Using Quality Improvement to Drive Sustainability for Home and Community Based Service (HCBS) Providers

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Causes of wasteful spending

EXHIBIT 1

Estimates of Waste in US Health Care Spending in 2011, by Category

	Cost to Medicare and Medicaid[a]			Total cost to US health care[b]		
	Low	**Midpoint**	**High**	**Low**	**Midpoint**	**High**
Failures of care delivery	$26	$36	$45	$102	$128	$154
Failures of care coordination	21	30	39	25	35	45
Overtreatment	67	77	87	158	192	226
Administrative complexity	16	36	56	107	248	389
Pricing failures	36	56	77	84	131	178
Subtotal (excluding fraud and abuse)	166	235	304	476	734	992
Percentage of total health care spending	6%	9%	11%	18%	27%	37%
Fraud and abuse	30	64	98	82	177	272
Total (including fraud and abuse)	197	300	402	558	910	1,263
Percentage of total health care spending				21%	34%	47%

SOURCE Donald M. Berwick and Andrew D. Hackbarth, "Eliminating Waste in US Health Care," *JAMA* 307, no. 14 (April 11, 2012):1513–6. Copyright © 2012 American Medical Association. All rights reserved.
NOTES Dollars in billions. Totals may not match the sum of components due to rounding. [a]Includes state portion of Medicaid. [b]Total US health care spending estimated at $2.687 trillion.

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Poor care coordination reflected by readmissions

1 in 5 Medicare patients are readmitted every month

1 in 4 Duals are readmitted every month

Jencks SF, er al. NEJM 2009; 360 (14):1418-1428.

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Poor care coordination stems from poor communication

- **80 percent of serious medical errors** involve miscommunication during the hand-off between medical providers (1)
- Breakdown in communication **leading root cause of sentinel events** reported to The Joint Commission between 1995 and 2006 (2)
- 11% of 30,000 preventable adverse events that led to permanent disability in Australia were **due to communication issues** (3)
- **Care transition programs** can effectively improve communication and reduce avoidable admissions (4)

1. Solet, DJ et al Lost in translation: challenges-to-physician communication during patient hand-offs. Academic Medicine 2005; 80:1094-9.
2. The Joint Commission Sentinel Event Data Unit. http://www.centerfortransforminghealthcare.org/assets/4/6/CTH_Hand-off_commun_set_final_2010.pdf
3. Zinn C. 14,000 preventable deaths in Australia. BMJ, 1995, 310:1487
4. Vaerhagh et al. Health Affairs. 2014.

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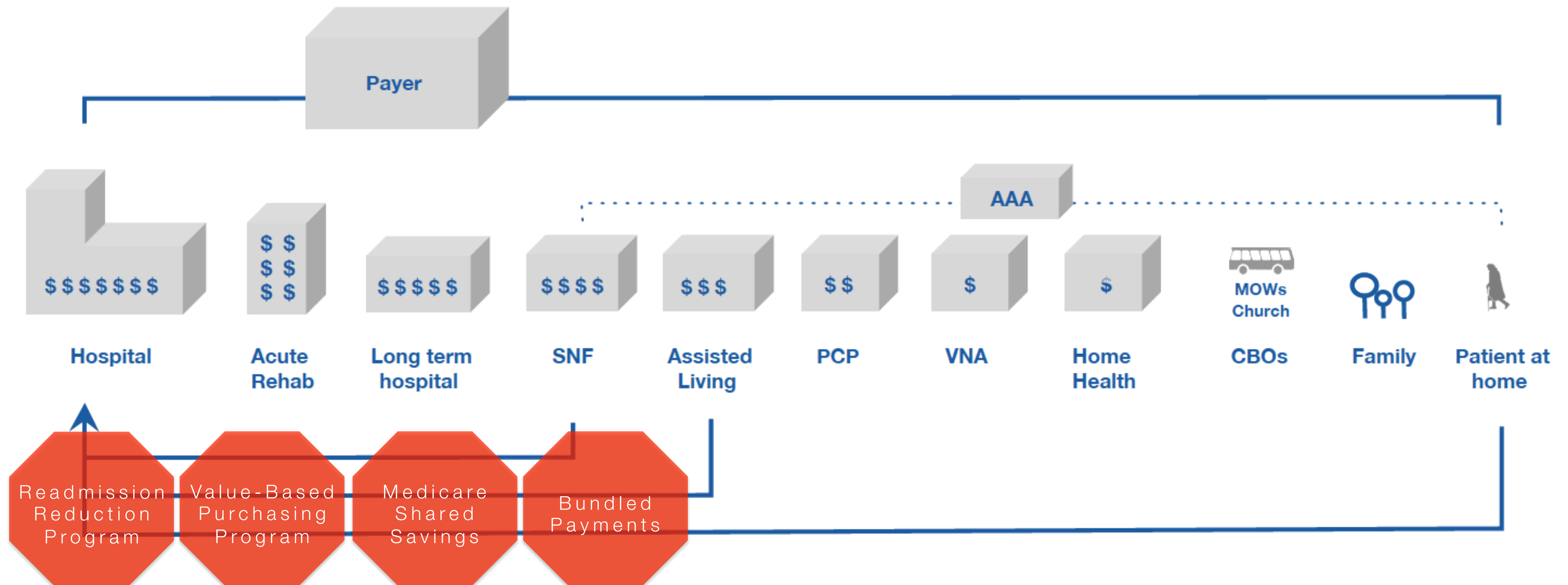
Affordable Care Act penalizing avoidable readmissions



