From Research to Action: 16 Years at Pittsburgh Regional Health Initiative

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Pittsburgh Regional Health Initiative

The 20th Princeton Conference
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Jewish Healthcare Foundation: “A Think, Do, Train and Give Tank”

- A public charity with two supporting organizations
  - Pittsburgh Regional Health Initiative (PRHI)
  - Health Careers Futures (HCF)
We respond to the available data
In the Beginning (circa 1997): What We Knew

- Lucian Leape’s “Error in Medicine”
  - Avoidable in-hospital deaths equivalent to three jumbo jet crashes every two days
  - 180,000 in-hospital deaths partly as a result of iatrogenic injury
In the Beginning: What We Observed in Health Care

- Chaos
- Uncertainty
- Random Behaviors
- Work-Arounds
- Confusion
- Disorder
- Errors
- High Turnover
- Secrecy
Safety? Quality? Efficiency?

700 + Unique Pathways
PRHI’s Early Focus on Value

For every $1:

We *currently* pay:

- Preventable Complications
- Unnecessary Treatments
- Inefficiencies
- Errors

We *should* pay:

Cost Savings

Services That Add Value

$0.40 Waste

$0.60 Value

100% Value for Less Cost

$0.60 Value

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What and Why: Pittsburgh Regional Health Initiative

- Pittsburgh Regional Health Initiative (PRHI)
  - A not-for-profit, regional, multi-stakeholder collaborative formed in 1997 by Karen Feinstein and Paul O’Neill
  - An initiative of a business group, the Allegheny Conference on Community Development

- PRHI’s message
  - Dramatic quality improvement (approaching zero deficiencies) is the best cost-containment strategy for health care
We Applied Lean Thinking to Health Care’s Problems

- Problems identified and solved immediately
- Rapid root cause analysis
- Organized work areas
- Concise communication
- Active involvement of managers
  - “Go and see”
  - On the floor
- Intense respect for the employee:
  - Every employee has what they need, when they need it to succeed
  - Career development
- Team problem solving to meet customer need
- Infrastructure for improvement
Early PRHI Successes

- **86% Reduction**
  - in medication errors

- **35 to Zero!**
  - defective charts

- **17% Drop**
  - in pediatric clinic
  - wait times

- **180 to Zero!**
  - Lost patient hours per month
  - due to ambulance diversions

- **68% Drop**
  - in CLABs in 34 regional hospitals

- **50% Fewer Readmissions**
  - w/ COPD focus

- **50% Reduction**
  - in pap smear
  - sampling defects

- **Efficiency Increased**
  - 100%
  - in pathology lab

- **>20% Decline**
  - Nosocomial
  - C. difficile
  - infections

- **100% Compliance**
  - w/guidelines & aspirin
  - use in a diabetes clinic

- **100% Reduction**
  - in nurse turnover

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More Data (circa 2003): Under Treatment
The System is Not Working Well for Patients

**Percent of Americans receiving recommended care for preventive, chronic and acute conditions**

- **55%** Receive recommended care
- **45%** Do not receive recommended care

Source: Elizabeth A. McGlynn and Robert H. Brook, Rand, June 2003
PRHI found that approximately 1 in 5 patients discharged from the hospital returns within 30 days.
Our data mining identified chronic obstructive pulmonary disease (COPD) as a prominent cause of hospital admissions (4th highest) and readmissions (3rd highest).
The Solution Coordinates Transition Between Hospital and Community

**Hospital**

Patient education to address causes of admission

*Patient is discharged without training in use of inhaler

* MD gives patient prescription for inhaler, but no training

* Patient gets inhaler from pharmacy, but no training

* Patient fails to use inhaler properly, leading to hospitalization

* Patient is treated with nebulizer during hospital stay

**Community**

Improved patient education and support* in the community

* *Care Mgt Clinical Pharmacy Patient Engagement Behavioral Health

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COPD: Project Results

- Readmissions reduced by 44%
- $160,000+ saved
- Net savings of $80,000+ after cost of Care Manager

% of Patients Admitted for COPD Exacerbation and Readmitted within 30 Days for COPD or Pneumonia

Jan-Dec 2008: 15%
Jan-Dec 2009: 44%
Reduction: 44%
Data on Spending (circa 2007 and beyond) Leads to Complex Patients

Concentration of Health Care Spending in the U.S. Population, 2007

The 5% of the U.S. population with highest health care expenses was responsible for nearly half of total health care spending.

