FINDING VALUE AFTER HOSPITAL DISCHARGE: T1 TO T4

Robert E. Burke MD, MS and Cari R. Levy MD, PhD

February 2018

I have no conflicts of interest to declare.

DENVER SEATTLE CENTER OF INNOVATION FOR VETERAN-CENTERED & VALUE DRIVEN CARE

Division of General Internal Medicine
SCHOOL OF MEDICINE
UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS

INTRODUCTIONS

POLL QUESTION #1

- What is your primary role in the VA?
  - Trainee (student, resident, fellow)
  - Clinician
  - Researcher
  - Administrator, manager, or policy-maker
  - Other

POLL QUESTION #2

- If you are a researcher, what stage?
  - Pre-CDA or K award
  - CDA or K award
  - Post-CDA or K award

POLL QUESTION #3

- Where do you spend most of your time clinically, as an administrator, or as a research focus?
  - Outpatient care
  - Inpatient care (acute care) in the hospital
  - Post-acute or long-term care (home health, nursing facilities)
  - Home care (HBPC, PACE, home health)

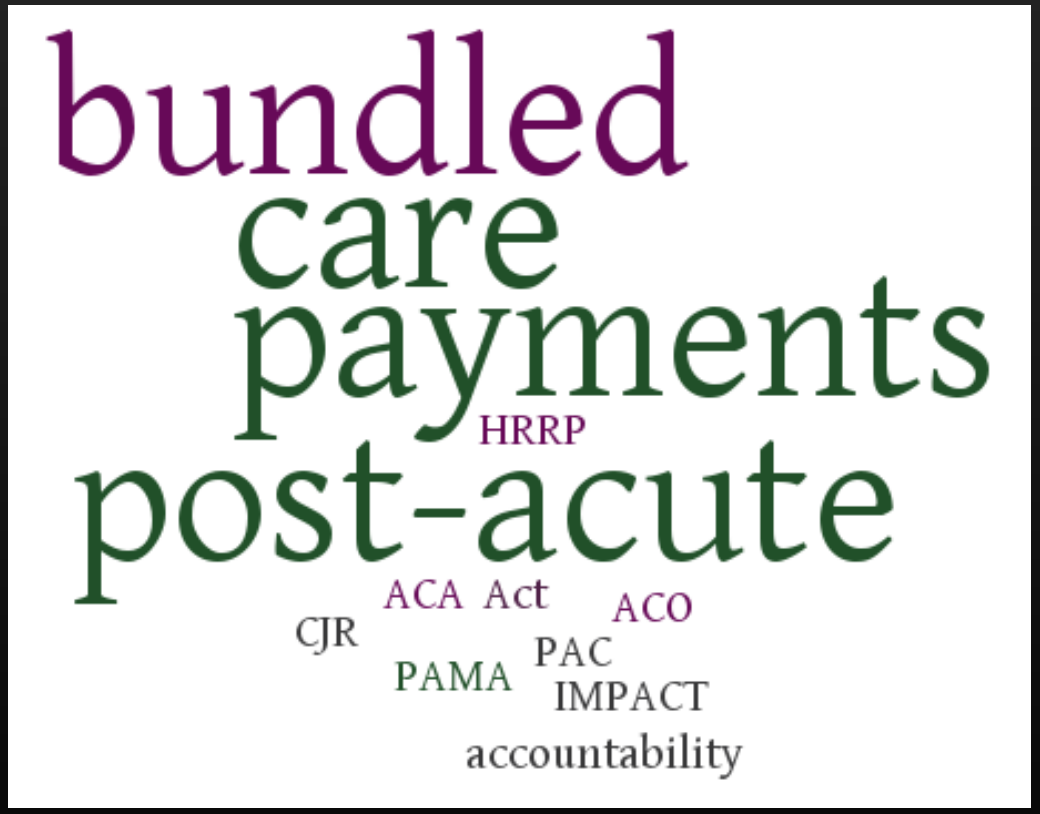
BASIC PARADIGM - VALUE

$$\text{Value} = \frac{\text{Outcomes}}{\text{Cost}}$$

BASIC PARADIGM - VALUE

$$\text{Value} = \frac{\textbf{Return}\ (\text{ED, hospital}) \rightarrow (\text{community/function})}{\text{Acute and post-acute care}}$$

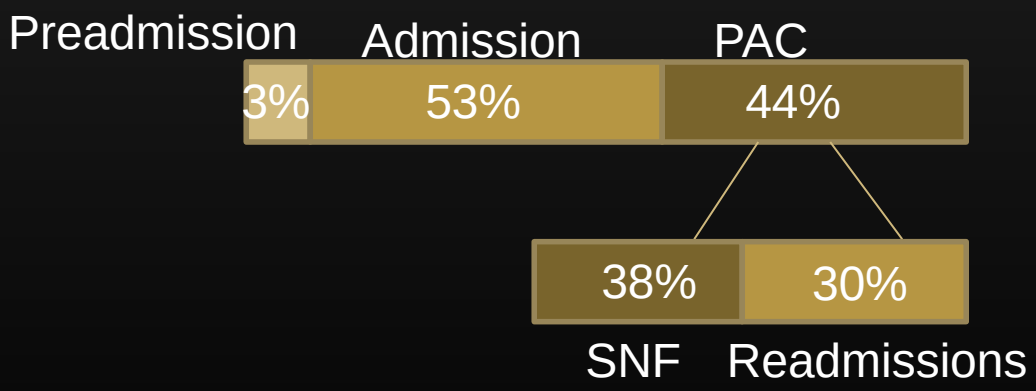
IMPORTANCE IN TRANSITIONS

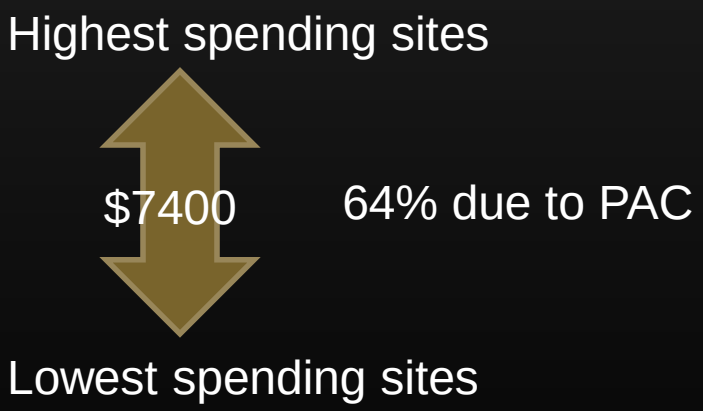


MSPB

Medicare Spending Per Beneficiary (MSPB)

- Part of Value-Based Purchasing (VBP) for hospitals
- Bundles 3 days prior to admit to 30 days post-discharge, penalizes outliers





Das et al. JAMA IM 2016

Affordable Care Act (ACA), 2010

WHY SO HARD TO FIND VALUE?

Risk Prediction Models for Hospital Readmission

A Systematic Review

JAMA, October 19, 2011—Vol 306, No. 15

Conclusions Most current readmission risk prediction models that were designed for either comparative or clinical purposes perform poorly. Although in certain set-

