

Making accountable care work through next generation data solutions: a focus on measurably improving value for patients and populations

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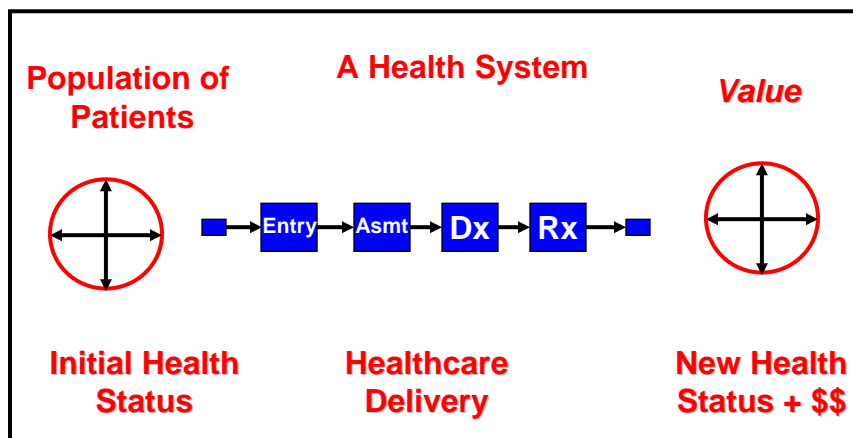
November 1, 2012
ACO Summit
Los Angeles, CA



3 Cases: Dartmouth Spine Center & D-H Heart Failure & Sweden RA Registry

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

What is health care value?

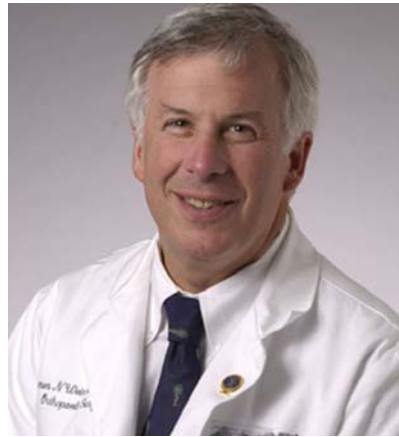


Value = Health outcomes (disease + risk + function) / costs over time²

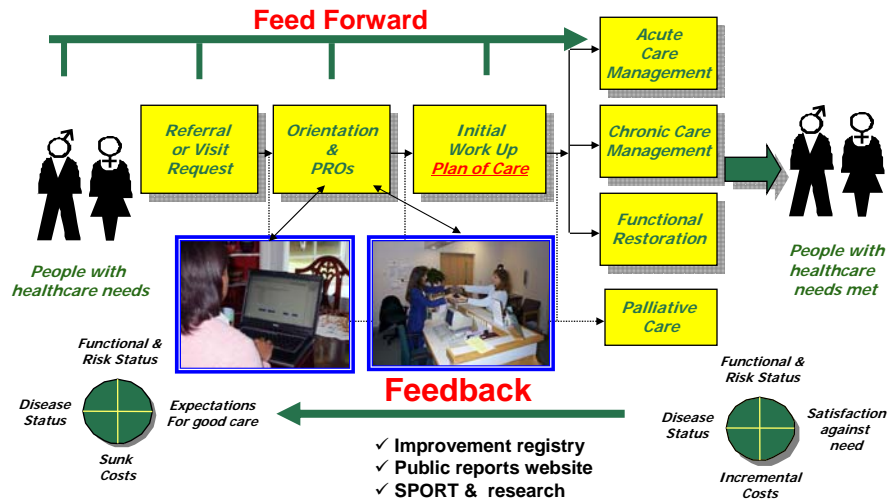
Case 1: A Clinical Practice & PROMs Data

