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

Karen Wolk Feinstein,PhD

President & Chief Executive Officer

Jewish Healthcare Foundation

Pittsburgh Regional Health Initiative

Spreading Quality,
Containing Costs.

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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)

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We respond to the available data

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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

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In the Beginning: What We Observed in Health Care

- *Chaos*
- *Uncertainty*
- *Random Behaviors*
- *Work-Arounds*
- *Confusion*
- *Disorder*
- *Errors*
- *High Turnover*
- *Secrecy*

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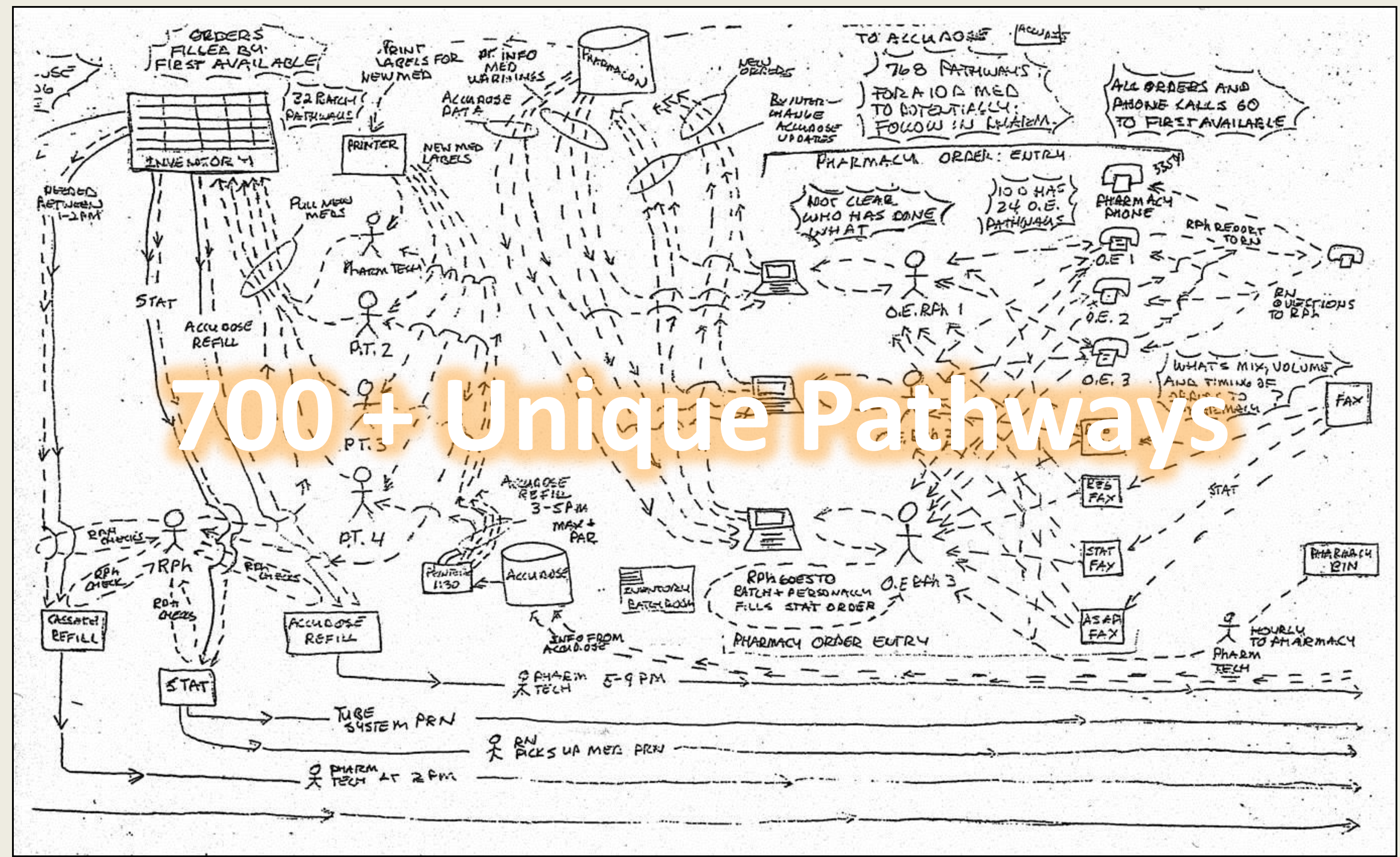
Safety? Quality? Efficiency?



