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Anatomy of Readmissions

What this means for hospitals

How long have we been talking about readmissions?

- " Utilization and quality control (groups) are required to randomly select specific potential problematic cases for review (for example, readmissions within 15 days)"

What year was this published in the federal register?

Recent SG2 Survey

Over the next year, how important will it be for your organization to reduce 30-day readmissions?

- 94% - Very important
- 6% - Moderately important
- 0% - Not important

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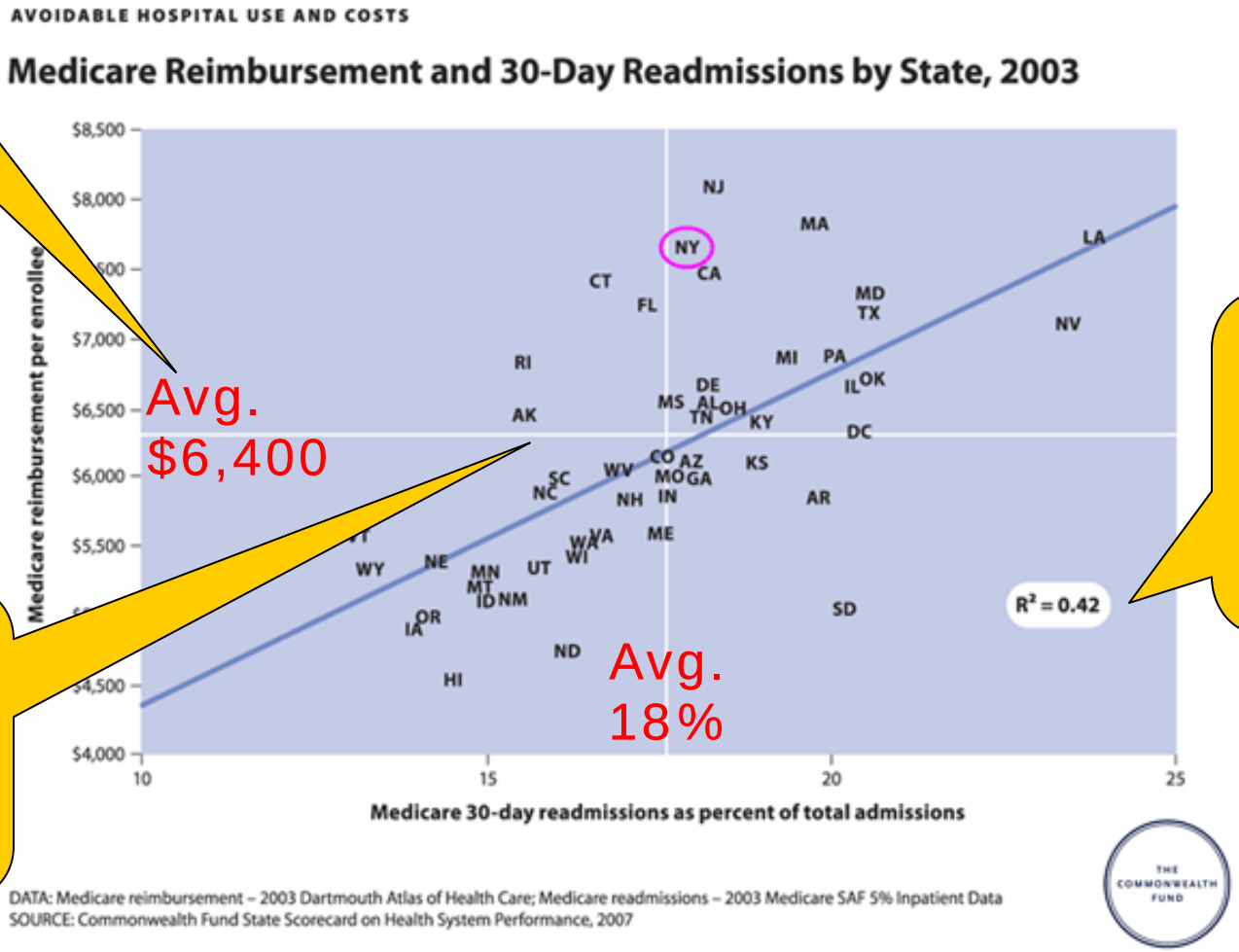
Readmissions are linked to total Medicare spend, with wide variation by state

Cost per Medicare Enrollee not per readmission

Large variation across states suggests opportunities for improvement

Higher readmissions lead to higher Medicare spend – and create a large target for CMS



Source: Commonwealth Fund; Lit search

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What we've learned about Readmissions

- Readmission rates and spending are significant
  - ~18% of patients readmitted within 30 days of discharge = $15B in 2005
- Reducing readmission rates is both important and feasible
  - Wide variation: ~12% to ~22% by city in 2005
  - Medicare estimated savings > $100B over 10 years if high-cost areas brought to national average
- Many readmissions are preventable
  - 75% of all 30-day Medicare readmissions were potentially preventable, with potential savings of $12B to Medicare, according to Medicare Payment Advisory Commission
- CMS is targeting readmissions for three diagnoses:
  - Congestive heart failure (CHF), Pneumonia, and Acute Myocardial Infarction (AMI):
    - In the top 10 diagnoses for Medicare hospital discharges (CHF #1, Pne. #2, AMI #8)
    - These 3 makeup ~13% of total Medicare hospitalizations in 2006
    - 2008 CMS began collecting information on these readmissions
    - 2009 CMS began reporting back readmission data to selected hospitals
    - 2010 CMS plans to expand readmission data collection and reporting
    - CMS is tasked with accomplishing the $$$ billion in savings earmarked in the Healthcare legislation