Dartmouth Spine Center

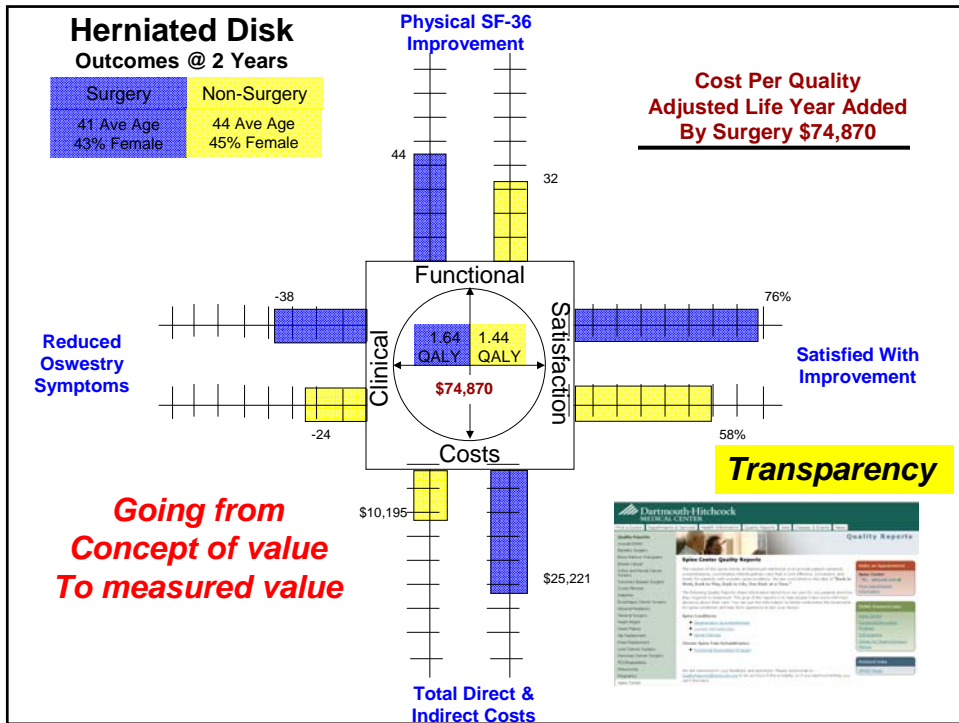
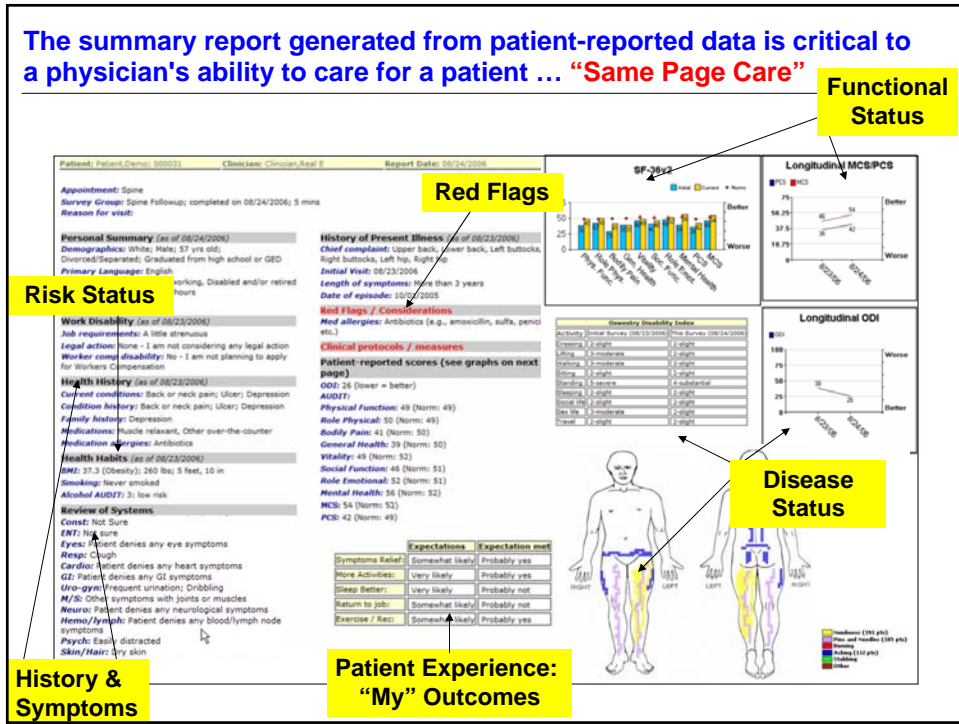
- Started in 1998 by Jim Weinstein
- Innovative interdisciplinary clinical microsystem ... 1 stop shopping
- “Back to work back to play 1 back at a time.” ... patient-centered
- Better care in real time & better research over time