Interventions to Reduce 30-Day Rehospitalization: A Systematic Review

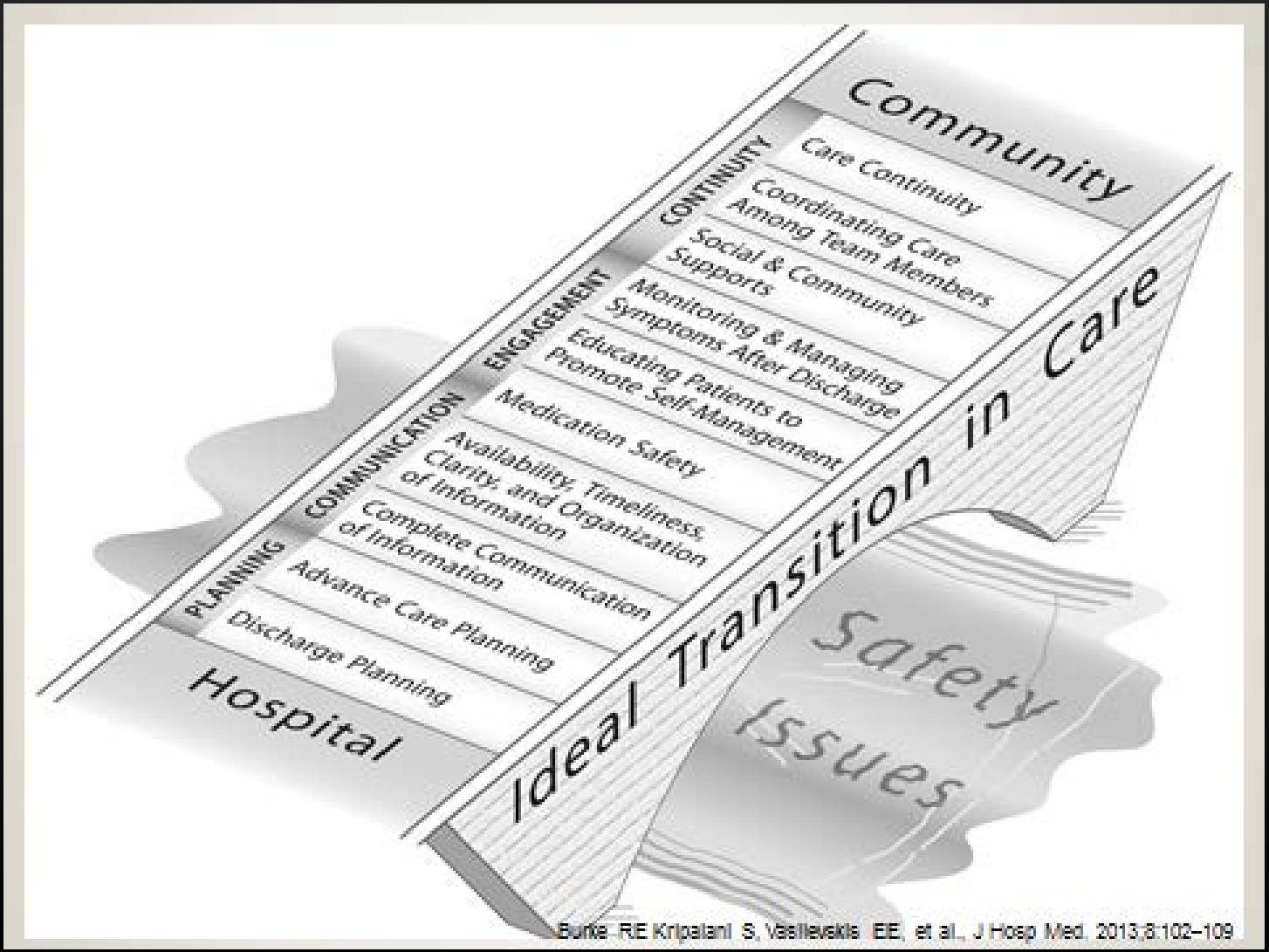
Ann Intern Med. 2011;155:520-528.

Conclusion: No single intervention implemented alone was regularly associated with reduced risk for 30-day rehospitalization.

T1: IDEAL TRANSITION OF CARE

- Thought experiment that could be used:
  - As “differential diagnosis” for transitional care issues
  - Focus on process rather than outcome measures
    - Harmonize description of intervention
    - Composite quality metric
  - To assess “preventability”

IDEAL TRANSITION OF CARE

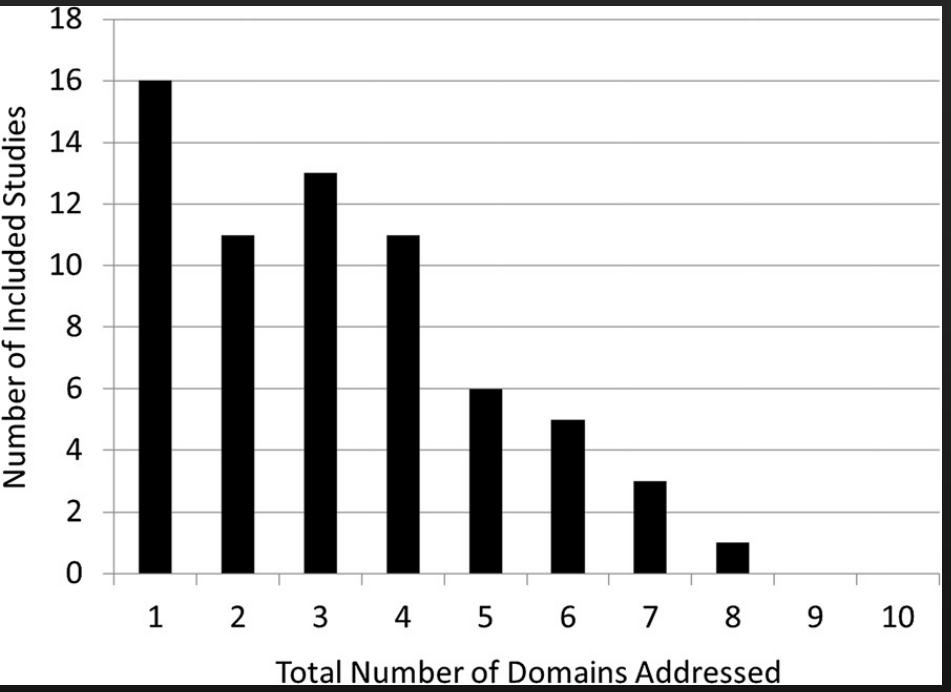


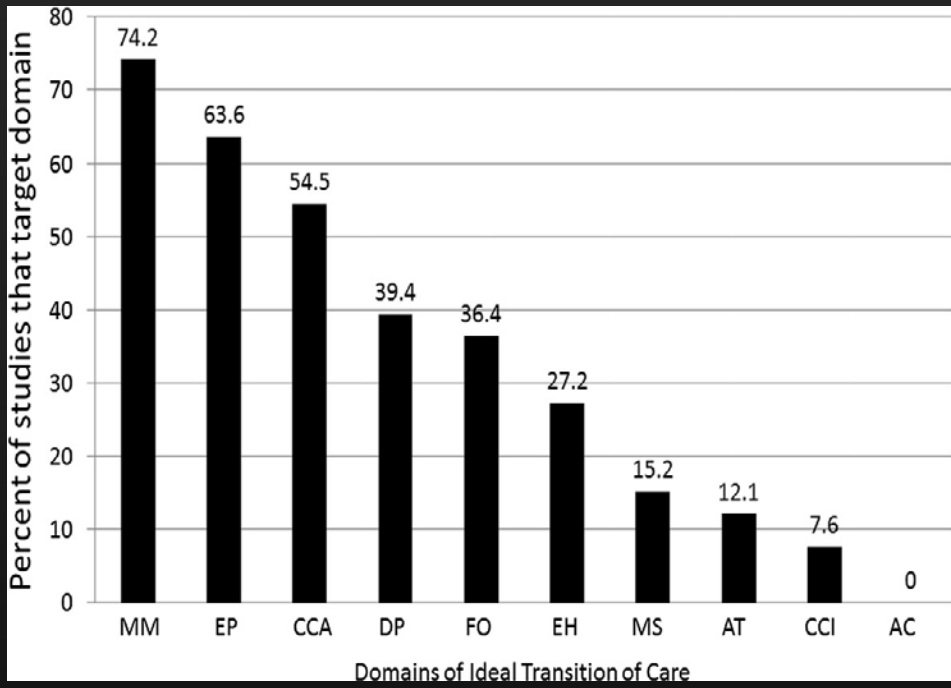
TAXONOMY OF INTERVENTIONS

- Review of all prospective interventions to reduce hospital readmissions 1975-2013 (n=66)
  - Categorized presence/absence of each of 10 domains of ITC
  - “Success” = statistically significant reduction in readmissions
  - Bivariate and multivariate associations of domains with “success”
    - Adjusted for study size, quality, duration

Burke et al., BMC Health Serv Res 2014

TAXONOMY OF INTERVENTIONS





- Overall:
  - 42% “success” rate
  - 3.5 domains addressed on average, 23% addressed 5 or more
  - Success OR 1.5 (95% CI 1.1-2.0) per domain included

OPERATIONALIZING ITC

Physician Perspectives on Factors Contributing to Readmissions and Potential Prevention Strategies: A Multicenter Survey