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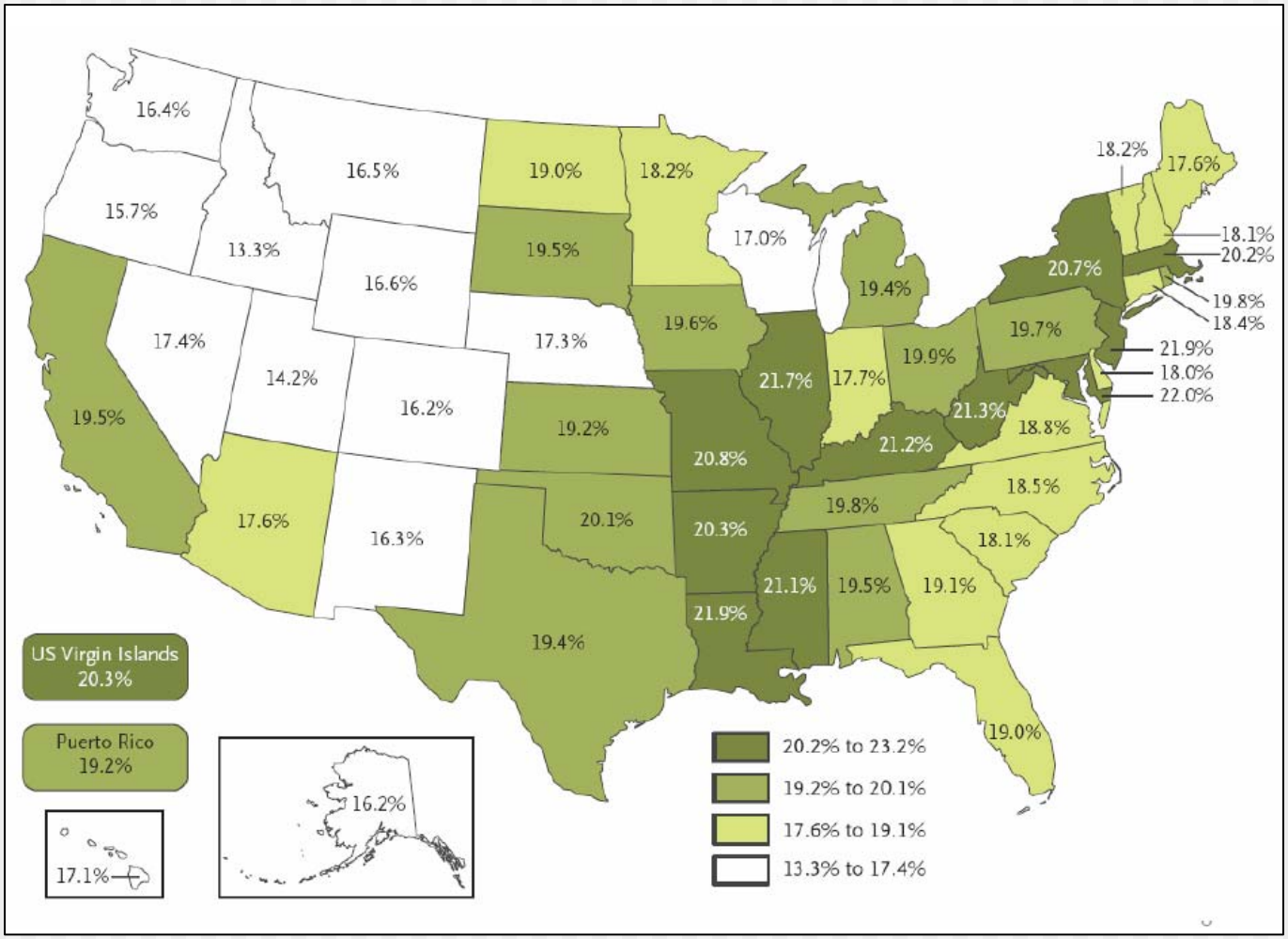
State Variation in Readmission Rates



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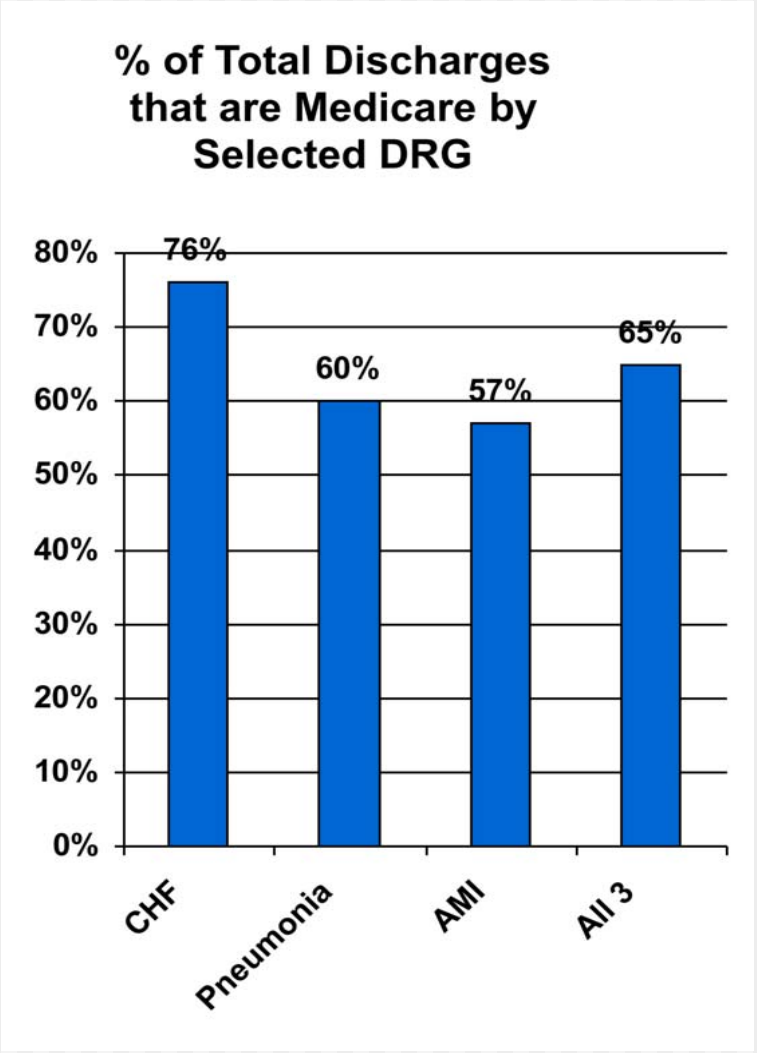
CMS targeting readmissions in three diagnoses

- Congestive heart failure (CHF), Pneumonia, and Acute Myocardial Infarction (AMI) are targeted under recently published CMS proposed rules
  - In 2010 three readmission measures may be calculated using Medicare administrative claims data: Heart failure (HF) 30-day risk standardized readmission measure, Pneumonia (PN) 30-day risk standardized readmission measure, Heart Attack (AMI) 30-day risk standardized readmission measure (for Medicare patients) (pg 23648)
  - CMS has suggested 2 payment penalties and 1 public reporting option for reducing readmissions and is currently taking public comment. (pg 23674)
- These diagnoses represent substantial volume and financial significance in the Medicare system
  - These 3 DRGs are in the top 10 of Medicare hospital discharges (CHF #1, Pneumonia #2, AMI #8)
  - These 3 DRGs made up ~13% of total Medicare hospitalizations in 2006
  - These 3 DRGs had 15-day readmission rates of 10-13% in 2005
    - 2005 Medicare spending on 15-day readmissions*: CHF #1, Pneumonia #3, AMI #4



*Rank order refers to medical, not surgical conditions

Source: 2006 HCUP data; 2005 MedPAC data (15-day readmissions data); CMS Proposed Rules Federal Register (April 30, 2008)

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Potential Losses from CHF in a Typical Hospital