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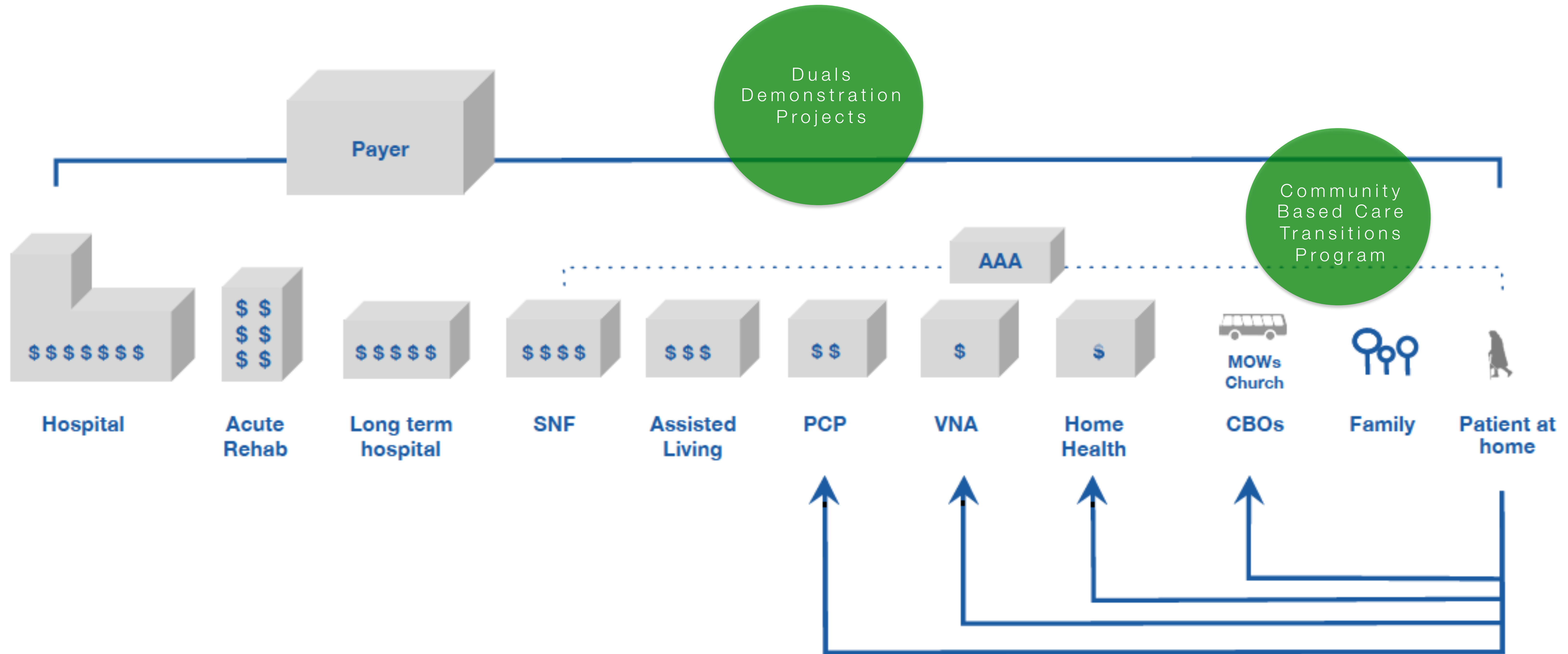
ACA also creating positive incentives