Shoshana J. Herzig, MD MPH[1,2], Jeffrey L. Schnipper, MD MPH[2,3], Lauren Doctoroff, MD[1,2], Christopher S. Kim, MD, MBA[4], Scott A. Flanders, MD[4], Edmondo J. Robinson, MD MBA[5], Gregory W. Ruhnke, MD MS MPH[6], Larissa Thomas, MD MPH[7,8], Sunil Kripalani, MD MSc[9,10], Peter K. Lindenauer, MD MSc[11], Mark V. Williams, MD[12], Joshua P. Metlay, MD PhD[13], and Andrew D. Auerbach, MD MPH[14]

J Gen Intern Med 31(11):1287–93 2016

JAMA Internal Medicine | Original Investigation

Preventability and Causes of Readmissions in a National Cohort of General Medicine Patients

Andrew D. Auerbach, MD, MPH; Sunil Kripalani, MD, MSc; Eduard E. Vasilevskis, MD, MPH; Neil Sehgal, PhD, MPH; Peter K. Lindenauer, MD, MSc; Joshua P. Metlay, MD, PhD; Grant Fletcher, MD; Gregory W. Ruhnke, MD, MS, MPH; Scott A. Flanders, MD; Christopher Kim, MD; Mark V. Williams, MD; Larissa Thomas, MD; Vernon Giang, MD; Shoshana J. Herzig, MD, MPH; Kanan Patel, MBBS, MPH; W. John Boscardin, PhD; Edmondo J. Robinson, MD, MBA, MS; Jeffrey L. Schnipper, MD, MPH

JAMA Intern Med. 2016;176(4):484-493.

SPECIAL ARTICLE

HEALTH CARE REFORM

Interventions to Decrease Hospital Readmissions

Keys for Cost-effectiveness

Robert E. Burke, MD; Eric A. Coleman, MD, MPH

JAMA Intern Med. 2013;173(8):695-698.

- "Best practice" interventions:
  - Identify high-risk group and their risk factors for adverse post-discharge outcomes
  - Match the content and intensity of the intervention to their risks
    - Avoid ineffective, commonly-used interventions (eg, telemonitoring)
  - Create a reproducible intervention*

EXAMPLE

ORIGINAL RESEARCH

OPEN ACCESS

Open Access
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Allocating scarce resources in real-time to reduce heart failure readmissions: a prospective, controlled study

Ruben Amarasingham,[1,2] Parag C Patel,[3] Kathleen Toto,[2] Lauren L Nelson,[2] Timothy S Swanson,[1] Billy J Moore,[1] Bin Xie,[1] Song Zhang,[4] Kristin S Alvarez,[5] Ying Ma,[1] Mark H Drazner,[2] Usha Kollipara,[6] Ethan A Halm[2]

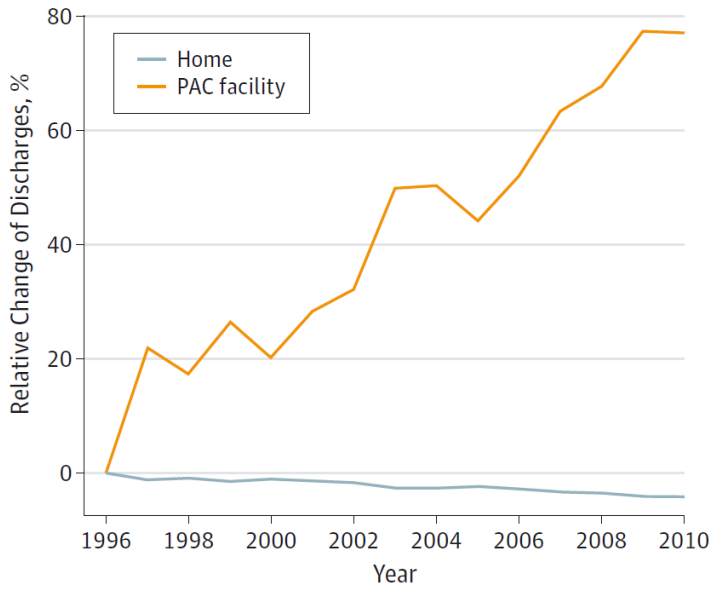
To cite: Amarasingham R, Patel PC, Toto K, *et al*. *BMJ Qual Saf* 2013;**22**:998–1005.

- Risk stratification on admission using EMR
- "High-risk" HF patients get intensive intervention
- Compared to concurrent controls (AMI, PNA):

Patient type		Pre-intervention (%)	Post-intervention (%)	Difference (95% CI)	p Value	Adjusted OR† (95% CI)	p Value
HF	All	26.2	21.2	5.0 (1.0 to 9.0)	0.01	0.73 (0.58 to 0.93)	<0.01
AMI and PNA	All	15.5	16.7	−1.2 (−5.4 to 2.9)	0.56	1.09 (0.80 to 1.48)	0.60

T2: BEDSIDE

Figure 1. Trends in Discharges to Post-Acute Care (PAC) Facilities and Home



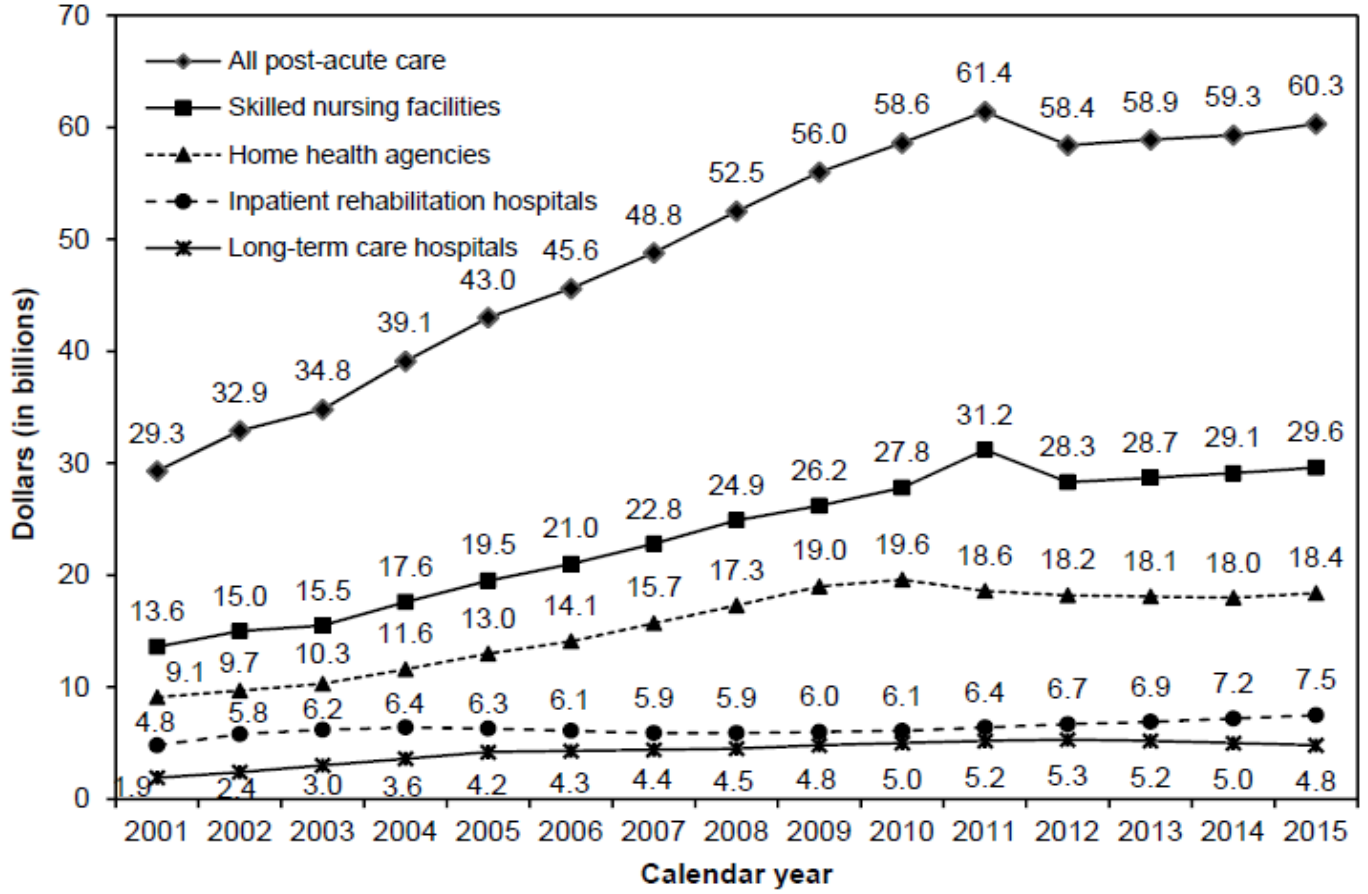
Burke et al., JAMA IM 2015

Measure	2011	2012	2013	2014	2015
Discharged to the community	33.2%	35.6%	37.5%	37.6%	38.8%
Potentially avoidable readmissions					
During SNF stay	12.4	11.4	11.1	10.8	10.4
During 30 days after discharge from SNF	5.9	5.6	5.5	5.6	5.0

MedPAC Data Book, June 2017

COST

Chart 8-2. Growth in Medicare's fee-for-service post-acute care expenditures has slowed since 2012



Note: These calendar year–incurred data represent only program spending; they do not include beneficiary copayments.