Metric	Assumptions	Volume	Costs
Admits per year	250 bed hospital at 90% occupancy	21,000/yr	
CHF admits per year	5.7% of admissions are for CHF The average reimbursement for CHF is -$500-$1000/admission average loss to cost of care	1,150/year	$575,000
CHF 30-day readmissions per year	CHF DRG-specific 23% readmission rate Median CMS reimbursement for CHF is $6,000/discharge *-with more than a 3 fold variation not attributable to clinical condition*	265/year	$1,590,000
Total Annual Loss			$2,165,000

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The Buzz around 30-Day

- AHRQ/ HCUP report suggests that in 2006, hospitals spent $30.8 billion on 4.4 million hospital admissions that might have been avoidable. The report used its prevention quality indicators to decide when a hospital stay might have been preventable with good enough outpatient care. Medicare patients accounted for $20.1 billion of the full amount spent on possibly preventable admissions, while privately-insured patients were responsible for $4.7 billion of the $30.8 billion total. The report concluded that congestive heart failure and bacterial pneumonia were the two most common reasons for inpatient stays, mounting up $15.6 billion in costs.
- In 2006, hospital costs for potentially preventable conditions totaled nearly $30.8 billion—one of every 10 dollars of total hospital expenditures. As many as 4.4 million hospital stays could possibly have been prevented with better ambulatory care, improved access to effective treatment, or patient adoption of healthy behaviors.
- Congestive heart failure and bacterial pneumonia were the two most common reasons for potentially preventable hospitalizations, accounting for half of the total hospital costs ($8.4 billion and $7.2 billion, respectively) for all preventable hospitalizations.
- One in five (18 percent) Medicare admissions was for a potentially preventable condition. In fact, Medicare patients contributed to $20.1 billion (67 percent) of total hospital costs for potentially preventable hospitalizations among adults.
- Hospitalization rates for potentially preventable conditions were highest among residents in poorer communities and lowest among residents from wealthier communities. This disparity was particularly evident for diabetes without complications, where the admission rate in the poorest communities was more than 400 percent higher than the rate in the wealthiest communities.

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The 30-Day Activity 2009

Boost	ARHQ	CMS	NC3
Better Outcomes for Older adults through Safe Transitions	HCUP – 2009 Report	Proposed Rules 4/08	The Promise of Care Coordination Report 2009
Select Sites to pilot and mentor for 1 year	Report using 2006 CMS claims data $4.4 mil preventable 2 DRGs = 50%	14 regions selected using care coordination to reduce Readmissions Project through 2011	Transitional Care Eric Coleman & Mary Naylor (Chad Boult)
Education and Tool kit	RED Toolkit and Education	Test Runs of Reporting measures occurred in 2008 and 2009, 2010 legislation requires several $bil in savings	Self-Management Kate Lorig & Ed Waggner Coordinated Care CMS demos 2002 Brown Report
lvalentino@hospitalmedicine.org (267-702-2672). http://www.hospitalmedicine.org/ResourceRoomRedesign/RR_CareTransitions/html_CC/project_boost_background.cfm	http://www.hcup-us.ahrq.gov/reports/statbriefs/sb72.jsp	Federal Register Vol. 73 No. 84 04/30/08 http://www.cfmc.org/caretransitions/	http://www.socialworkleadership.org/nsw/Brown_Full_Report.pdf

The 30-Day Activity 2009 & 2010

BOOST	ARHQ	CMS	NC3
Update: Robyn Golden		*Update: Barry Straube*	
Better Outcomes for Older adults through Safe Transitions	HCUP – 2009 Report *Update: Carolyn Clancy*	Proposed Rules 4/08	The Promise of 20[illegible]
Select Sites to pilot and mentor for 1 year	Report using 2006 CMS claims data $4.4 mil preventable 2 DRGs = 50%	14 regions selected using care coordination to reduce readmissions Project through 2011	Transitional Care Eric Coleman & Ma (Chad Boult)
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lvalentino@hospitalmedicine.org (267-702-[illegible]572) http://www.[illegible]spitalmedicine.org/Resource_Room/design/RR_CareTransitions/html_CC/project_boost_background.cfm	http://www.hcup-us.ahrq.gov/reports/statbriefs/sb72.jsp	Federal Register Vol. 73 No. 84 04/30/08 http://www.cfmc.org/caretransitions/	http://[illegible]nsw/B

HEALTHCARE REFORM

Commonwealth Fund/IHI: STAAR
Amy Boutwell

Commonwealth Fund/PHI:
Barbara Harvath

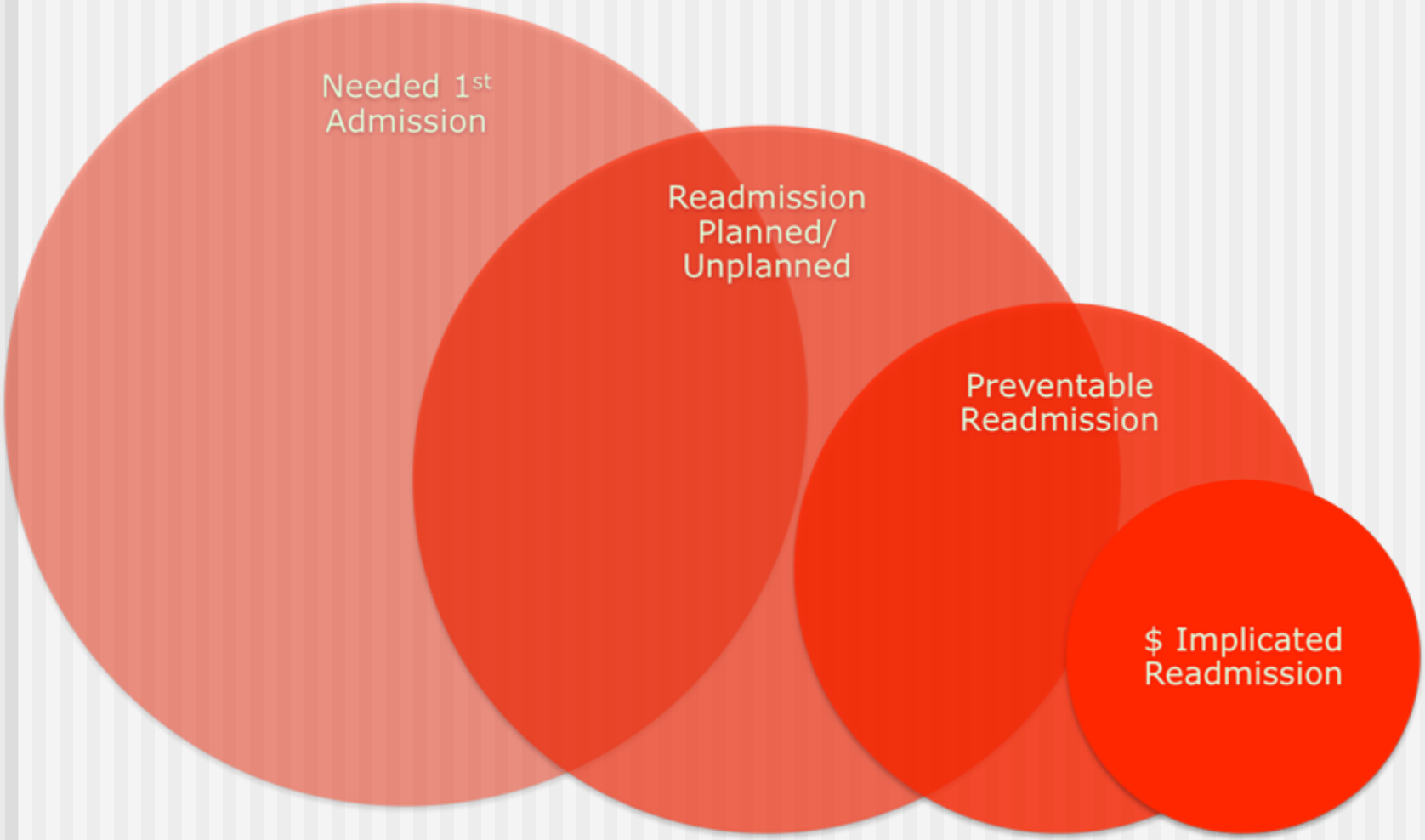
VHA: 6 Leading Practices Blueprint to Reduce Readmissions