Spine Center: Feed forward (& feedback) system, featuring PROs for engaging patient, shared decision making & making care plan, coordinating care, improving care, measuring, researching & paying for health care value



The summary report generated from patient-reported data is critical to a physician's ability to care for a patient ... "Same Page Care"



Prototype SPORT Calculator

Degenerative Spondylolisthesis Treatment Calculator

Your age: Your sex: Male Female

Please choose what you are hoping to improve with treatment for your back pain (you can come back and choose another later)

1. Physical Activity
 2. Pain
 3. Overall Health

On a 0 to 6 point scale, please rate the following symptoms according to how bothersome they were in the PAST WEEK:

Symptoms	Not bothersome		Somewhat bothersome			Extremely bothersome	
	0	1	2	3	4	5	6
1. Leg pain?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Numbness or tingling in leg, foot or groin?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Weakness in leg or foot?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Leg pain after walking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your score now is on a scale of 24, where 0 is best and 24 is worst

Click on the submit button below and the calculator will show on a graph how this score might change over 24 months after surgical or non-surgical treatment

Personalized risk assessment
 Based on people like me ...
 From research back to patient care

Please email questions or comments to sportcalculator@dartmouth.edu

Pain Score After Treatment

The pictograms below show how many out of 100 patients get better, stay the same, or get worse 12 months after beginning treatment.

Surgery

Non-surgical

Choose another time
 3 months 12 months 24 months

PRIM in eDH

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

Patient History

SUCSESSES

Early Adopters

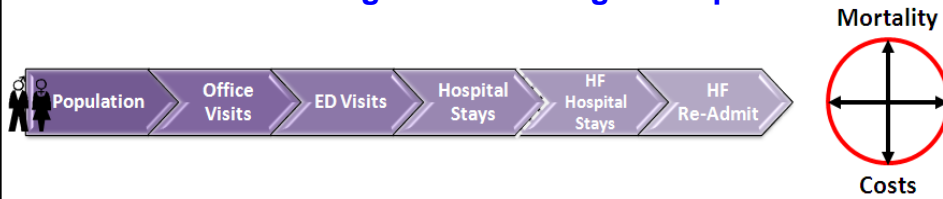
- Primary Care - GIM*
- Pain Center
- Dermatology (Derm, Skin & Hair)*
- Ophthalmology
- Neuro/Oncology, Multiple Sclerosis
- Spinal Center
- Otorhinolaryngology
- Ophthalmology