Source: CMS Office of the Actuary 2017.

MedPAC Data Book, June 2017

REGIONAL VARIABILITY IS EXTREME

TABLE 2-10
Proportion of Variance Attributable to Each Medicare Service Category

	Adjusted Total Medicare Spending	
	Remaining Variance	Reduction in Variance (%)*
Variation in Total Medicare Spending	6,974	—
If No Variation in Post-Acute Care Only	1,864	73
If No Variation in Acute Care Only	5,085	27
If No Variation in Either Post-Acute or Acute	780	89
If No Variation in Prescription Drugs	6,374	9
If No Variation in Diagnostic Tests	5,986	14
If No Variation in Procedures	6,020	14
If No Variation in Emergency Department Visits/Ambulance Use	6,972	0
If No Variation in Other	6,882	1

Variation in Health Care Spending: Target Decision Making, Not Geography – IOM 2013

UNCERTAINTY ABOUT PAC

Finding the Right Level of Posthospital Care

"We Didn't Realize There Was Any Other Option for Him"

Robert L. Kane, MD

JAMA, January 19, 2011—Vol 305, No. 3

The evidence base addressing benefits and risks of different placement options is not robust. Despite a general sense about where patients needing care should be treated, hospital discharge placement is far from an exact science.

Each decision to move an older person out of a hospital or along the LTC continuum can affect the rest of that person's life.

PATIENT DECISION-MAKING

"Evaluating the quality of patient decision-making regarding post-acute care" – JGIM 2018

- Key question: To what extent are hospitalized older adults and their caregivers empowered to make a high-quality decision about SNF for post-acute care?
- Participants: 32 patients, 22 caregivers at 3 hospitals and 3 SNFs
- Framework: Ottawa Decision Support Framework (ODSF)

PATIENT QUOTE

“There were pages and pages of names, sort of confusing, and they were pushing me to pick a place, wanted me out of there right away, and all I could remember was I needed a place close to home…

So within two hours, a person from [SNF] came in, interviewed me…and within another two hours, I was very nicely put in a van with a very nice driver and came to [SNF].”

- Patient, community SNF

CAREGIVER QUOTES

“People need help…we need to be walked through this. I mean, seriously, this isn’t something we do every day. I can’t be expected to know the ins and outs of this stuff.”

-Caregiver, University hospital

“Someone should have notified me that he was being moved [to a SNF]. He was not in a condition where he could tell me these things. He wasn’t even able to hold a conversation, really…he was so doped up on Dilaudid and morphine that he couldn’t carry on a conversation.”

- Caregiver, VA CLC

PROVIDER DECISION-MAKING

How Hospital Clinicians Select Patients for Skilled Nursing Facilities

Robert E. Burke, MD, MS,[*†‡] *Emily Lawrence, MPH,*[*] *Amy Ladebue, BA,*[*] *Roman Ayele, MPH,*[*] *Brandi Lippmann, MPH,*[*] *Ethan Cumbler, MD,*[‡] *Rebecca Allyn, MD,*[§] *and Jacqueline Jones, RN, PhD*[‖]

JAGS 2017

CONCLUSION: Hospital clinician evaluation and decision-making about postacute care in SNFs may be characterized as rushed, without a clear system or framework for making decisions and uninformed by knowledge of SNF or patient outcomes in those discharged to SNFs.

Table 4. Clinician Suggestions to Improve Patient Selection Process

Suggestion	Quotation	Clinician (Clinical Setting, Years Experience)
Scoring system or tool to predict likelihood of patient benefit from SNF stay	I think if there was some sort of you know, marker or score system that could show effectiveness of therapy or likelihood of improvement and ability to have an outcome which is consistent with going home at the end of the short-term subacute stay, it would be really helpful clinically.	Hospitalist (VA, 1)
	Boy, if there's a tool that we can employ or if I had a better sense of how to make sure that what I'm saying is the best thing for this patient from a functional perspective, that would be fantastic . . .	Physical therapist (university, 14)