VNA Transitional Care:
Robert Rosati

Payor Reform:
Humana, Aetna, BCBS
CIGNA's Douglas Hadley

Reform Advocates:
AMA, AHA,

Anatomy of a Readmission



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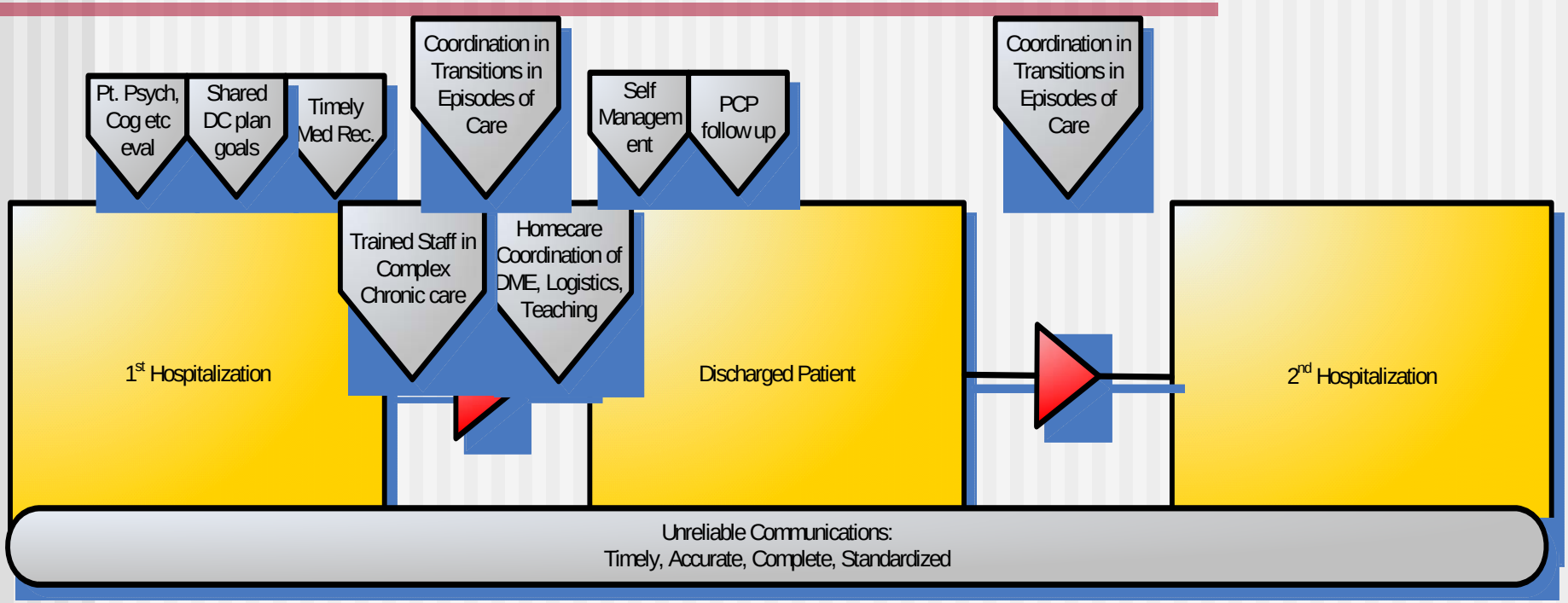
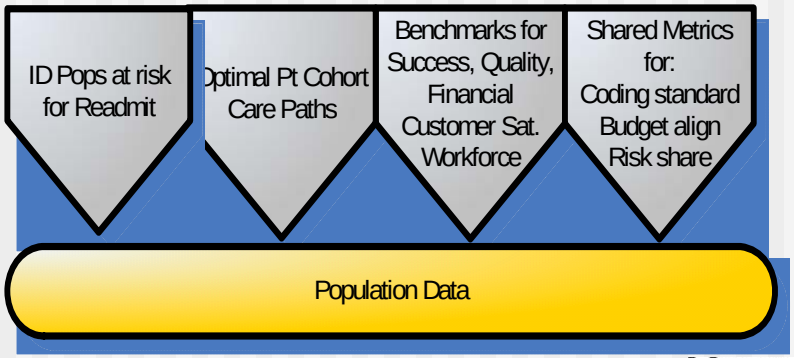
Issues surrounding readmissions by process steps





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Understanding readmissions starts before the first admission

- 19% of 30-day readmissions are from admissions that didn't need to happen in the first place." AHRQ
- Severity and complexity of underlying chronic problems contribute significantly to preventable readmissions.
- At home deaths from medication mistakes saw a 7 fold increase between 1984 and 2004
- Known deficits that impair a patient's ability to follow through on a discharge plan
  - Economics
  - Transportation
  - Mental (ie. depression)
  - Cognitive (ie. memory)
  - Physical (ie. seeing, hearing)
  - Language (non-English speaking, illiterate)
  - Social supports

Top 3 issues for patient medication compliance failure

Most DC Planners would target lack of social support as the top issue in readmissions

- A recent study looking at 150,000 patients with diabetes on medications found that 50% of patients had medication issues but of those:
  - 20% were patient issues (Economics and transportation issues, and depression accounting for the most)
  - 80% were provider issues (failure to intensify treatment to optimal range being the largest issue)
- This changes how we need to start looking at compliance failure and what solutions we might implement