Scores over time

18 Patient Populations & Data Warehouse & Analytics to Support Patient & Population Management

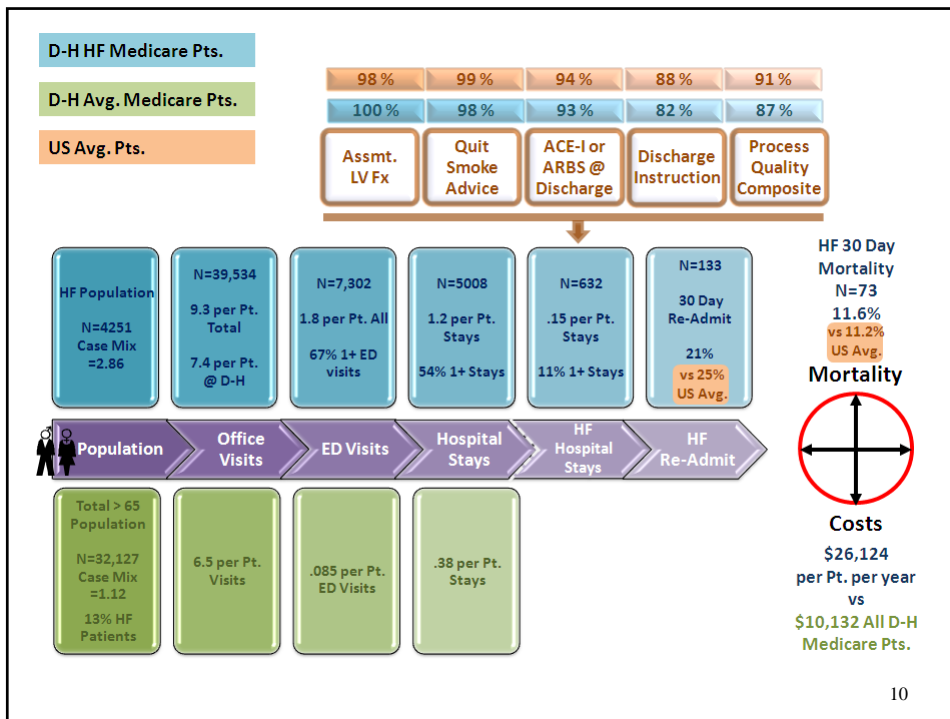
Case 2: A Health System & Available Data

D-H Health System...vision: a sustainable health system with a strategy of measurably improving value & with a Tactical need to take good care of high cost patients



HF Patients' Journeys

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HF Composite

Overall performance for heart failure care (composite)

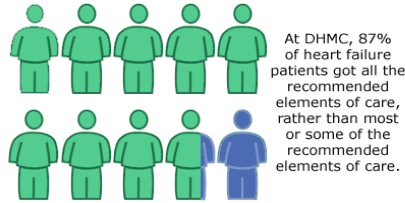
Our goal is to provide all the recommended elements of care to heart failure patients. Patients with heart failure should get:

- Assessment of left ventricular function
- A prescription for ACE inhibitors or ARB medications at discharge.
- Complete discharge instructions
- Advice to quit smoking.

A multi-specialty clinical team has been working to evaluate and improve the care of patients admitted to the hospital with a still looking for ways to improve how care is delivered.

At DHMC from January 2010 to March 2010, 87% of 71 heart failure patients got all the recommended elements of care, rat

OVERALL PERFORMANCE FOR HEART FAILURE CARE (COMPOSITE) (%)



We are interested in your feedback and questions. Please send something you can't find here.

- = received all recommended elements of care
- = received some but not all recommended elements of care

DARTMOUTH - HITCHCOCK MEDICAL CENTER

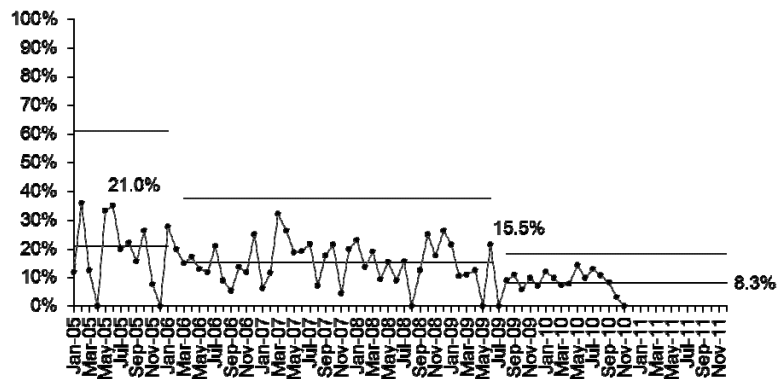
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Heart Failure Readmission Rate

% Readmitted within 30 days of discharge



Remember what Amory Lovins said about hospital days?

