Measurable improvements
  3. Better data base for research
     - Participation in research “collaboratory”
     - Retrospective & prospective
4. Research Questions

- How to optimize use of PROMs for
  - For patients?
    - So they get what they need as co-producers of care
  - For front line practitioners?
    - So it is easier to serve patients according to needs & preferences
  - For HIT developers?
    - So data is fed forward, integrated and easy to use by patients and clinicians
  - For health systems and commissioning boards to promote transparency, improvement & accountability

How to be fit for an “e” future ??
**Aim**: Patient-centered decision support for co-production of good care, better health & more confidence in self-management.  

**Key Mechanism**: Integrating patient’s voice into flow of care & EHR to co-produce care plans that reflect needs & values.

---

**How to Make PROMs for Individuals Fit for the Future?**

**Patient facilitated Networks**

- Patients Pull

**The Clinical Microsystem**

**Clinical Registries**

- Providers Pull

**Patient & Family System**

- Feed Forward PROMs Data

**Clinical Value Network Features**

- Curated & facilitated**
- Patients with shared problem**
- Subject matter expertise**
- Peer support**
- Information I need for self-care**
- My personal health plan
  
  E.g., PatientsLikeMe, HowsYourHealth

**Clinical Registry Features**

- Feed forward PGHD at point of care for care planning & outcomes tracking**
- Comparative data for practice improvement**
- Research Database as by-product**
- Maintenance of Certification
- PQRS (Physician Quality Reporting System) data feeds
- Data Flows Designed into Work Flows
  
  E.G. SRQ, NPF Registries

---

© Copyright 2013: E.C. Nelson, P. Batalden, S. Lindblad
Selected References