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PRHI's Early Focus on Value

For every $1:

We *currently* pay:

$0.40 Waste / $0.60 Value
Preventable Complications
Unnecessary Treatments
Inefficiencies
Errors
Services That Add Value

$0.40 Waste

$0.60 Value

We *should* pay:

100% Value for Less Cost
Cost Savings
Services That Add Value

100% Value for Less Cost

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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

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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

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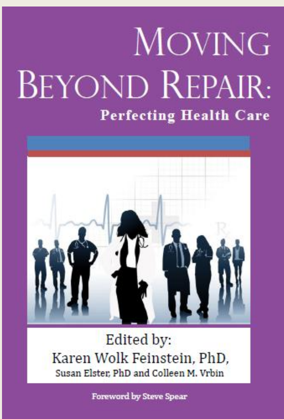
Early PRHI Successes

86% Reduction
in medication errors

35 to Zero!
defective charts

68% Drop
in CLABs in 34 regional hospitals



50% Reduction
in pap smear sampling defects

50% Fewer Readmissions
w/ COPD focus

17% Drop
in pediatric clinic wait times

Efficiency Increased 100%
in pathology lab

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

100% Reduction
in nurse turnover

>20% Decline
Nosocomial
C. difficile
infections

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

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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

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

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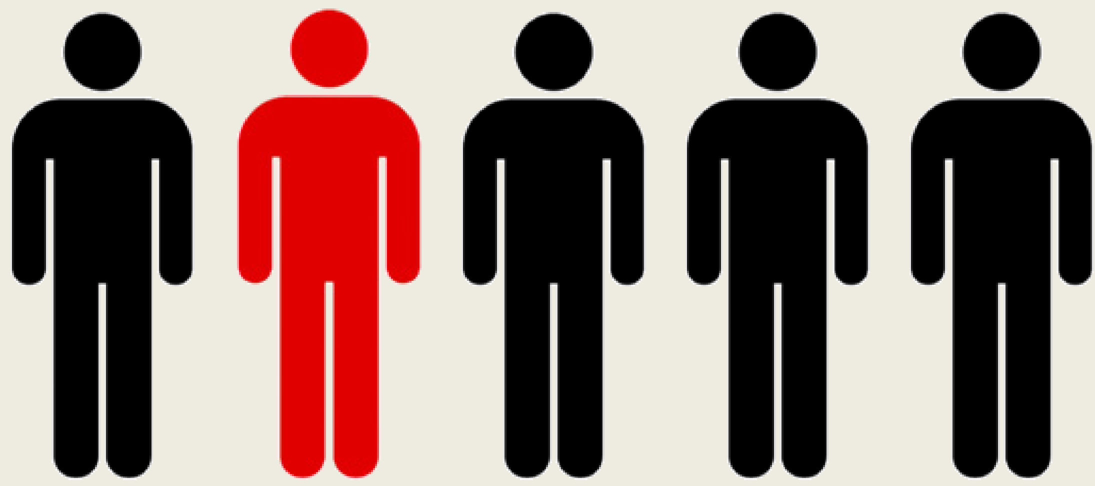
Data Source

PRHI found that approximately **1 in 5** patients discharged from the hospital ***returns*** within 30 days