Percent of Total Health Care Spending

<table>
<thead>
<tr>
<th>Percent of Population, Ranked by Health Care Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 1%</td>
</tr>
<tr>
<td>22.9%</td>
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</tbody>
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The Complex Patient

Who is frequently hospitalized?

Do you know your customer?
Let the Data Guide Our Work

The Complex Patient

- Behavioral Health and Substance Abuse
- HIV/AIDS
- COPD

End of Life

- Skilled Nursing

Chronic Disease

- PRHI Readmission Briefs
- PRHI Readmission Brief: Chronic Obstructive Pulmonary Disease
- PRHI Readmission Brief: HIV/AIDS

HIV/AIDS

PRHI Readmission Brief: Patterns of Hospitalizations Among HIV-Positive Patients in Southwestern Pennsylvania

PRHI Readmission Brief: A Manual for Preventing Hospitalizations

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The Systems Vision: Transforming the Care of Complex Patients

Essential Services

System Requirements

Collaboration and Integration
Medication Reconciliation
Informed, Activated, Discerning Consumers, particularly at End-of-Life
Screening and Tx

Hospice/Palliative
Long-Term Care
Rehab
Hospital
Emergency Services
Specialty Care
Primary Care

Data to Treat, Measure, Evaluate
Perfect Patient Care
Rewards for Collaboration

Care Mgt
Clinical Pharmacy
Patient Engagement
Behavioral Health
Health IT
QI Training
Performance Incentives

Informed, Activated, Discerning Consumers, particularly at End-of-Life

Perfect Patient Care

Rewards for Collaboration
PRHI Today:
Demos Driving Findings to Front Line

- HIV-Positive Patients
- Patients with Behavioral Health Comorbidities
- Patients in Skilled Nursing Facilities
- COPD Patients
COPD: New Findings
Half of Discharges have Comorbid CHF and/or CAD
Strategy: Expanding the Capacity of PCPs to Manage Complex Patients

- Supports team-based care coordination of chronic medical conditions, from admission
- Provides added-value, primary care support services beyond the means of small practices
- Utilizes excess hospital space
Behavioral Health: Findings

- Our research documented high rates of comorbid depression and substance use disorders among patients with common chronic diseases

- Response requires better integration of behavioral health in primary care settings
Behavioral Health: From Findings to Front Line Phase II (2012-2015)

Bringing IMPACT (depression) & SBIRT (for SUD) to Primary Care

- **Project I (2008-10): Integrating Treatment in Primary Care**
  - Funders: Fine Foundation ($276K) Staunton Farm ($200K), JHF ($765K)
  - Local demo in community health centers

- **Project II (2011-13): Partners in Integrated Care (PIC)**
  - Funder: AHRQ ($3.4 million)
  - National demo: PA (PRHI), WI (WCHQ) and MN (ICSI)

- **Project III (2012-15): Care of Mental, Physical, and Substance Use Syndromes (COMPASS)**
  - Funder: CMMI Grant ($18 million)
  - National demo: ICSI (lead), PRHI, Kaiser and Mayo
### Skilled Nursing Facility Findings: Highest 30-Day Readmissions

<table>
<thead>
<tr>
<th>Kind of Discharge</th>
<th># of Admits</th>
<th>Share of Admits</th>
<th>30-Day Readmit Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Home</td>
<td>466,226</td>
<td>57%</td>
<td>14%</td>
</tr>
<tr>
<td>To Home Health Service in Anticipation of Covered Skilled Care</td>
<td>141,309</td>
<td>17%</td>
<td>21%</td>
</tr>
<tr>
<td><strong>To Skilled Nursing Facility</strong></td>
<td>112,799</td>
<td>14%</td>
<td><strong>24%</strong></td>
</tr>
<tr>
<td>To Rehabilitation, Long-Term, or Critical Care Facility</td>
<td>57,018</td>
<td>7%</td>
<td>21%</td>
</tr>
</tbody>
</table>

SNF: From Findings to Front Line (2012-2015)