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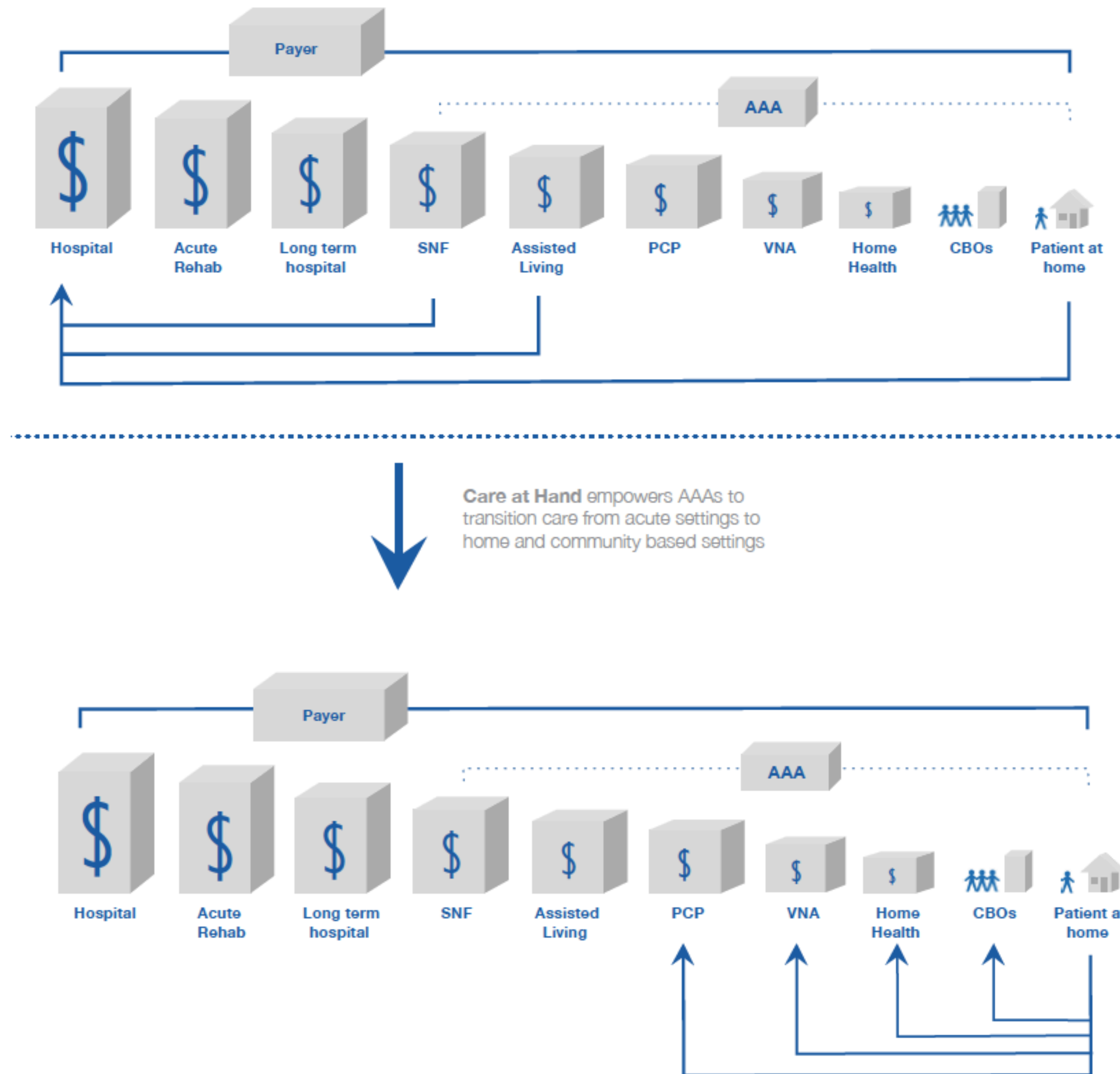
ACA forcing a shift toward less expensive care transition models



- Readmission reduction program
- Value-based purchasing program
- Medicare Shared Savings
- Bundled payments
- Duals demonstration program
- Community based care transitions program
- Medicaid Waivers
- Money follows the person
- Community First Choice
- Chronic Care Management
- Balanced improvement program
- State innovation models