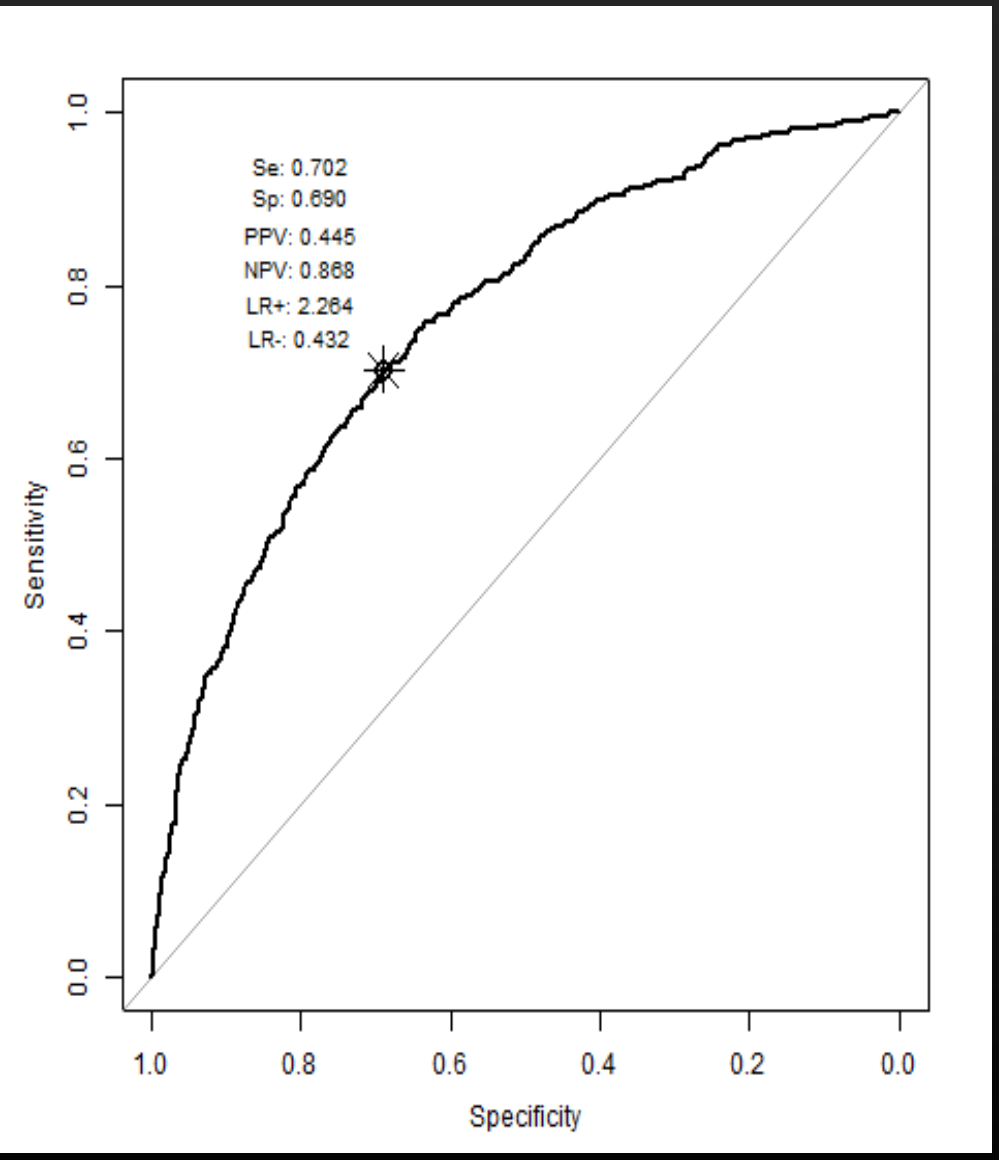
SNF PROGNOSIS SCORE

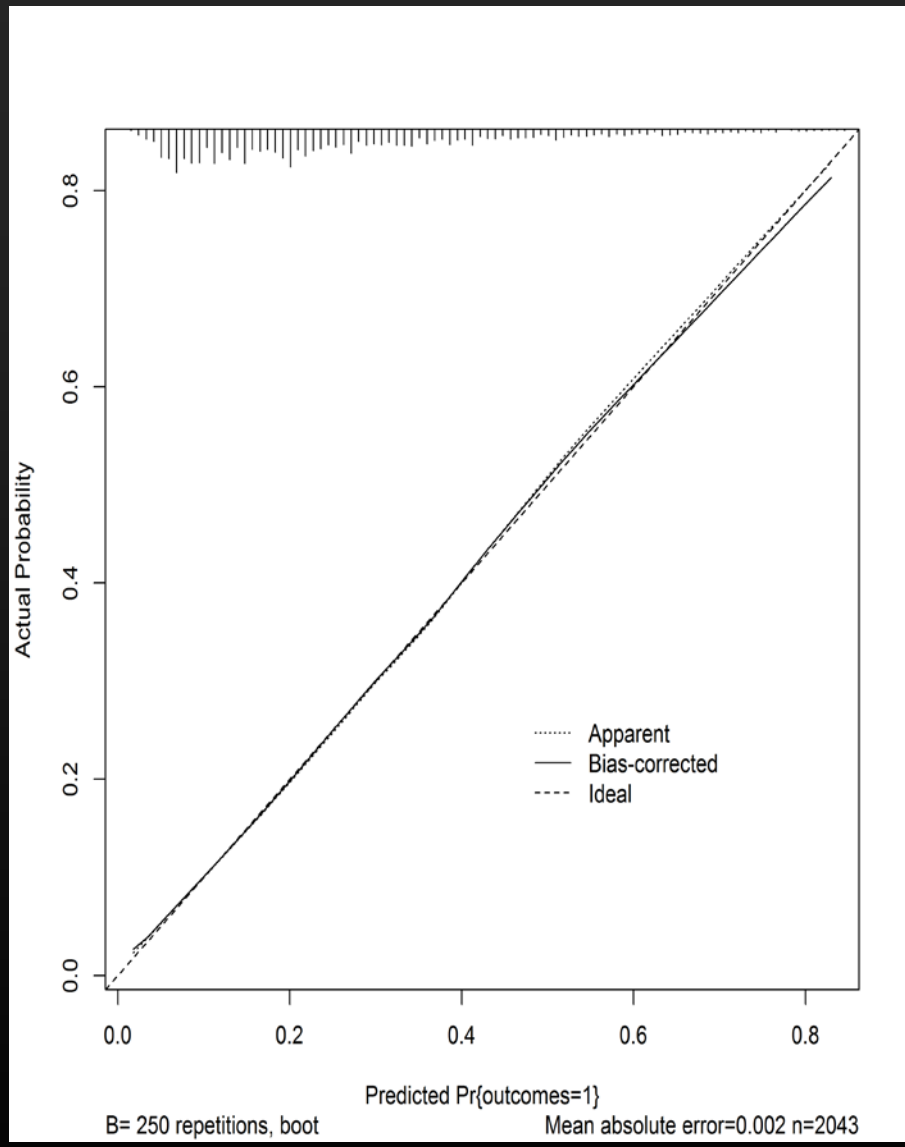
- Predict composite undesirable outcome:
  - Death
  - Readmission
  - Long stay (≥100 days)
- Derived from community-dwelling beneficiaries in the Medicare Current Beneficiary Survey (2003-11)
  - First hospital->SNF stay
  - Data from survey, claims, MDS on admission to SNF

RESULTS

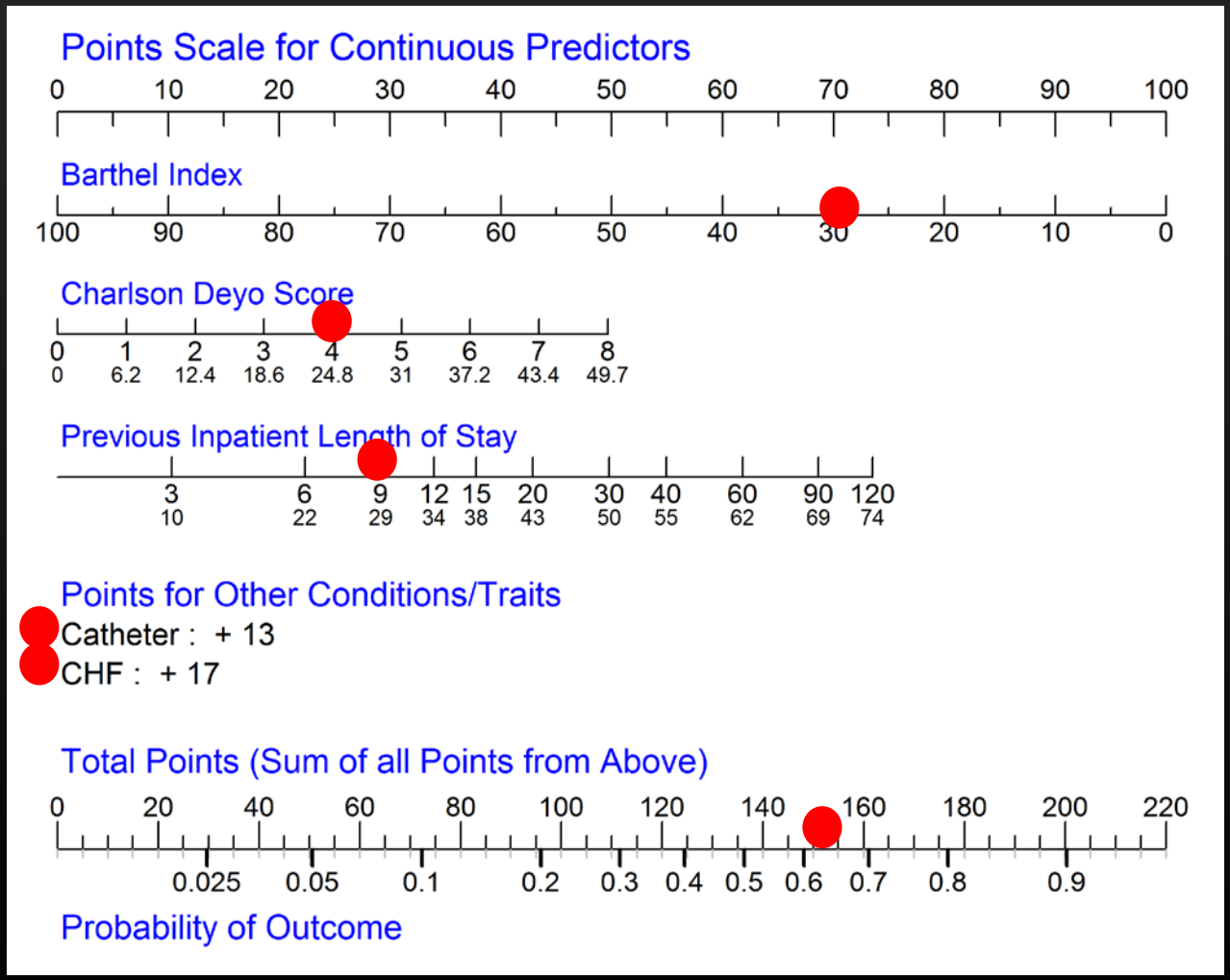
- 589 of 2043 (28.8%) had one of the events:
  - Hospital readmission (19.4%)
  - Mortality (10.5%)
  - Long stay (3.5%)
- Final model ($p<0.01$)
  - Barthel index
  - Charlson score
  - Heart failure
  - Indwelling catheter
  - Hospital length of stay