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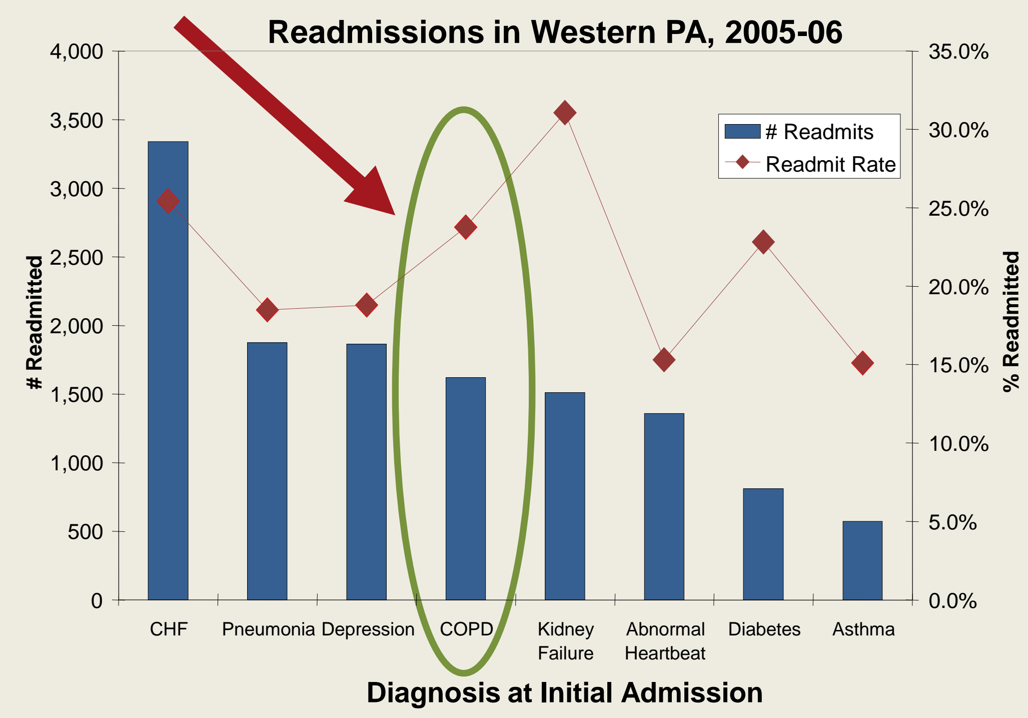
Example of PRHI's Response COPD: Findings (2007-2008)

- Our data mining identified chronic obstructive pulmonary disease (COPD) as a prominent cause of hospital admissions (4th highest) and readmissions (3rd highest)



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The Solution Coordinates Transition Between Hospital and Community

HOSPITAL

COMMUNITY

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

Patient education to address causes of admission

Improved patient education and support* in the community

*Care Mgt + Clinical Pharmacy + Patient Engagement + Behavioral Health

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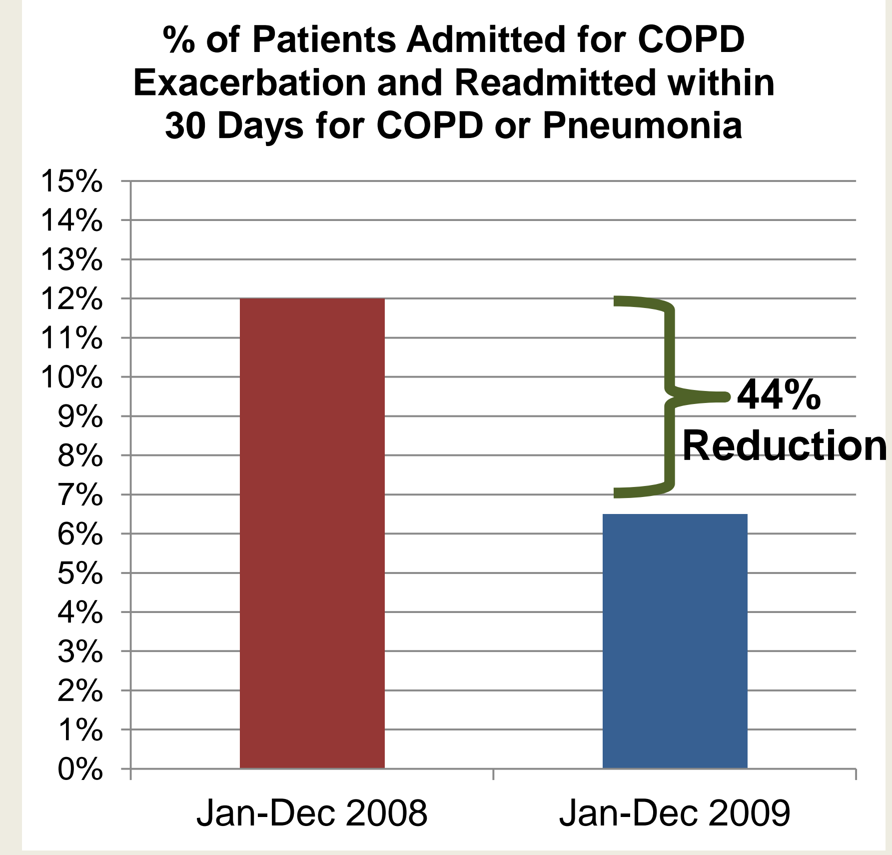
COPD: Project Results