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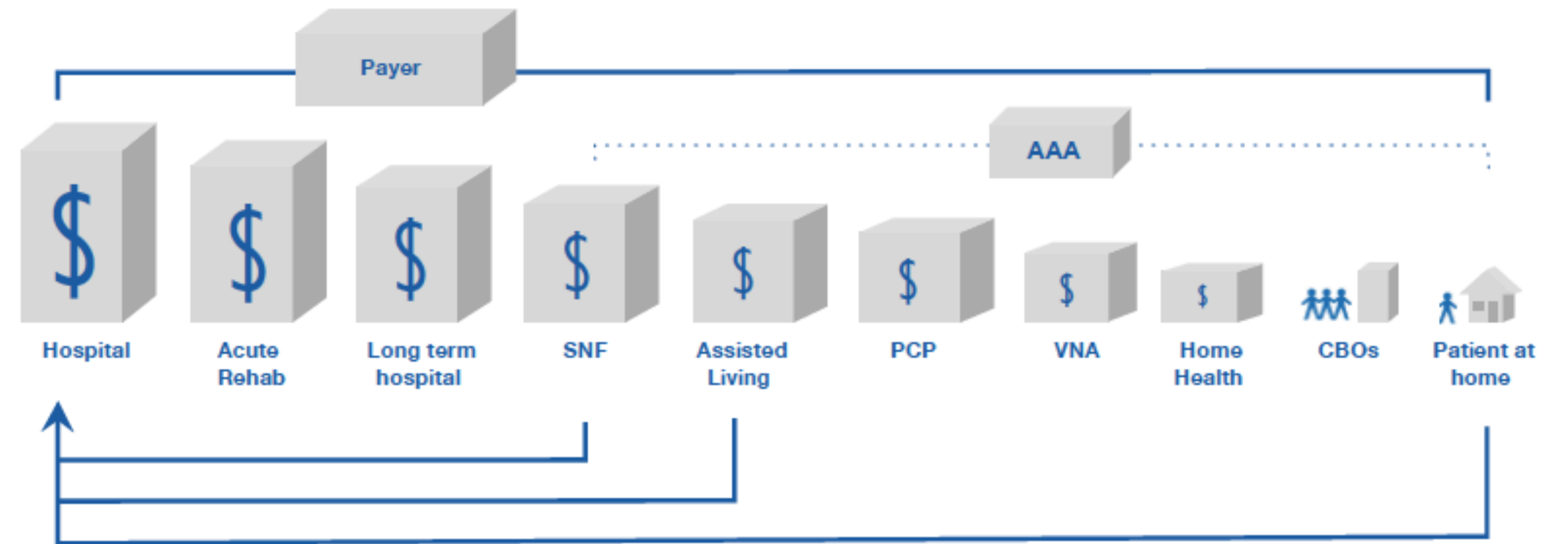
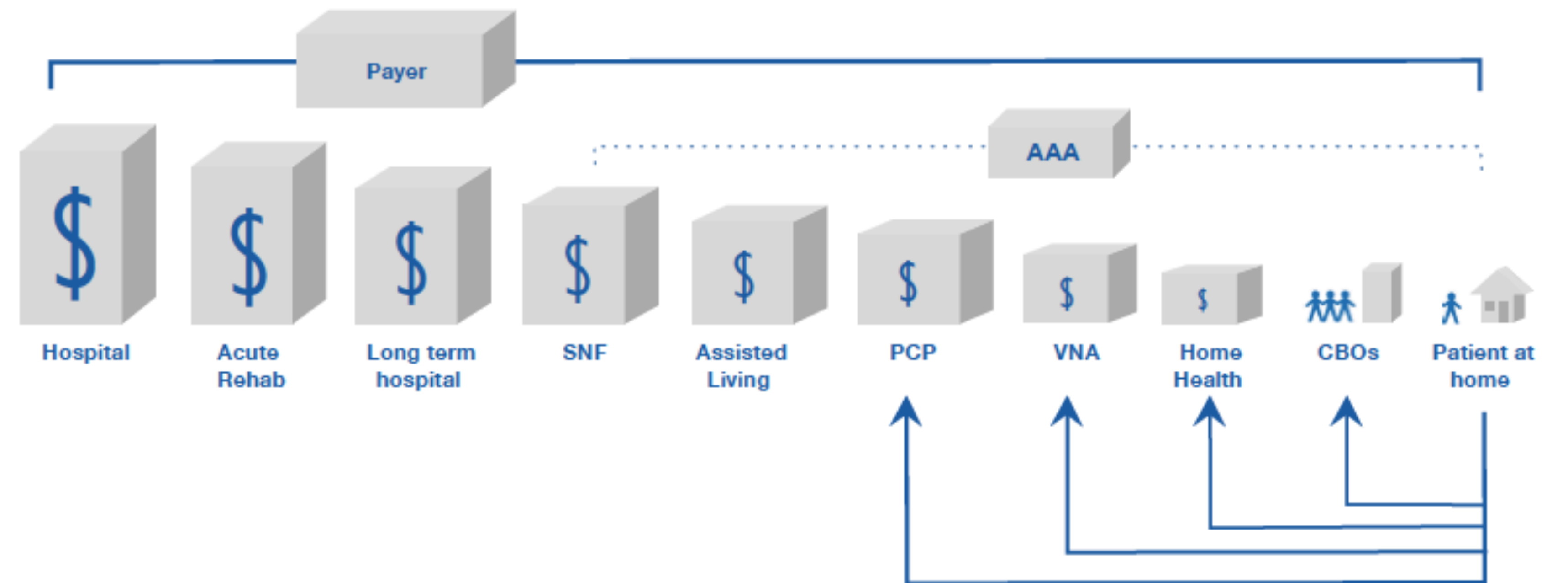
fees per readmission = $250