RESULTS - MODEL

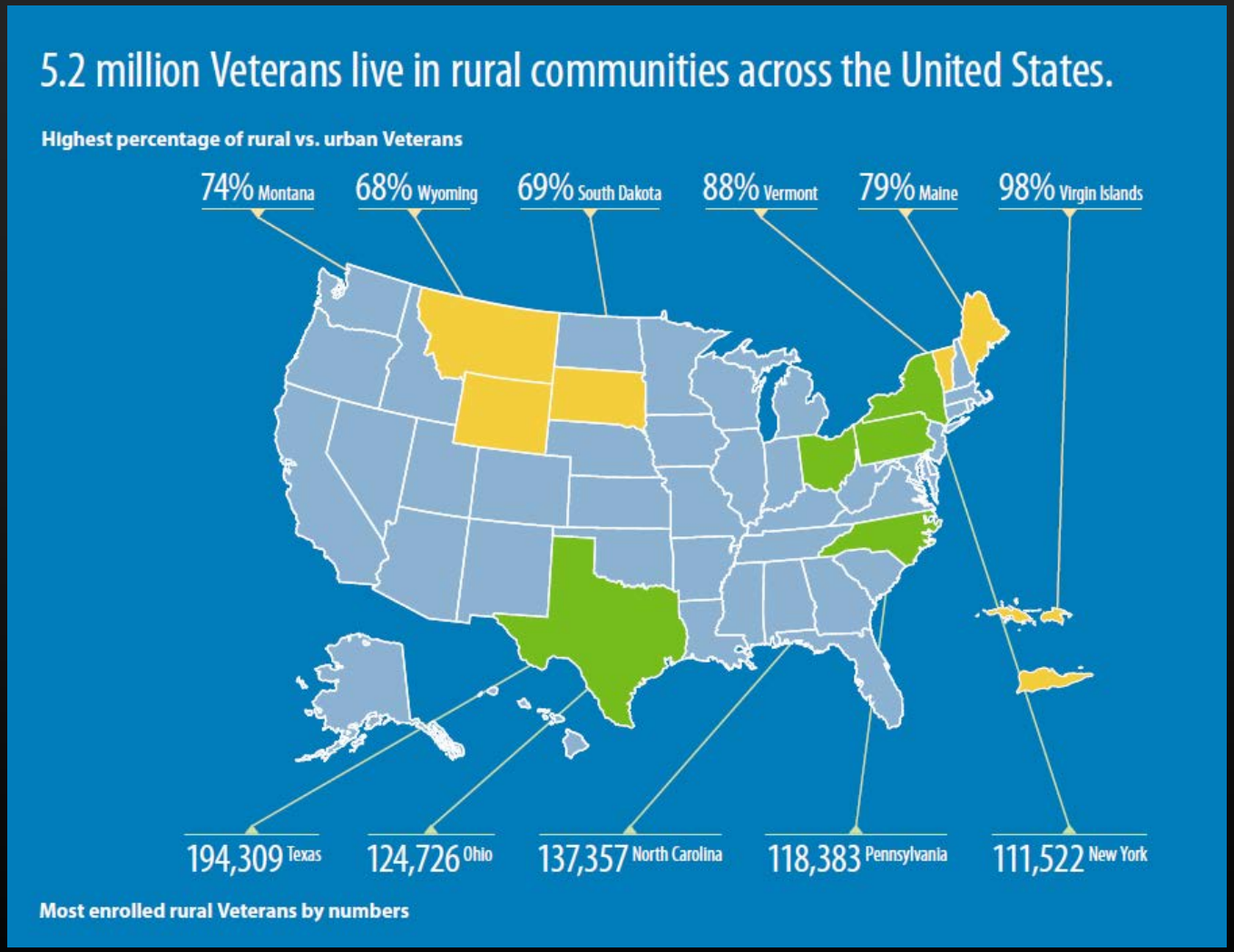




WORKED EXAMPLE



T3: IMPLEMENTATION



Did you know?

5.2 million Veterans live in rural communities across the United States.

These Veterans are commonly transferred to tertiary VA hospitals for care, but experience barriers to safely returning home.

The Transitions Nurse can help rural Veterans have a safer transition back home.

The Transitions Nurse follows a four step process at the VA Hospital:

1. Prepares the patient for discharge and Obtains a follow up appointment with their PACT within 14 days of discharge.

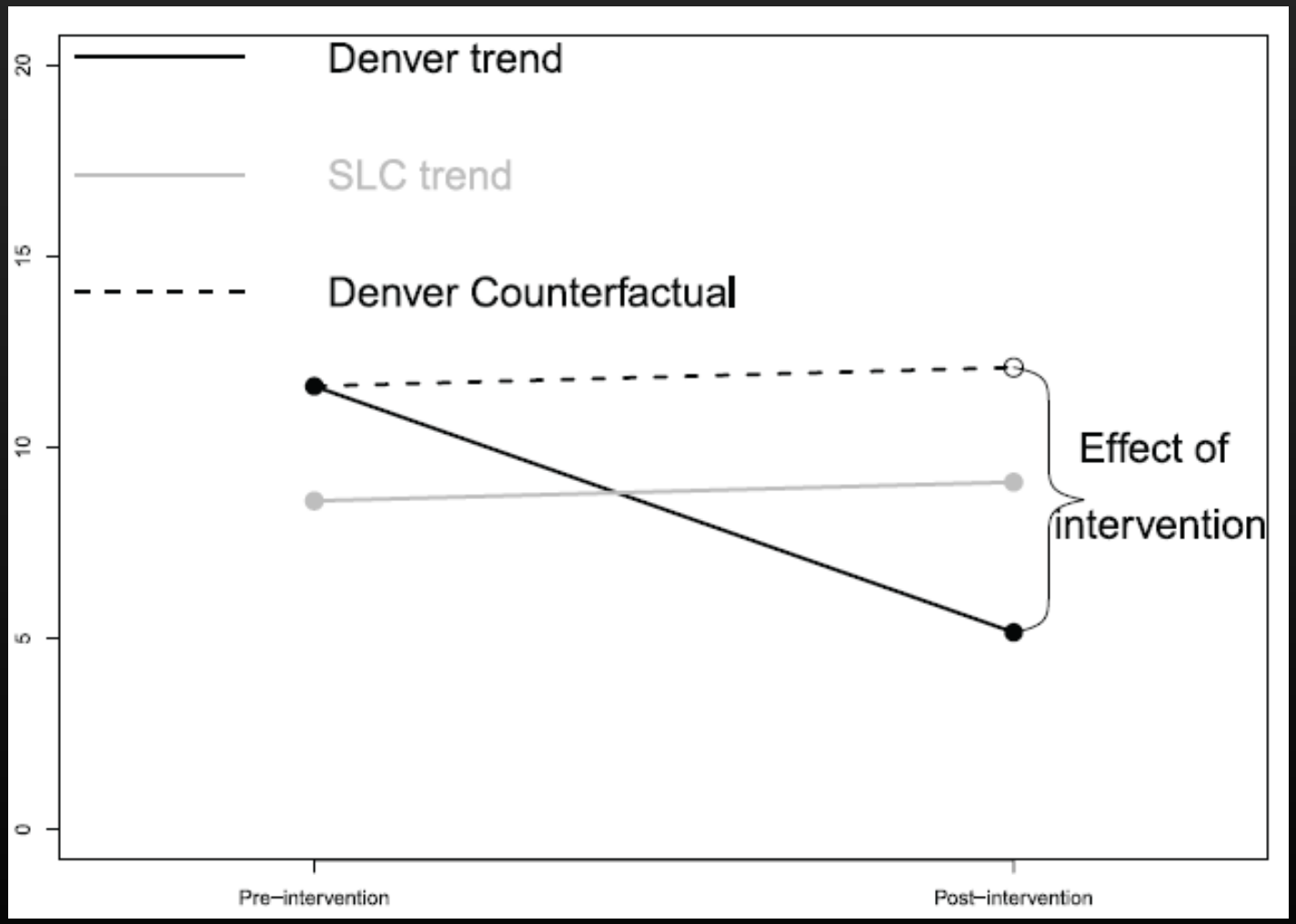
2. Calls the PACT site and sends an Inter – Facility communication Consult including the discharge summary and recommended follow ups.