- **Project I**: Reduce Avoidable Hospitalizations Using Evidence-based interventions for Nursing Facilities (RAVEN)

- **Funder**: Center for Medicare & Medicaid Innovation ($19.1 million over 4 years)

- **Partners**: UPMC Aging Institute, Jewish Healthcare Foundation, Robert Morris University, Excela Health, Heritage Valley Health System

- **Sites**: 19 SNFs

- **Strategy**

PRHI Research:

- **1 in 4** HIV-positive patients returned to the hospital within 30-days of discharge
- Common chronic diseases are among top 10 reasons for admission
- Nearly half of HIV-positive admissions have depression and/or substance abuse
- High readmission rates may be attributed to flawed transitions in care – just like other chronic medical problems

Centers for Disease Control:

- Of the 942,000 Americans who know they are HIV-positive:
  - Less than half are receiving treatment
  - Only 35% have achieved low viral load
HIV: From Findings to Field (2012-2014)

**Project:** The Minority AIDS Initiative (2012-2014)

**Funder:** Pennsylvania Department of Health, HRSA

**Sites:** 15 diverse AIDS service organization across Pennsylvania

**Strategy:** Help organizations bring HIV-positive patients who have been “lost to care” back into treatment using PPC quality improvement methods and motivational interviewing coaching

**Initial Outcomes (first six months):**
- 300 patients identified as lost to care
- 208 contacted
- 138 have had 1+ medical appointment
Looking Forward: Preparing Providers and Patients for an Era of Data-Driven Health Care
Where the Data Are Going: Multiple Performance Measures

Hospital Value-Based Purchasing Program Measures:

8 Patient Satisfaction Measures (30%)
1. Nurse Communication
2. Doctor Communication
3. Hospital Staff Responsiveness
4. Pain Management
5. Medicine Communication
6. Hospital Cleanliness and Quietness
7. Discharge Information
8. Overall Hospital Rating

13 Clinical Process of Care Measures (45%)
1. Fibrinolytic Therapy Received within 30 Minutes of Hospital Arrival
2. Primary PCI Received within 90 Minutes of Hospital Arrival
3. Discharge Instructions
4. Blood Cultures Performed in the ED Prior to Initial Antibiotic Received in Hospital
5. Initial Antibiotic Selection for CAP in Immunocompetent Patient
6. Prophylactic Antibiotic Received within One Hour Prior to Surgical Incision
7. Prophylactic Antibiotic Selection for Surgical Patients
8. Prophylactic Antibiotics Discontinued within 24 Hours After Surgery
9. Cardiac Surgery Patients with Controlled 6 a.m. Postoperative Serum Glucose
10. Postoperative Urinary Catheter Removal on Postoperative Day 1 or 2
11. Surgery Patients on a Beta Blocker Prior to Arrival That Received a Beta Blocker During the Perioperative Period
12. Surgery Patients with Recommended Venous Thromboembolism Prophylaxis Ordered
13. Surgery Patients Who Received Appropriate Venous Thromboembolism Prophylaxis within 24 Hours

3 Clinical Outcome Measures (25%)
1. Acute Myocardial Infarction 30-day mortality rate
2. Heart Failure 30-day mortality rate
3. Pneumonia 30-day mortality rate
Quality Is Increasingly Transparent

**GENERAL HOSPITALS**

- CMS Core Measures
- Joint Commission
- Press-Ganey Scores
- HCAHPS
- CMS Hospital Compare
- *US News and World Report* “Best Hospital” lists
- Leapfrog
- Pay-for-Performance
- Public reporting agencies
- ACO Shared Savings program
- State DOH Licensure

**AMBULATORY CARE**

- NCQA Certification (PCMH)
- Pay-For-Performance

**LONG-TERM CARE**

- CMS Nursing Home Compare
- State DOH Licensure

**FOR-PROFIT SERVICE LINES**

- Shareholders
- Customers
Liberating Data for Healthcare Innovations

- New healthdata.gov initiative through CMS
- Todd Park, Chief Technology Officer of U.S. led data boot camp in Pittsburgh (July 2011) and keynoted Leadership Series at PRHI (September 2011)
The Future: Where Quality Improvement Meets Information Technology (QIT)

- State-of-the-art center will train the current and next generation of healthcare workers to use health data to drive quality improvement