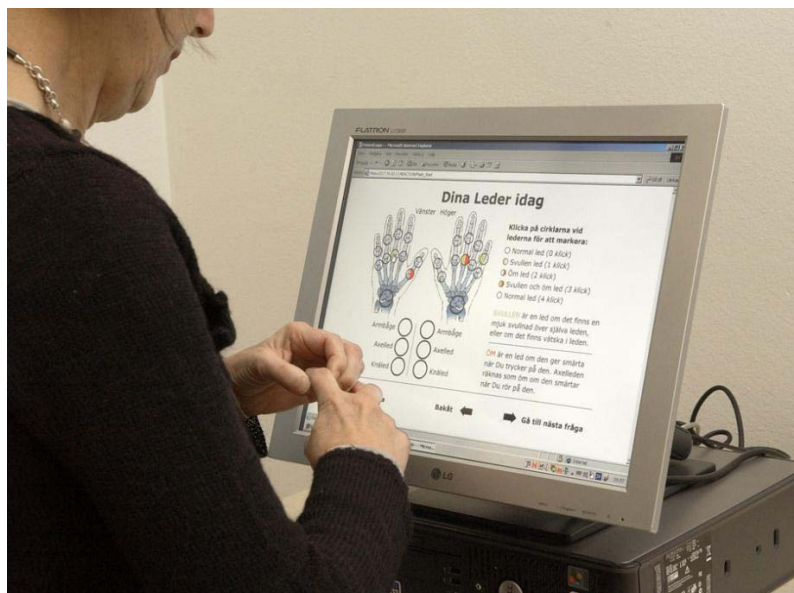
Case 3: A National Health System & PROMs Data

Sweden's 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 PROMs 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 & novel web enabled PROMs data system
- Michael Porter's advice to Sweden's government ... a model for all of Sweden on measurably improving value & gaining a strategic competitive advantage

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Patient Registering Data on Swollen and Tender Joints on a Touch Screen



Summary Overview of a Rheumatology Patient

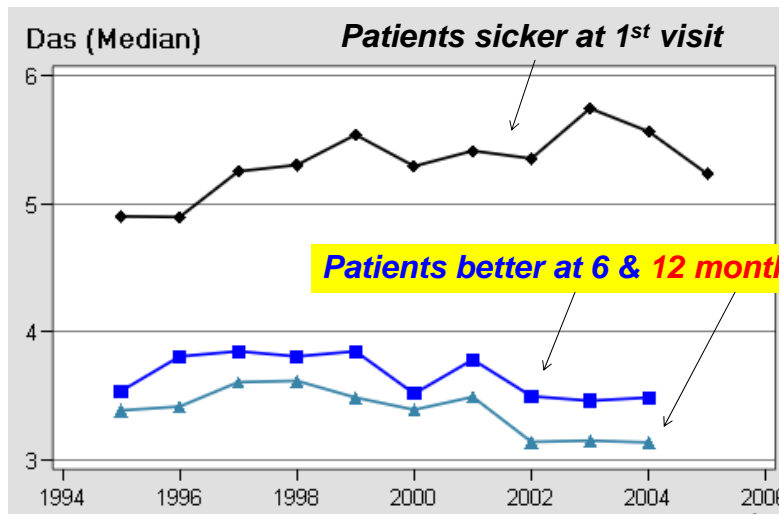
**Case in point:
Swedish National
RA Registry ...
This patient is
doing better ...
N of 1 experiment...
Dropped 2 meds**