3. Carrying out a follow up post discharge call to the patient (within 48 hours).

4. Engaging with the rural PCP and Pact RN to ensure continuity of care and information exchange.

The Transitions Nurse contact number at your site is:

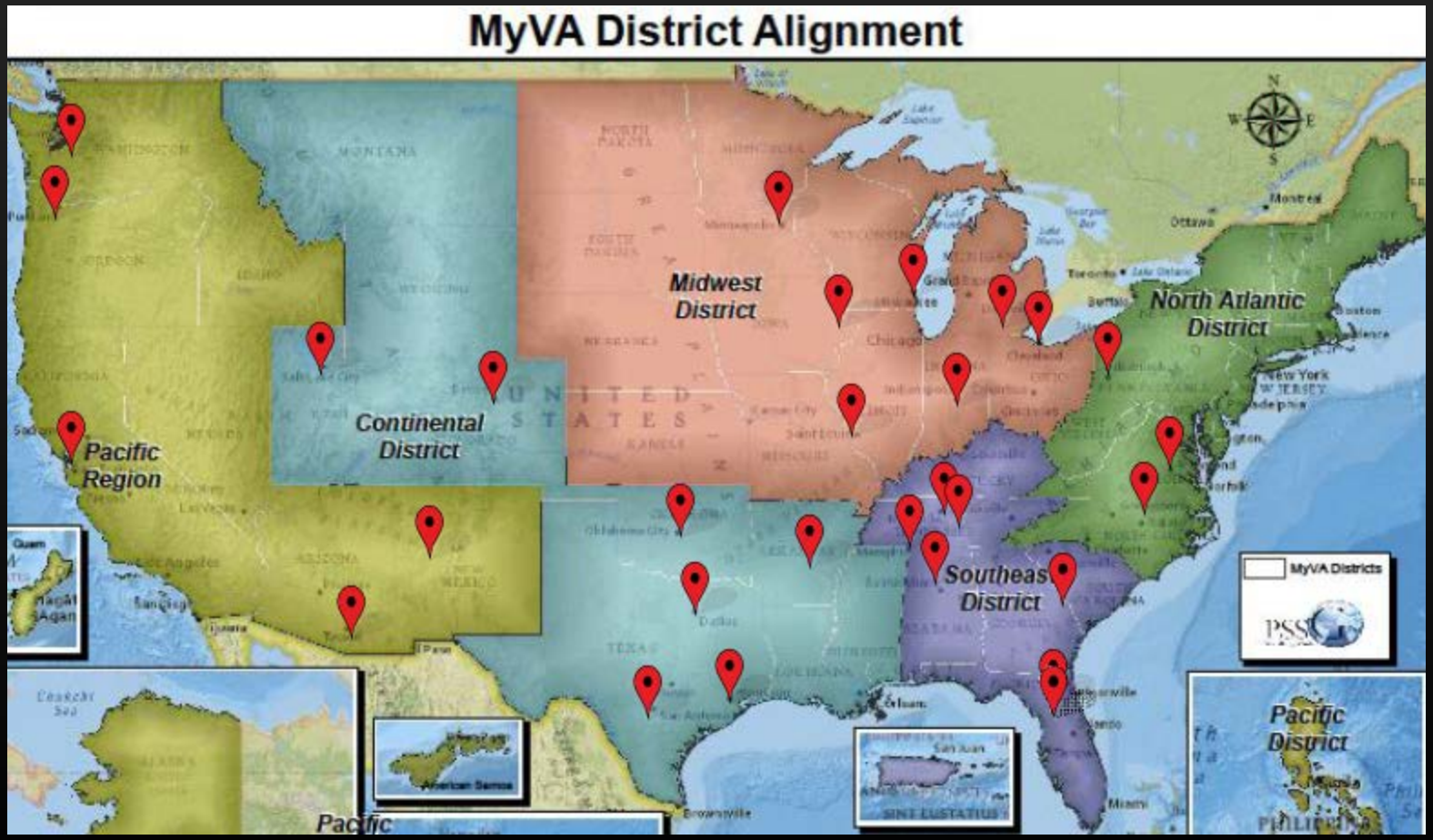
RESULTS - READMISSIONS



Burke et al., Am J Med Qual 2017

EXPANSION - DISCUSSION

How would you go about ensuring success at new sites?



T3: IMPLEMENTATION

Meissner *et al. Implementation Science* 2013, **8**:12
http://www.implementationscience.com/content/8/1/12

IMPLEMENTATION SCIENCE

METHODOLOGY Open Access

The U.S. training institute for dissemination and implementation research in health

Helen I Meissner[1*], Russell E Glasgow[2], Cynthia A Vinson[2], David Chambers[3], Ross C Brownson[4], Lawrence W Green[5], Alice S Ammerman[6], Bryan J Weiner[7] and Brian Mittman[8]

D&I FOR TNP

Leonard *et al. Implementation Science* (2017) 12:123
DOI 10.1186/s13012-017-0653-1

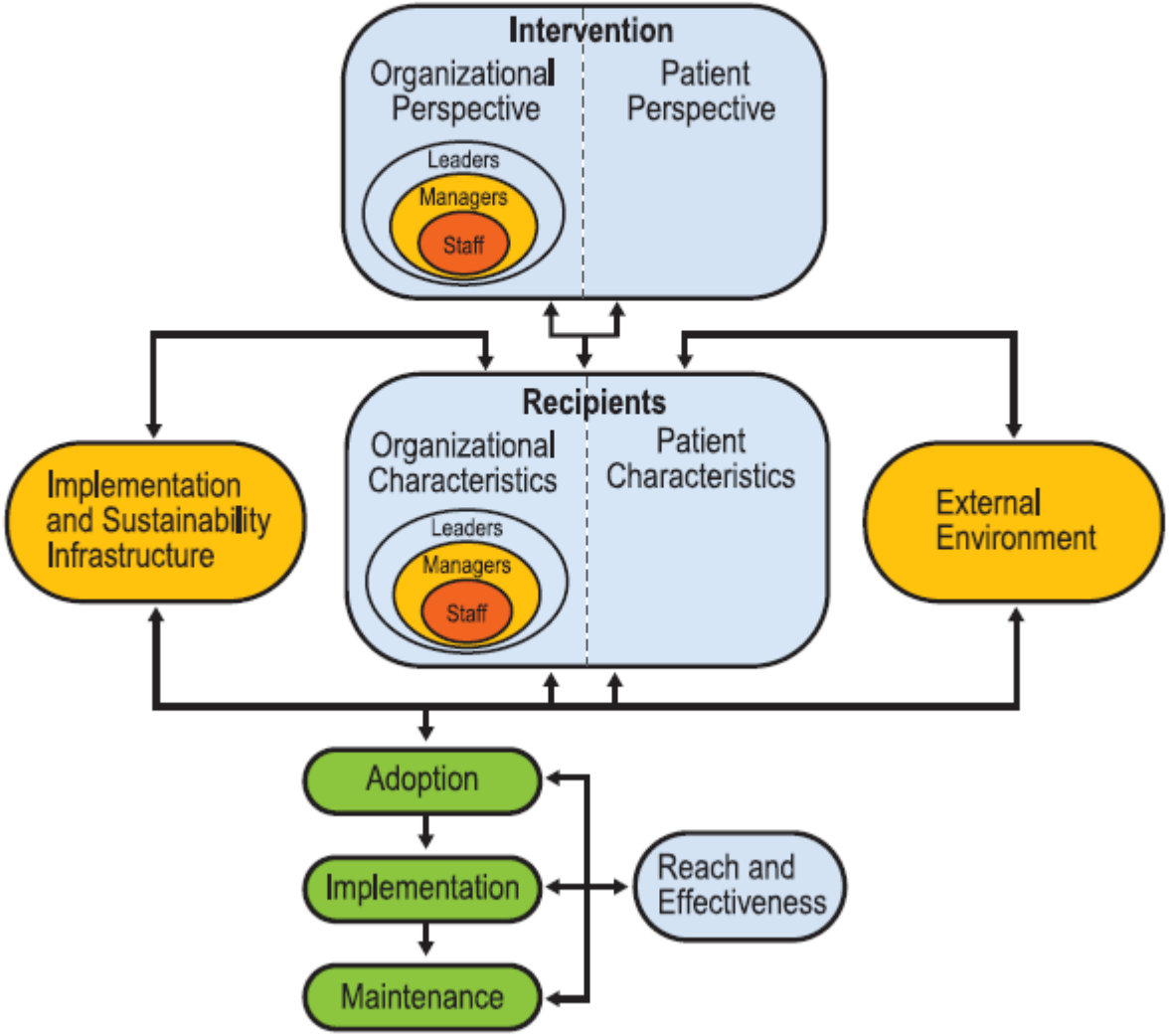
Implementation Science

STUDY PROTOCOL Open Access

Implementation and dissemination of a transition of care program for rural veterans: a controlled before and after study