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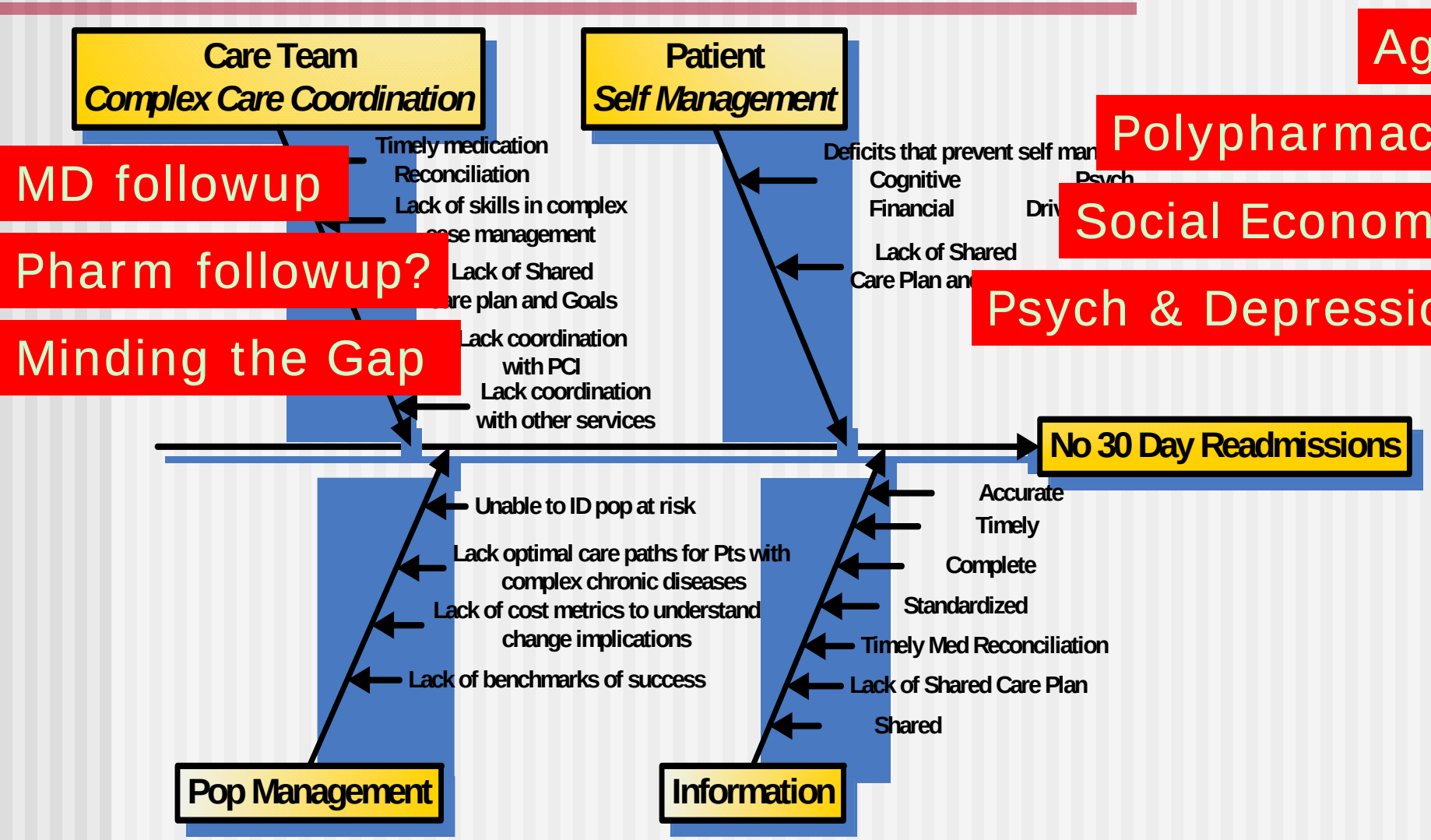
Issues surrounding readmissions Research



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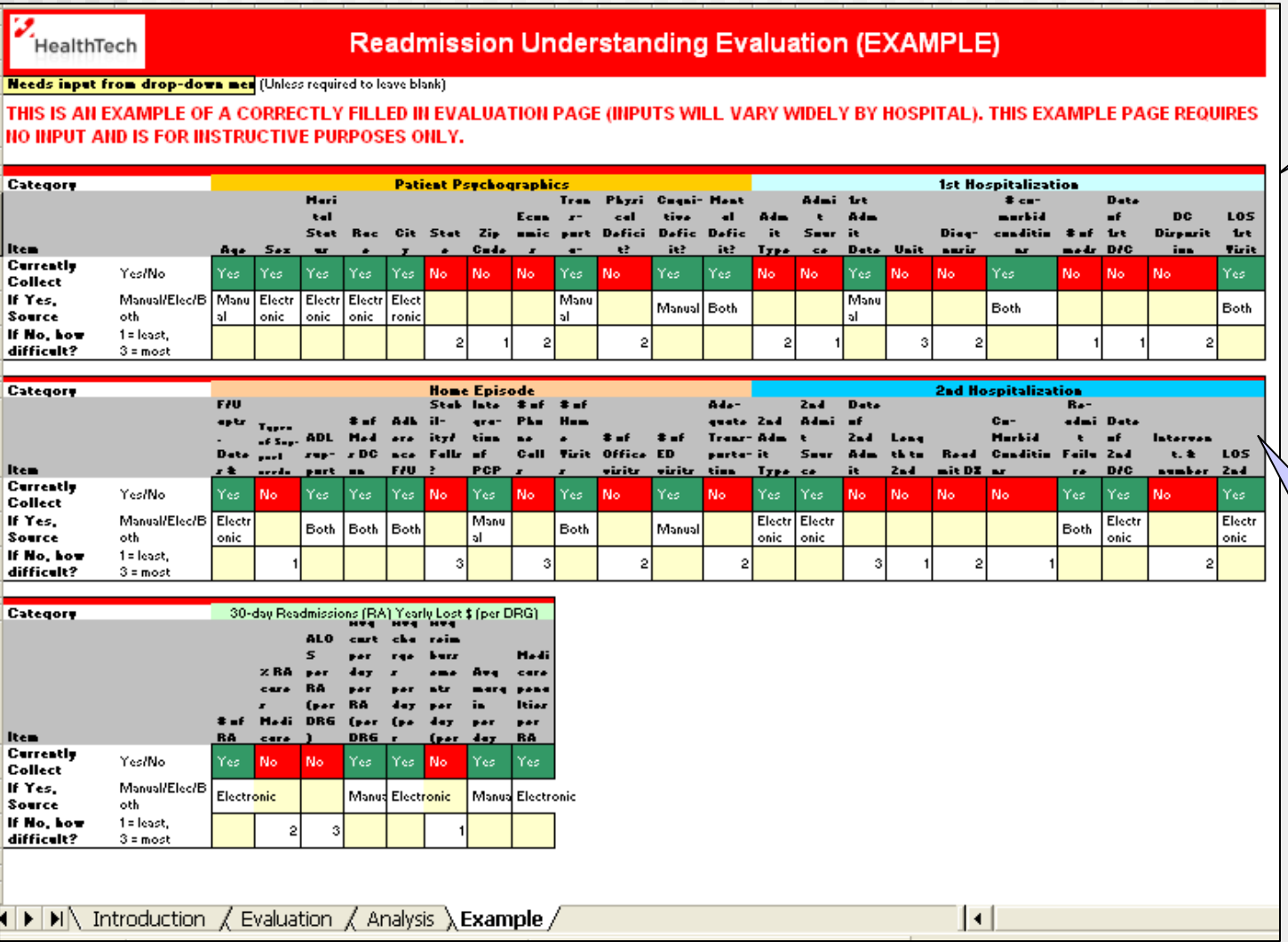
Example Page

The tool includes an Example page that allows a user to see a properly filled out Evaluation page. The inputs will vary by organization, but the example page shows correct input logic.