År	2010	2010	2010	2010	2010	2010
Dag Månad	05-Jan	23-Feb	28-Mar	03-Jun	05-Sep	08-Dec
Årskontroll						
Månads-Kontroll	0	2	3	5	8	11
MK-grupp	1	3	3	6	9	12
Arbetsförmåga	/	/	/	/	/	/
Allmän hälsa	75	75	71	35	35	36
SR	54	63	48	25	15	5
Läkarbedömning	Hög	Hög	Hög	Måttlig	Låg	Låg
EQ5D	-0,045		-0,045		0,808	0,931
CRP	35	35	20	8	2	1
Spond. artrit, Ank. spond.						
BASFI						
Svullna leder (66)						
Ömma leder (68)						
Daktylit						
Entesit						
Funktionsneds. - HAQ	1,75	1,5	1,63	0,88	0,88	0
Smärta	81	80	75	40	30	27
Svullna leder (28)	12	12	11	2	0	1
Ömma leder (28)	12	12	11	3	1	2
TIRA						
Trombocyter						
DAS28	6.75	6.86	6.49	4.11	2.95	2.7
BASDAI						
DAS28CRP	6.21	6.21	5.84	3.61	2.41	2.79
NSAID	COX1	COX1	COX1	COX1	COX1	COX1
KORT	PRE	PRE	PRE	PRE	PRE	PRE
KORT dos	10/1d	15/1d	10/1d	10/1d	10/1d	10/1d
DMARD 1	MTX	MTX	MTX	MTX	MTX	MTX
DMARD 1 dos	20/1v	20/1v	20/1v	20/1v	20/1v	20/1v
DMARD 2	SAL	SAL				
DMARD 2 dos	2000/1d	2000/1d				
DMARD 3						
DMARD 3 dos						
DMARD 4						
DMARD 4 dos						
Uppföljd månad			0	0	3	6
Uppföljt läkemedel			ENB	REM	REM	REM
Läkemedelsdos			50/1v	200/8v	200/8v	200/8v

January - March

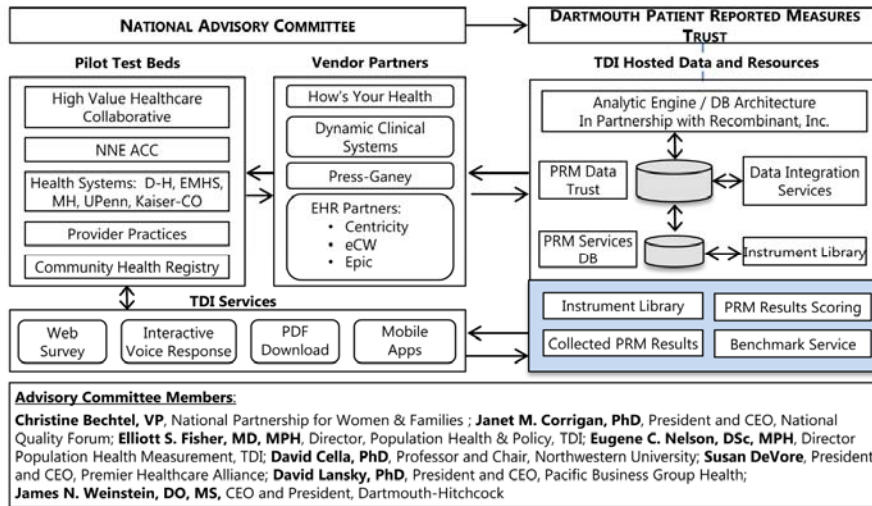
June - December

**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.

Dartmouth PROMs Trust: a collaboratory with every patient a data point



Working Draft

Obstacles & Opportunities

- **EHRs have not been developed** for patient value-focused longitudinal care (but IHC & IORA are both building own EHR to support innovative care & Epic is making headway)
- **PROMs measures and tracking over time** vital for value improvement but **no standard, widely accepted measures** (but PROMIS is potential solution)
- **Patients do not have expectation** for use of patient-centered measures and data as part of routine care (but they like it when they experience it)
- **Providers have not been trained** to make use of patient centered measures and data as part of routine care (but Jim Weinstein says he can't be a good doctor without it)
- **Telehealth**: 24/7/365 shared self-management by "me" and "my team"
- **Transparency**: Value-based accountability & purchasing
- **Precision & parsimony**: Computerized adaptive testing
- **Self-care**: Patient engagement & empowerment
- **EHRs & PHRs**: Electronic medical records & patient-controlled health records
- **Innovation Testing**: Use to test impact of new care models e.g. IORA, ACOs, bundled payments
- **Collaboratories & Warehouses**: Measure trusts combining patient reported data with other streams (clinical, genetics, biomarkers, treatments, costs, etc.) & analytics