Cost of care transitions program needs to be ≤ $250



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Guided Care

$1,732 per consumer per year

Leff B *et al* (2009). Guided care and the cost of complex healthcare: a preliminary report. Am J Manag Care. 15(8):555-9

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Geriatric Resources for Assessment and Care of Elders (GRACE)

$1,432 per consumer per year

Counsell SR *et al* (2009). Cost analysis of the Geriatric Resources for Assessment and Care of Elders care management intervention. Journal of the American Geriatric Society. 57(8):1420-6

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Transitional Care Model (Naylor Model)

$982 per consumer per year

Naylor MD *et al* (2004). Transitional Care of Older Adults Hospitalized with Heart Failure: A Randomized Controlled Trial. J Am Geriatr Soc 52:675–684

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Care Transitions Intervention (Coleman Model)

$196+ per consumer per year

Coleman EA, Parry C, Chalmers S, Min S-J. The care transitions intervention: results of a randomized controlled trial. Arch Intern Med 2006;166:1822-1828.

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Health Coach is a **Nurse**

Care coordination

Care management

Med rec

Red flags education

f/u appointments

For 800 patients per month, need *32 nurses ($45-70k/yr)

*Interview with Dr. Eric Coleman: http://www.modernhealthcare.com/article/20100816

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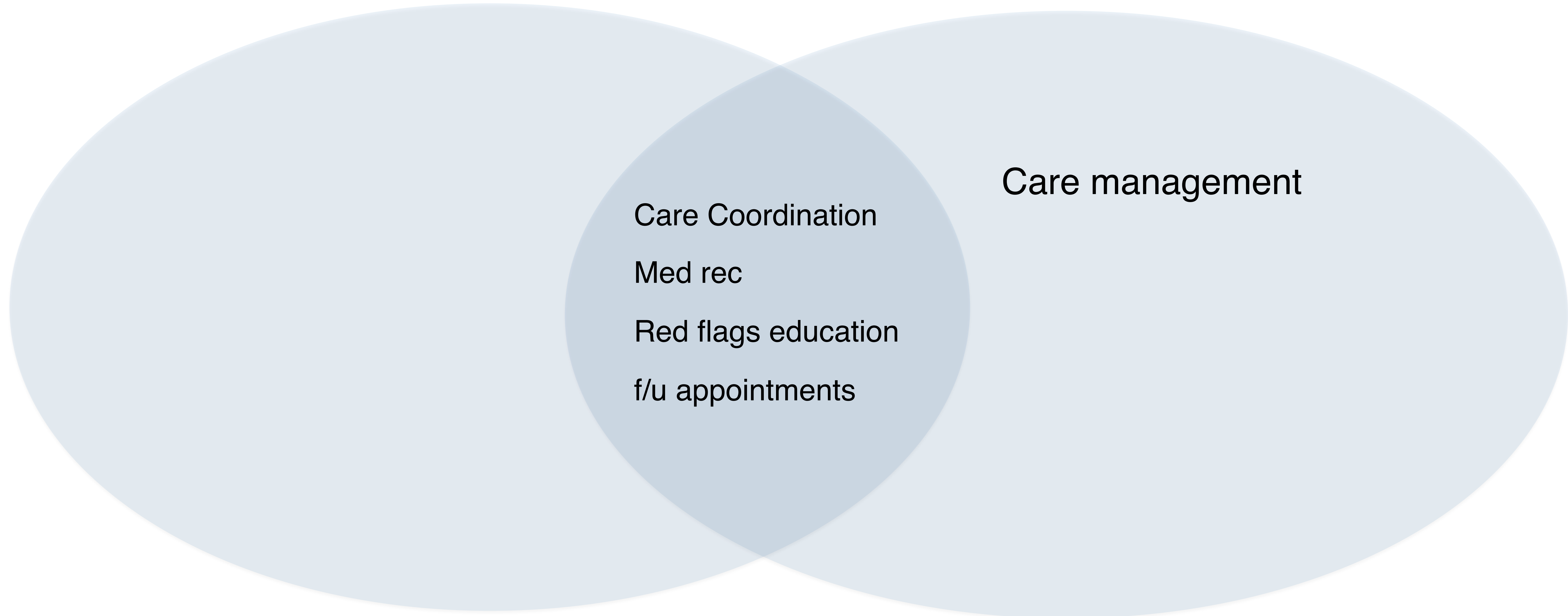