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Readmission Understanding Evaluation (EXAMPLE)

Needs input from drop-down menu (Unless required to leave blank)

THIS IS AN EXAMPLE OF A CORRECTLY FILLED IN EVALUATION PAGE (INPUTS WILL VARY WIDELY BY HOSPITAL). THIS EXAMPLE PAGE REQUIRES NO INPUT AND IS FOR INSTRUCTIVE PURPOSES ONLY.

Category		Patient Psychographics												1st Hospitalization								
Item		Age	Sex	Marital Status	Race	City	State	Zip Code	Economic	Transport-	Physical Deficit?	Cognitive Deficit?	Mental Deficit?	Admit Type	Admit Source	1st Admit Date	Unit	Diag-nosis	$ co-morbid condition	$ of meds	Date of 1st D/C	DC Disposition	LOS 1st Visit
Currently Collect	Yes/No	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	No	Yes	Yes	No	No	Yes	No	No	Yes	No	No	No	Yes
If Yes, Source	Manual/Elec/Both	Manual	Electronic	Electronic	Electronic	Electronic				Manual		Manual	Both			Manual			Both				Both
If No, how difficult?	1 = least, 3 = most						2	1	2		2			2	1		3	2		1	1	2	

Category		Home Episode												2nd Hospitalization								
Item		F/U optr - Date x &	Type of Sup-port servs	ADL sup-port	$ of Meds x DC on	Adh ere nce F/U	Stab il-ity/ Falls ?	Inte gra-tion of PCP	$ of Pha ne Call s	$ of Hom e Visit s	$ of Office visits	$ of ED visits	Ade-quate Trans-porta-tion	2nd Admit Type	2nd Admit Source	Date of 2nd Admit	Leng th to 2nd	Read mit DX	Co-Morbid Condition	Re-admit Failure	Date of 2nd D/C	Interven t. & number	LOS 2nd
Currently Collect	Yes/No	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes	No	Yes	Yes	No	No	No	No	Yes	Yes	No	Yes
If Yes, Source	Manual/Elec/Both	Electronic		Both	Both	Both		Manual		Both		Manual		Electronic	Electronic					Both	Electronic		Electronic
If No, how difficult?	1 = least, 3 = most		1				3		3		2		2			3	1	2	1			2	

Category		30-day Readmissions (RA) Yearly Lost $ (per DRG)							
Item		$ of RA	% RA care r Medi care	ALOS per RA (per DRG)	Avg curt per day per RA (per DRG	Avg cha rge per day (pe r	Avg reim burs eme nt per day (per	Avg marg in per day	Medi care pena ltie r per RA
Currently Collect	Yes/No	Yes	No	No	Yes	Yes	No	Yes	Yes
If Yes, Source	Manual/Elec/Both		Electronic		Manual	Electronic		Manual	Electronic
If No, how difficult?	1 = least, 3 = most		2	3			1		

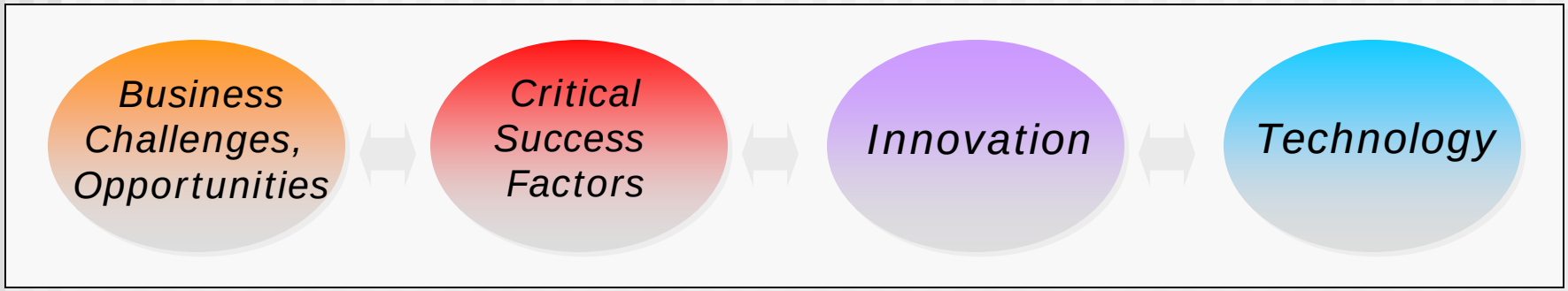
Introduction / Evaluation / Analysis / Example

Yes & No filled out for all metrics

Manual/Elec/ Both filled out for "Yes" metrics only

Degree of difficulty filled out for "No" metrics only

Connecting Technology & Innovation to Healthcare Challenges



Innovations are strategic, technology is tactical

Which innovations and technologies will be truly disruptive?

How can these be leveraged to accomplish our strategy and mission?

How will they affect care processes, quality and sustainability?

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A Wealth of Technologies

Smart Sensors

Home Meds Management

Wireless Networks

Shared Care Plan

Home Monitoring

Video-Based Education

Telemedicine

Which technologies will have the biggest impact on 30 day readmissions?
How do high-impact technologies get disseminated quickly, efficiently and effectively?

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The Transitions of Care Matrix

The Transitions of Care Matrix map connects challenges to metrics to innovations to technologies

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Transitions of Care Matrix

Healthcare Challenges & Business Problems	Critical Success Factors & Metrics	Innovations	Technologies	Expected Impact
(Sample) Home care visits labor intensive (rural visits-travel, time, weather, cost)	*Number of in person visits needed for appropriate care per episode*	*Use of telecommunications and remote monitoring to substitute for in-person home visits*	**Two-way video *Remote sensor devices *Remote disease monitoring*	*Decrease number of inperson visits and add virtual visits with similar or better outcomes for episode of care*
Unable to identify populations at greatest risk for readmit	Decrease in readmissions rates	Automation of risk profiling and readmission analysis	*Computer algorithms *Data integration/mining software *Predictive Modeling	Risk stratification for specificity and sensitivity for populations at greatest risk for readmission
Lack of shared care plan and structures to advance self management *Clarity of Provider goals *Clarity of Patient goals *Progression to shared decision making *Monitoring	*Patient compliance with care plan *Decreased readmissions *Fewer calls to management team	Customized discharge care plan protocols for complex home care management	*PHR *Provider and patient teleconferencing *Shared care plan	Patients and caregivers know optimal care plan after discharge and capable of effective follow through
Lack of Pt psychological, cognitive and social needs integrated into discharge plan and assessment *accountability *robust assessment *inclusive DC/Transition plan	*Reduction in non-adherence to care plans *Higher level of patient compliance *Decrease in home medical errors	Simple, easy to use, accessible evaluation tools for pt psychosocial needs	*Patient assessment tools *Integrative case plan *Deficit reducing technologies (i.e. medication reminders, appointment pick ups etc.)	More comprehensive care plans and higher patient compliance
Lack of timely medication reconciliation	*Fewer ADEs *Fewer admissions due to ADEs *Better medication adherence	Timely team coordination and documentation	*PHR with medication administration software (ie KPHC) *Telemedicine conferencing esp. pharma	Improved disease management due to medication adherence. Better coordination of team care