Chelsea Leonard[1*], Emily Lawrence[1], Marina McCreight[1], Brandi Lippmann[1], Lynette Kelley[1], Ashlea Mayberry[1], Amy Ladebue[1], Heather Gilmartin[1], Murray J. Côté[2], Jacqueline Jones[1,3], Borsika A. Rabin[4], P. Michael Ho[1,5] and Robert Burke[1,6]

The Practical, Robust Implementation and Sustainability Model (PRISM)



PREIMPLEMENTATION

PRISM Domain	What We are Assessing	Data Collection Technique
Organizational Perspective	▪ Current transition process ▪ How TNP fits in the broader organization ▪ Contextual factors that may impede or enhance TNP implementation	▪ Process Mapping Interviews ▪ Key informant interviews ▪ Adapted mini-ethnography ▪ Brainwriting activity ▪ VA All Employee Survey, PACT survey, Pi2 index, inpatient data (IPEC) ▪ Implementation readiness survey
Patient Perspective	▪ Current transition process ▪ Satisfaction with transition process ▪ Receptiveness to TN role	▪ Veteran Interviews ▪ Adapted mini ethnography
External Environment	▪ VA regulations ▪ Existing VA infrastructure (CPRS) ▪ Political climate and funding	▪ Key informant interviews ▪ Brainwriting activity
Implementation and Sustainability Infrastructure	▪ Existing processes and systems ▪ Current transition process ▪ Existing relationships and collaboration ▪ Plan for sustainability	▪ National Level VA Quantitative Data ▪ Key informant interviews
Organizational Characteristics	▪ Management support ▪ Shared goals and cooperation ▪ Inter-facility communication	▪ National Level VA Quantitative Data ▪ Process mapping ▪ Brainwriting ▪ Key informant interviews
Patient Characteristics	▪ Demographics ▪ Rural veteran readmission dates	▪ key informant ▪ Brainwriting ▪ veteran interviews ▪ quantitative data on 30-day readmissions

IMPLEMENTATION

EVALUATION

RE-AIM Measures	TNP Definition	Measurement
R-Reach	▪ Proportion of eligible rural Veterans enrolled at each site who complete all aspects of intervention ▪ Representativeness of those enrolled	▪ #Vets enrolled ▪ Proportion of vets enrolled ▪ Representativeness of vets (based off of select demographics)
E-Effectiveness	▪ Primary outcome is emergency department visits and hospitalizations in the 30 days following index discharge; Cost of utilization (ED/hospital); Satisfaction of Veterans and providers	▪ #ED visits, cost data ▪ provider surveys ▪ Vet surveys
A-Adoption	▪ Count of inpatient providers that refer eligible Veterans to the TN for enrollment in the TNP ▪ Count of PACT providers that complete communication (close communication loop through Lync, email, phone) for care coordination with the TN as part of the TNP	▪ Dashboard ▪ Summarize quarterly ▪ Provider surveys
I-Implementation	▪ Evaluating what components of the manual and toolkit have been implemented and how they have been adapted (using Stirman framework) ▪ Barriers and facilitators to implementation/use of TN ▪ Assess TN training and core competencies ▪ Assess implementation readiness overtime	▪ Stirman tracking in database ▪ Phone calls w/ RNs ▪ In person nurse assessment ▪ TN & Hospitals interviews at training
M-Maintenance	▪ Funding or expansion of TN role at expansion sites after 3 years of funding	▪ Measured by continued implementation and expansion of TNP after 3 years of funding

T4: POLICY

CHOOSING WISELY®: NEXT STEPS IN IMPROVING HEALTHCARE VALUE

Post–Acute Care Reform: Implications and Opportunities for Hospitalists

Robert E. Burke, MD, MS[1,2,3*], Ethan Cumbler, MD[3], Eric A. Coleman, MD, MPH[4], Cari Levy, MD, PhD[1,4]

Journal of Hospital Medicine 2017;12:46-51.

CARING TRANSITIONS

Robert E. Burke, MD, MS; James Lett II, MD, CMD; Cari Levy, MD, PhD

Teaching the Bulls About the China Shop

Discharge Destination and Disparities in Postoperative Care

Robert E. Burke MD, MS and Said A. Ibrahim, MD, MPH, MBA

JAMA, 2018

TABLE 2. High-Value Areas For Hospitalists to Address Before Discharge to Post–Acute Care

Ideal Transition of Care Domain[a]	Goals	Challenges	References
Discharge Planning	Assess cognitive, functional, and medical impairments as well as social support to match PAC resources to needs	Accurate assessment challenging No clear guidelines for matching needs to resources Hospitalists may have less understanding of PAC capabilities/constraints	16,73-77
Complete Communication of Information	Provide appropriate content in information transfer to PAC	Transfer information may not include elements desired by PAC clinicians (eg medication indications, anticipated completion of time-limited medications) Infrequent documentation of care goals, mental status, and physical function	78-83
Availability, Timeliness, Clarity, and Organization of Information	Transfer information in a timely and efficient manner	Discharge summary arrives after patient PAC and hospital seldom infrequently share electronic medical record PAC clinicians may struggle to reach inpatient clinician to ask questions	84,85
Medication Safety	Effective in-hospital medication reconciliation, accurate list of medications provided to PAC	Medication list often inaccurate Medication list may include medications known to cause adverse events in elderly	8,9,86-90
Educate Patients, Promote Self-Management	Engage patients in their own medical care and functional recovery	Cognitive impairment common Patients and caregivers may struggle to transition after long hospital/post–acute care stay in which care was provided by others	82,91-95
Enlist Help of Social and Community Supports	Identify high-performing PAC providers for collaboration	Medicare "5-star" ratings may not correlate with readmissions and consumer perceptions and may exacerbate disparities Unclear how to identify high-performing sites	8,26,34,96,97
Advance Care Planning	Identify decision maker and care goals; palliative referral when appropriate	Hospitalization often chaotic, patient and caregiver participation difficult Varying levels of comfort among providers who are having these conversations	45,98-102
Coordinating Care Among Team Members	Coordinated evaluation before discharge and with PAC provider	Time-consuming bidirectional barriers to reaching responsible clinician at other care site	78,79
Monitoring and Managing Symptoms After Discharge	Identify and treat acute medical issues before PAC discharge to prevent readmission	External influences to discharge patients to PAC "quicker and sicker" Unclear expectations of level of monitoring PAC can and should provide Limited medical training and increased turnover of frontline PAC staff	2,4,8-10,103,104

HEALTH AND AGING POLICY

EXAMPLE PROJECT

MEDICARE INNOVATION

By Melvin J. Ingber, Zhanlian Feng, Galina Khatutsky, Joyce M. Wang, Lawren E. Bercaw, Nan Tracy Zheng, Alison Vadnais, Nicole M. Coomer, and Micah Segelman

DOI: 10.1377/hlthaff.2016.1310
HEALTH AFFAIRS 36,
NO. 3 (2017): 441–450

AGING & HEALTH

Initiative To Reduce Avoidable Hospitalizations Among Nursing Facility Residents Shows Promising Results

A FEW CDA LESSONS

- Yes, the Masters is really worth it
- Mentors (and environment) are EVERYTHING
- Flexibility and opportunism critical
  - Waiting on the RHF or approvals for interviews
  - Rural Transitions pilot ->TIDIRH -> ORH/ONS funding
- CDA funding is necessary, but not sufficient
- Think broadly about career development

THANK YOU

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