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



Data on Spending (circa 2007 and beyond) Leads to Complex Patients

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

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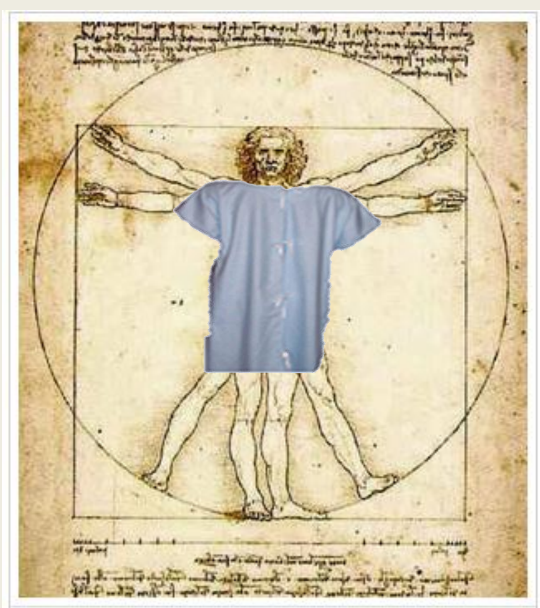
The Complex Patient

Who is frequently hospitalized?



Do you know your customer?

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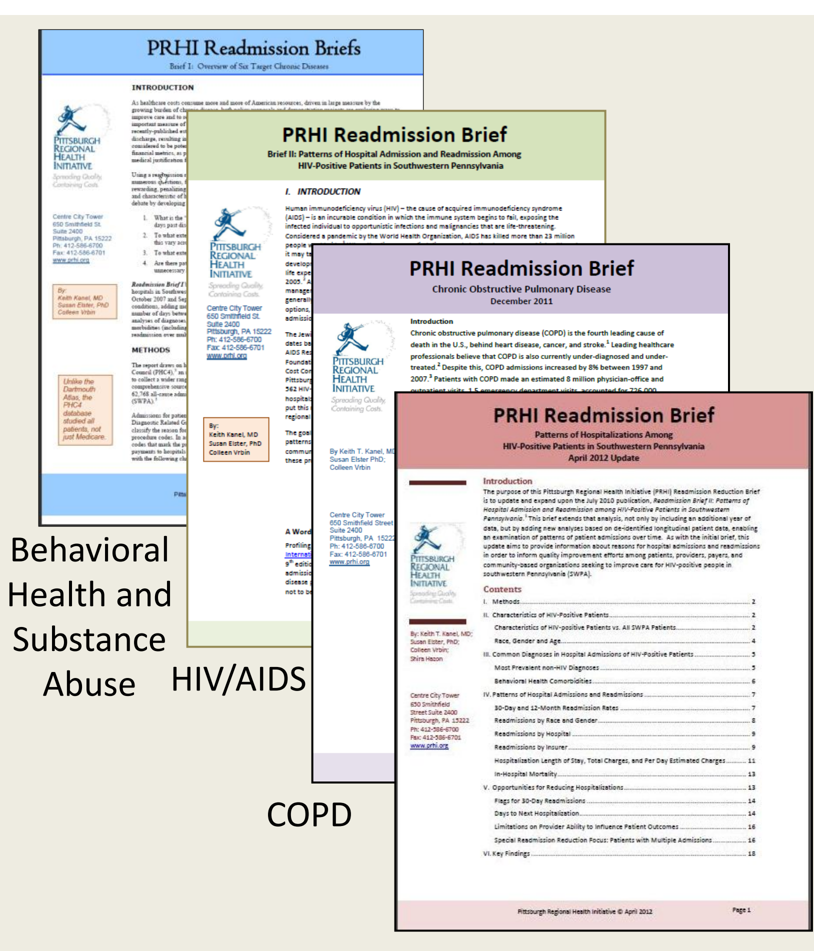
Let the Data Guide Our Work