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Health Coach

Nurse Care Manager

Same community

Same education level

Same language

Same cultural background

Care Coordination

Med rec

Red flags education

f/u appointments

Care management

Communication with physicians

Triage

Sick vs Not Sick

Education of coach

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Health Coach

- Same community
- Same education level
- Same language
- Same cultural background

Health Coach & Nurse Care Manager (shared)

- Care Coordination
- Med rec
- Red flags education
- f/u appointments

Nurse Care Manager

- Care management
- Communication with physicians
- Triage
- Sick vs Not Sick
- Education of coach

For 800 patients per month, need 20 health coaches ($30k/yr) + 1 nurse*

*Admin staff is an essential component of a successful program

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What we do

Smart surveys that accurately predict hospitalizations using observations of non-clinical workers

Expert-informed,
Psychometrically validated,
Field tested

Evidence-based,
Statistically significant,
Inputs: non-clinical observations

Must-have data with most granular leading indicators in the market

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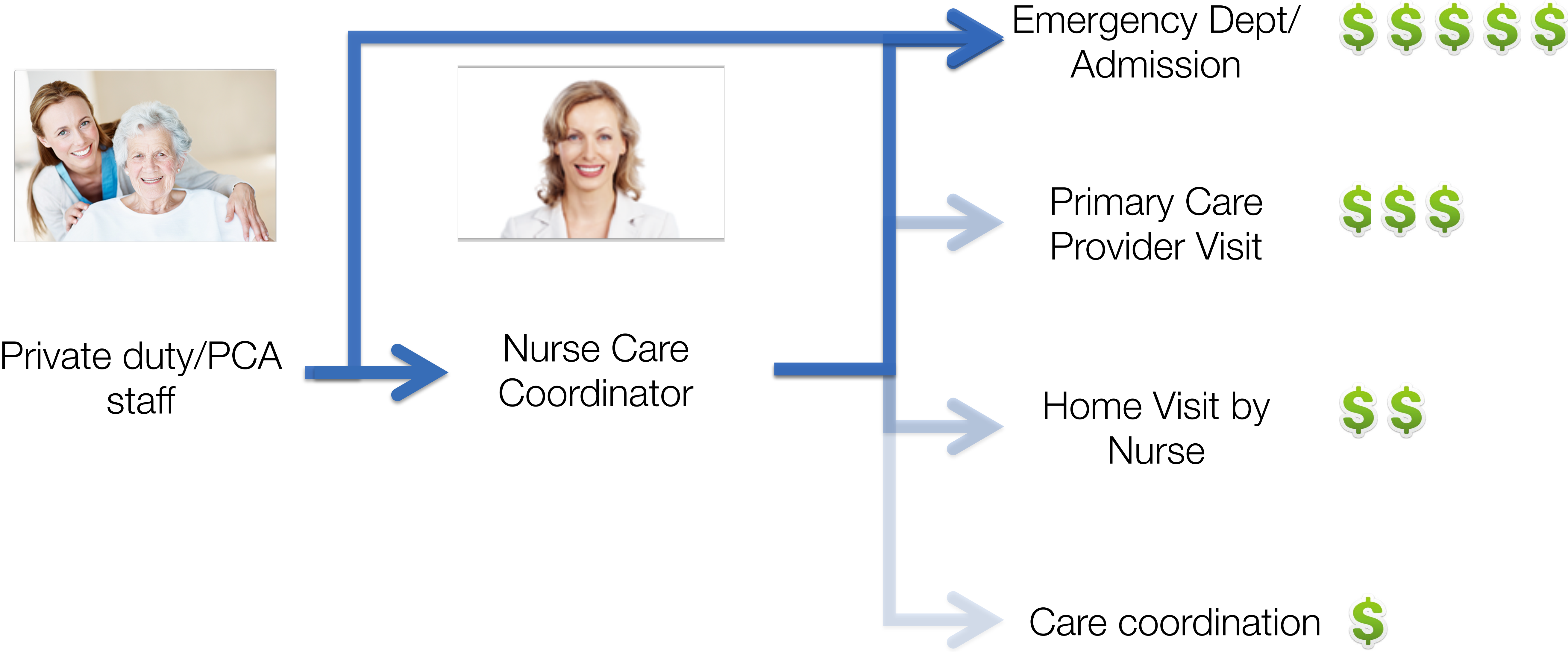
Before Care at Hand – communication breakdowns between nurse and nonclinical coach