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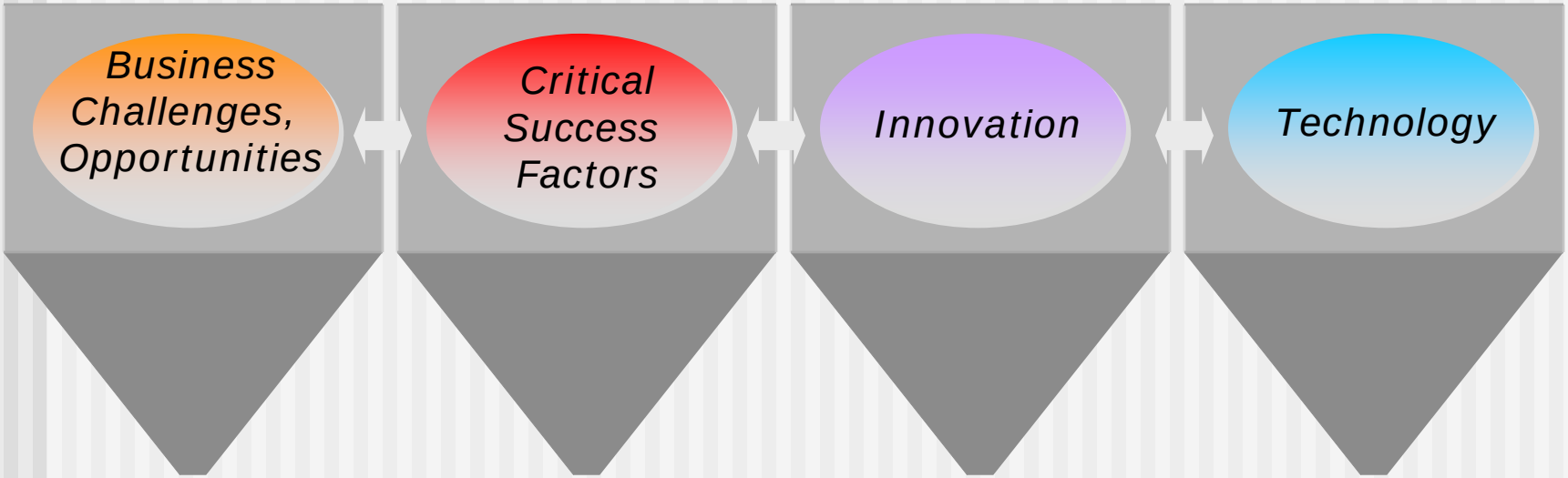
Connecting the Dots?



Healthcare Challenges & Business Problems	Critical Success Factors & Metrics	Innovations	Technologies
Home care visits labor intensive (rural visits-travel, time, weather, cost)	Number of in person visits needed for appropriate care per episode	Use of telecommunications and remote monitoring to substitute for in-person home visits	*Two-way video *Remote sensor devices *Remote disease monitoring
Unable to identify populations at greatest risk for readmit	Decrease in readmissions rates	Automation of risk profiling and readmission analysis	*Computer algorithms *Data integration/mining software *Predictive Modeling
Lack of shared care plan and structures to advance self management *Clarity of Provider goals	*Patient compliance with care plan *Decreased readmissions *Fewer calls to management team	Customized discharge care plan protocols for complex home care management	*PHR *Provider and patient teleconferencing *Shared care plan

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Assessing Readmissions and a technology solution example: Mercy Laredo

Challenge	Success Factor	Innovation	Technology
Lack of shared care plan and structures to advance self management: Clarity of Provider & Patient goals	• Patient medication compliance • Physician participation in goal setting • Patient satisfaction • Patient connecting to caregivers	Use of telecommunications and remote monitoring to create shared care plan and monitor individual	Remote disease monitoring
Help highest utilizers with no insurance coverage and little or no continuity of care to better manage self-care, prevent hospitalizations and ED visits	↑ Patient satisfaction ↑ Patients' perceived connection to care team ↑ Ability for patient to manage meds ↑ SF-12 scores ↓ 34% ED visits ↓ 32% Inpatient admissions ↓ 49% Outpatient visits ↓ $747 per patient/ year	Use telecommunications and remote disease monitoring to manage high resource intensive diabetic patients for better self care	Used Health Buddy home monitoring tool and HealthHero case management software

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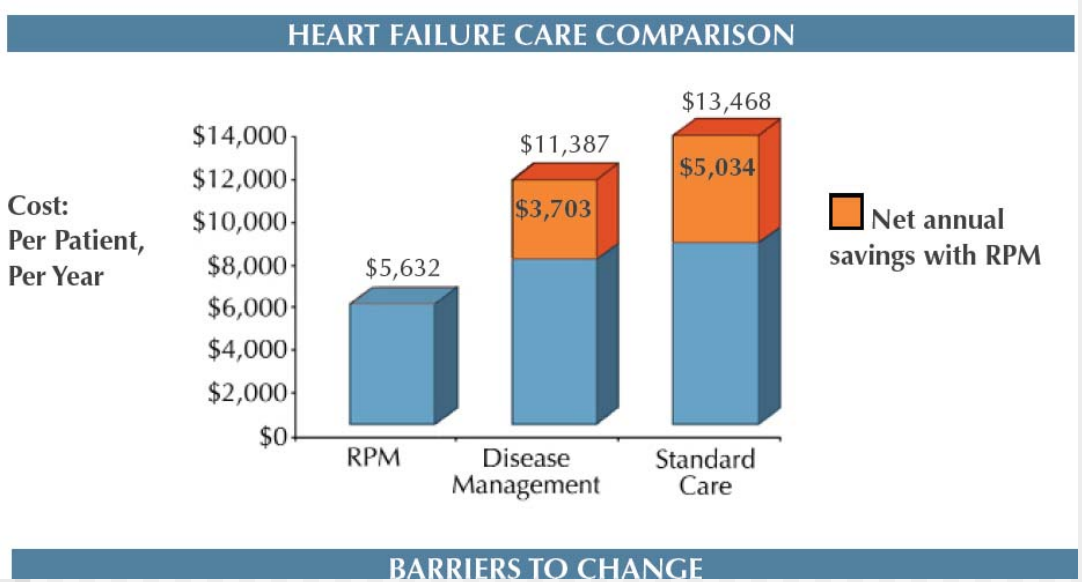
The Opportunity: RPM of patients with congestive heart failure