The Complex Patient

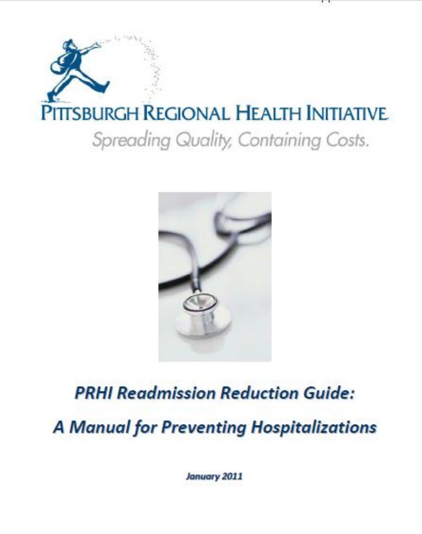


Behavioral Health and Substance Abuse

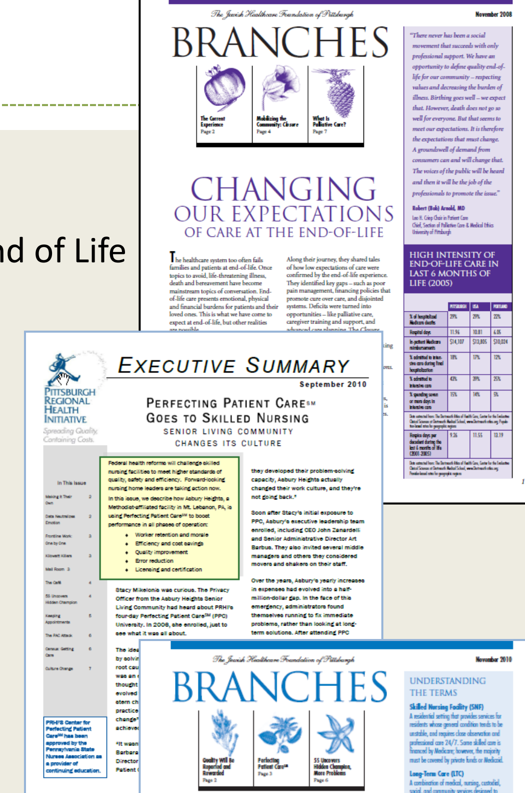
HIV/AIDS

COPD

HIV/AIDS



Chronic Disease



End of Life

BRANCHES

Perfecting Care and Work in Skilled Nursing

Skilled Nursing

The Systems Vision:
Transforming the Care of Complex Patients

Across Care Settings

Collaboration and Integration

Medication Reconciliation

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

Screening and Tx

Data to Treat, Measure, Evaluate

Perfect Patient Care

Rewards for Collaboration

Hospice/Palliative

Long-Term Care

Rehab

Hospital

Emergency Services

Specialty Care

Primary Care

Care Mgt

Clinical Pharmacy

Patient Engagement

Behavioral Health

Health IT

QI Training

Performance Incentives

Essential Services

System Requirements

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JHF Current Programs
Keeping People Out of Hospitals

PRIMARY CARE RESOURCE CENTER

MAI
Minority AIDS Initiative

PARTNERS IN INTEGRATED CARE

Safety Net Medical Home Initiative

Closure
(End-of-Life and Palliative Care)

Health Careers Futures

Lean Engagements

QIT Center
Where Quality Improvement meets Information Technology

Long-Term Care Champions

The Fine Awards
Excellence in QI

PERFECTING PATIENT CARE℠ UNIVERSITY

Patient Safety Fellowship

Salk Fellowship

REACH
Regional Extension Center

HIV QI in AIDS Service Organizations

QIT Health Innovators Fellowship

TOMORROW'S HEALTHCARE™

RAVEN
Reduce Avoidable Hospitalizations among Nursing Facility Residents

COMPASS
Care Of Mental, Physical, And Substance Use Syndromes

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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