Organizations pay for and underutilize **5 million** non-clinical workers in attempting to reduce **$250 BILLION** in avoidable costs



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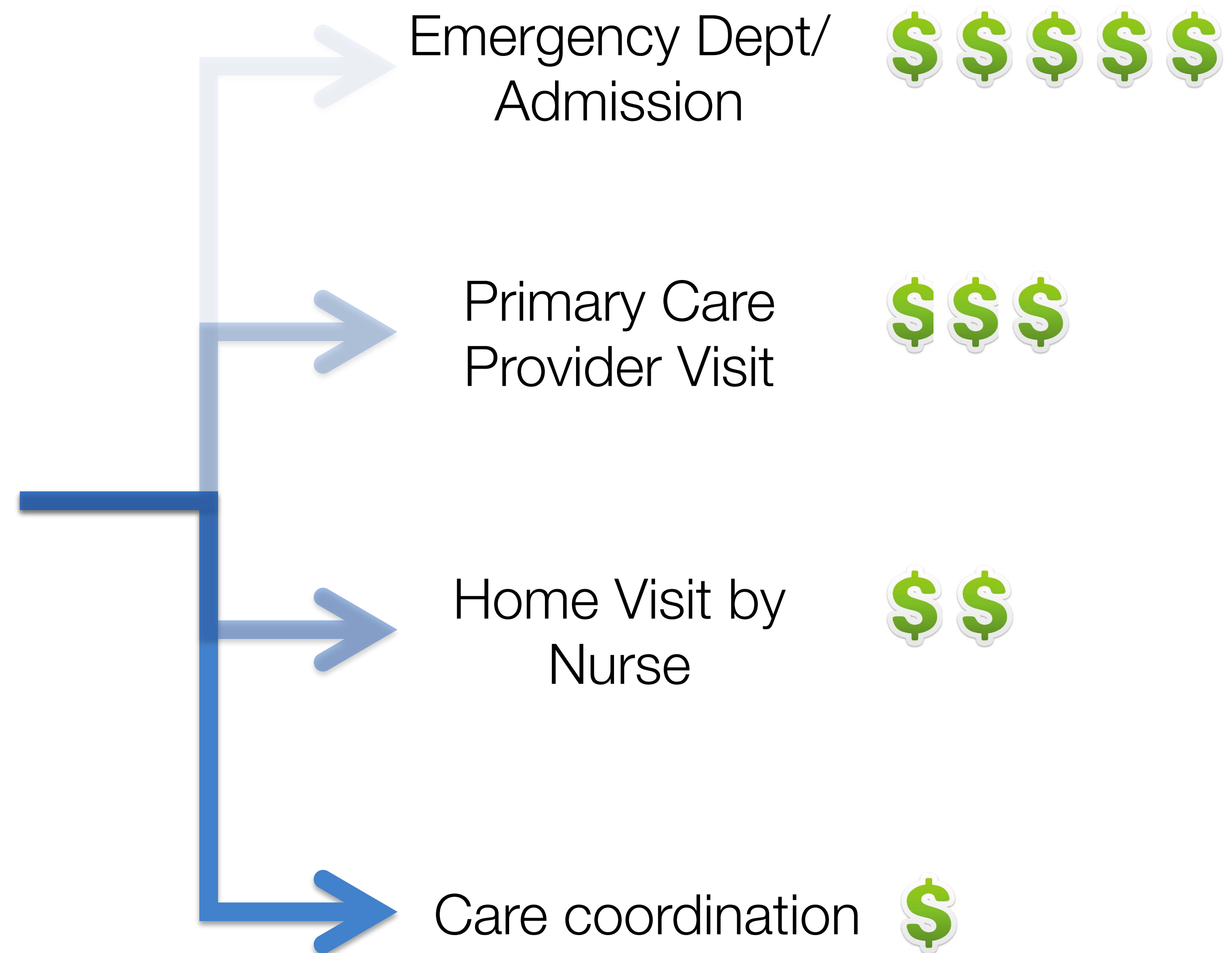
Alerts triggered by Care at Hand technology