- The New England Healthcare Institute's Research Update: *Remote Physiological Monitoring* reports the following cost savings for all Class III and Class IV heart failure patients, assuming that 80% of the 1.59 million patients in these two classes, or 1.27 million patients, will be hospitalized in a year, at an annual cost of $2,052 per patient for the monitoring technology ($2,802 with DM software):
  - 60% reduction in hospital readmissions compared to standard care and a 50 percent reduction in hospital readmissions compared to disease management programs without remote monitoring.
  - Based on the potential to prevent between 460,000 and 627,000 heart failure-related hospital readmissions each year, NEHI estimates an annual national cost savings of up to $6.4 billion dollars.



- The annual cost of a heart-failure related hospitalization per patient ranged from $5,632 for RPM patients to $11,387 for disease management without RPM patients to $13,468 for standard care patients.
- The net savings of RPM technology (i.e. savings after the costs associated with interventions) were $3,703 per patient per year for those with disease management programs and $5,034 for those with standard care.

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Policy Change To Support Broad RPM Diffusion Will Drive Cost Savings

- Analyzing data from the remote monitoring program at the VA, as well as other smaller programs, Better Health Care Together finds the US health care system could reduce costs by nearly $200 billion during the next 25 years if remote monitoring tools were utilized much more widely and supported by specific policy adjustments that include reimbursing health care organizations for remote care and encouraging continued investment in broadband infrastructure.

Estimated Savings and Gain from Policy Implementation, by Condition

	Net Present Value of Savings – Baseline Case	Net Present Value of Savings – Policy Case	Gain From Policy Change
CHF Patients	$79.7 Billion	$102.5 Billion	$22.8 Billion
Diabetes Patients	$42.3 Billion	$54.4 Billion	$12.1 Billion
COPD Patients	$18.7 Billion	$24.1 Billion	$5.4 Billion
Chronic Skin Ulcer Patients	$12.5 Billion	$16.0 Billion	$3.5 Billion
Total	$153.2 Billion	$197 Billion	$43.8 Billion

Source: *Vital Signs via Broadband: Remote Health Monitoring Transmits Savings, Enhances Lives*

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Integrated System use of Telemedicine to reduce readmissions

Business Challenges, Opportunities	*Critical Success Factors*	*Innovation*	*Technology*
Veteran's Administration: • Aging veterans • Lifetime care commitment • Chronic disease burden increasing • Shrinking resources	Plans to increase use of RDM by 66% in 3 years Goal of up to 60% of chronic illness will be managed by RDM (Small group outcomes) ↓ 15%-70% ED visits ↓ 13%-68% admits ↓ 13%-71% LOS	Use telecommunications and remote disease monitoring (RDM) to manage chronic illness at home	Use remote disease home monitoring equipment to manage 30 chronic conditions

Source: http://www.liebertonline.com/doi/pdfplus/10.1089/tmj.2008.0021

HealthBuddy by HealthHero
Remote Chronic Disease Management System

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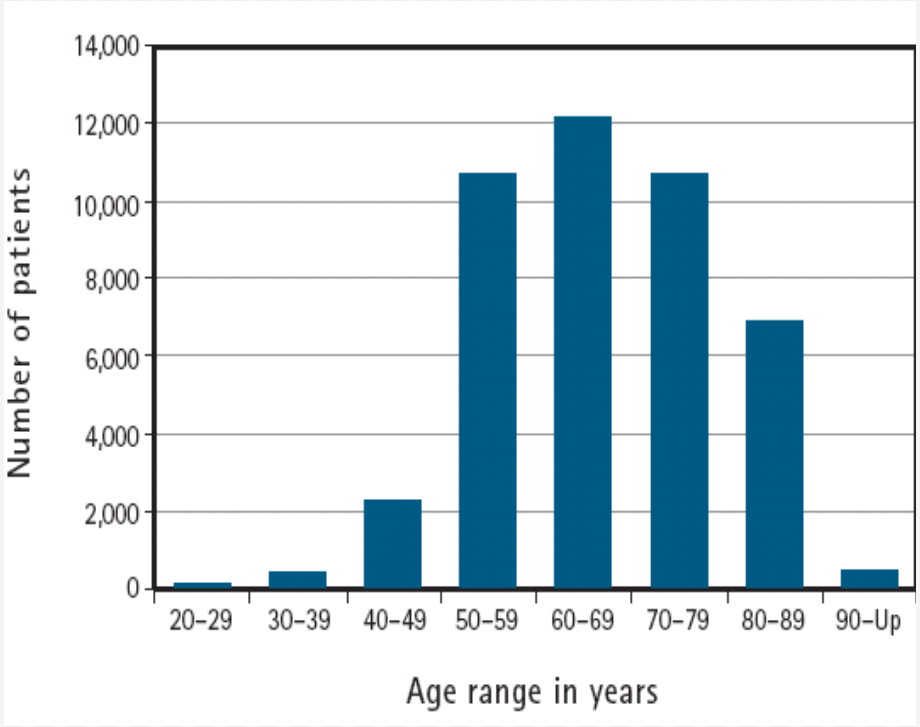
The Early Adopter Experience: Veterans Health Administration

- The cost of the program is $1,600 per patient per annum. This compares with direct cost of VHA's home-based primary care services of $13,121 per patient per annum, and market nursing home care rates that average $77,745 per patient per annum.
- Since VHA implemented CCHT, a total of 43,430 patients have been enrolled in the program. CCHT patients increased from 2,000 to 31,570 from 2003 to 2007. VHA plans to increase its NIC services 100% above 2007 levels to provide care for 110,000 patients by 2011, or 50% of its projected NIC needs.
- VHA attributes the rapidity and robustness of its CCHT implementation to the "systems approach" taken to integrate the elements of the program. Wherever possible, CCHT incorporated existing business processes to reduce the program's overhead costs and increase efficiency.

Age Distribution of all CCHT Patients



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What you are going to get from this Morning

Readmissions Tools – Project BOOST and the Enhanced Discharge Planning Program at Rush University Medical Center
Robyn Golden, LCSW, Director of Older Adult Programs

Break

Readmissions Tools - Use of Telemedicine in Preventing Readmissions
Patricia Ryan MS RN, Director, VISN 8 Community Care Coordination Service Associate Chief Consultant, VHA Office of Telehealth Services U.S. Department of Veterans Affairs Washington, DC

Technology's *Promise and Failure in Preventing Readmissions*
Ravi Nemana, Former CITRIS Director UC Berkeley and Senior Advisor at HealthTech

Wrap-up

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Thank You

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