COPD
N=57,289

COPD only
N=28,916

COPD, CHF
N=8,868

CHF only
N=23,621

CHF
N=61,475

COPD, CHF, CAD
N=7,749

COPD, CAD
N=11,756

CHF, CAD
N=21,237

CAD only
N=53,957

CAD
N=94,699

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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

PCP Refers Patient for PCRC Management

Nurse Care Managers

PRIMARY CARE RESOURCE CENTER

Chronic Disease Care Coordination

Spirometry

Pharmacist Consults

Anticoagulation Clinic

Behavioral Health Screening

Smoking Cessation

Self-Management

Support Reaching “Meaningful Use” EHR Targets

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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

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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

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Skilled Nursing Facility Findings: Highest 30-Day Readmissions

Kind of Discharge	# of Admits	Share of Admits	30-Day Readmit Rate
To Home	466,226	57%	14%
To Home Health Service in Anticipation of Covered Skilled Care	141,309	17%	21%
To Skilled Nursing Facility	**112,799**	**14%**	**24%**
To Rehabilitation, Long-Term, or Critical Care Facility	57,018	7%	21%

Source: Pennsylvania Health Care Cost Containment Council, October 2007 – September 2009 (24-month sample), an all-payer database. Data is for the 11-county region of southwestern Pennsylvania (813,896 discharges).

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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

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HIV-Positive Patients: Findings (2010)

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*

PRHI Readmission Brief

Brief II: Patterns of Hospital Admission and Readmission Among HIV-Positive Patients in Southwestern Pennsylvania

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I. INTRODUCTION

Human immunodeficiency virus (HIV) – the cause of acquired immunodeficiency syndrome (AIDS) – is an incurable condition in which the immune system begins to fail, exposing the infected individual to opportunistic infections and malignancies that are life-threatening. Considered a pandemic by the World Health Organization, AIDS has killed more than 23 million people worldwide.[1] When the disease was first discovered, death rates were very high: although it may take 10-15 years for an HIV infection to transition to AIDS, life expectancy following the development of AIDS was typically a year. With the discovery of effective medications, however, life expectancy at HIV diagnosis increased from 10.5 years to 22.5 years between 1996 and 2005.[2] As a result, providers who work with patients with HIV/AIDS now share many of the management challenges common to providers of older patients with chronic diseases more generally: balancing treatments for multiple co-morbidities, responding to changing treatment options, successfully engaging patients in self care, and preventing repeated hospital admissions.

The Jewish Healthcare Foundation's (JHF) commitment to the community struggling with HIV dates back to 1992-93, when JHF became the fiscal agent for the Ryan White Comprehensive AIDS Resources Emergency (CARE) Act in Southwestern Pennsylvania (SWPA). As a result, the Foundation responded to the opportunity, made possible by the rich Pennsylvania Health Care Cost Containment Council (PHC4)[3] all-insurer, hospital admissions database, and requested that Pittsburgh Regional Health Initiative (PRHI) analyze characteristics of hospitalizations among the 562 HIV-positive patients over the age of 18 who were admitted a total of 1,072 times to hospitals in an 11-county SWPA region[4] between October 1, 2007 and September 30, 2008. To put this number in perspective, approximately 900 people receive medical care from two regional HIV/AIDS hospitals and clinics.

The goal of this monograph is to provide information about HIV-positive patients and their patterns of hospital admission and readmission and to inform the network of clinical and community providers serving the HIV-community. The eventual aim of this research is to help these providers to continually improve patient care. The analyses focus on the following:

By:
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Susan Elster, PhD
Colleen Vrbin

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HIV-Positive Patients: Findings (2012)

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/AIDS national portrait: *Why this is important*

Percentage of HIV-Infected Individuals Engaged in Selected Stages of the Continuum of HIV Care, 2010

Out of the more than one million Americans with HIV:

80% — 942,000 know they are infected

62% — 726,000 were linked to HIV care

41% — 480,000 have stayed in HIV care

36% — 437,000 are receiving treatment

Source: Centers for Disease Control and Prevention, Today's HIV/AIDS Epidemic, June 2012

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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

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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

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

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

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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

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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)

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The Future: Where **Q**uality **I**mprovement Meets **I**nformation **T**echnology (QIT)

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

Data

Analysis

Quality Improvement

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