Take Home Points

1. ACOs must focus on “end user value”
2. ACO data systems need to support real time delivery of high value care to individual patients and measuring value of care delivered to patients & populations
3. Build patient-centered, value focused data solutions into processes and care flows to improve outcomes & efficiency & to be measurably accountable for value

**ACOs Must Break into
A New High Value Space**



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spares

Case 4

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



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PHR

Patient Home Page

A screenshot of a web browser displaying the MyGroupHealth patient home page. The browser window title is "MyGroupHealth for Members Home Page - Microsoft Internet Explorer". The address bar shows "https://member-qa.ghc.org/index.html". The page features a navigation menu on the left for user "PETE ROGERS", including options like "Update Your Profile", "MANAGE YOUR HEALTH CARE & COVERAGE", "Messages", "Visit & Call Summaries", "Medical Record", "Medications", "Health Profile", "HEALTH INFORMATION", "Health & Wellness Resources", "Northwest Health Magazine", "Classes & Events", and "SEND YOUR WAY AROUND GROUP HEALTH". The main content area is titled "MANAGE YOUR HEALTH CARE & COVERAGE" and includes sections for "APPOINTMENTS" (with links for "Schedule Appointments" and "Current Appointments"), "MESSAGES" (with "No new messages" and "E-Mail Health Care Team"), "VISIT & CALL SUMMARIES" (with "After-Visit Summaries", "Consulting Nurse Logs", and "Urgent Care & Hospital Services"), "MEDICAL RECORD" (with "Lab & Test Results", "Immunizations", "Blood Pressure & Weight", "Health Conditions", "Allergies", "Letters & Vision Prescriptions", and "Routine Care Reminders"), "NEW SERVICES" (with "Wellness Site" and "Access Your Children's Online Records"), and "FEATURED CONTENT" (with "Flu Vaccine Recommended" and "Share Your Story Health Story"). A "LOG OUT" button is visible in the top right corner of the page.

Example of the eHRA Questions

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

Your Progress
Your completed sections are marked.

- General Information
- Medical History
- Nutrition
- Physical Activity
- Alcohol & Drug Use**
- Tobacco Use
- Sexual Health
- Reproductive Health
- Depression
- Stress Management
- Preventive Care
- Workplace Health
- Hobbies & Interests
- Review & Submit

Patient Report Delivered by Web Portal

Next Actions [PRINT THIS PAGE](#)

To see details, click on items in the left column. Or, the Full Report tab displays all details.

Chronic care 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

Risk Status tracking

Current medical conditions	SEE DETAILS	POOR CONTROL	FAIR CONTROL	GOOD CONTROL
Hypertension Care				
Asthma Care				
Depression Care				

Future disease risk	SEE DETAILS	STRONG RISK	MODERATE RISK	LOW RISK
Colorectal Cancer Risk				
Skin cancer risk				
Diabetes Risk				
Lung Cancer Risk				
Cardiovascular Disease				

Lifestyle	SEE DETAILS	CHANGE NEEDED	CONSIDER CHANGES	HEALTHY
Body mass index (BMI)				
Nutrition				

Report Delivered to the Clinical Team

The screenshot displays the Epic EMR interface for a patient named HARRY MOMENTUMWEB. The main window shows a 'Health Profile - Primary Care Team Report' with the following details:

- Document Text:** Health Profile - Primary Care Team Report
- Patient Information:** Patient Name: HARRY MOMENTUMWEB, Gender: Male, Date of Health Profile: 10/08/2007, Age (at time of HRA): 51, Previous Health Profile: None.
- Disease Management Concerns:** Diabetes, Hypertension (highlighted in red).
- Other Issues to Consider:** Weight, Eating habits, Physical activity.
- Chronic Conditions:** Diabetes, Poor control.
- Clinical References:** Diabetes type: Type 2, HbA1c: 9.1%, Microalbumin test: Negative.

A yellow callout box with the text 'Call to action' is positioned over the 'Disease Management Concerns' section, with arrows pointing to the red text 'Diabetes' and 'Hypertension'.