Digitizing the "hunch" of non-clinical workers to detect early decline

Private duty/PCA staff

Nurse Care Coordinator



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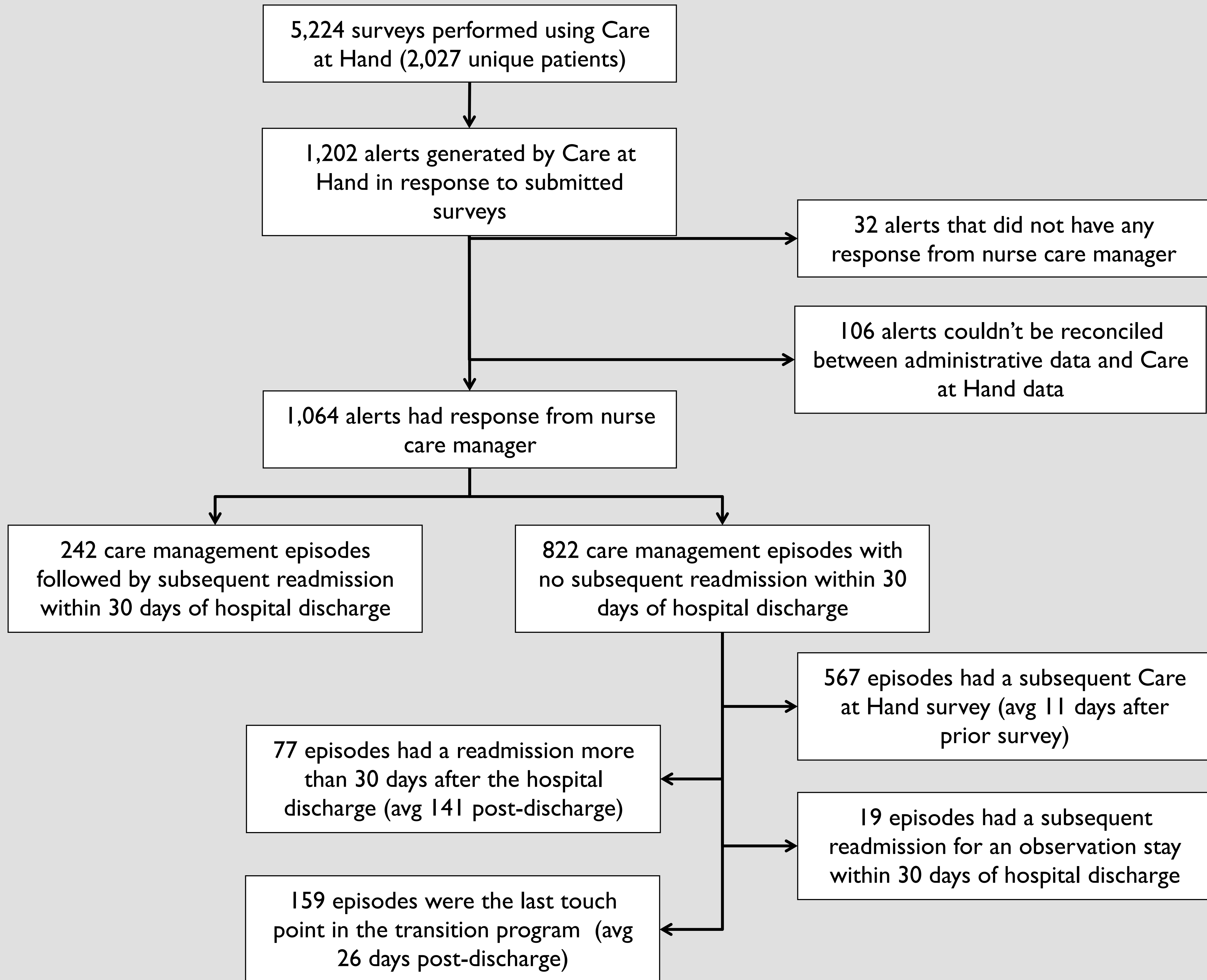

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Risks for readmission

- Intrinsic (3)
  - Medical or surgical condition
  - Mental or behavioral problem
  - Functional decline

- Extrinsic (21)
  - Environmental (7 domains)
  - Care coordination breakdowns (14 domains)

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Intrinsic	Extrinsic	
	Care Coordination	Environmental
Worsening medical or surgical condition (ie chest pain, shortness of breath, etc)	Management of a specific condition	Financial insecurity (ie can't afford basic necessities)
Worsening mental or behavioral health problem (ie depression, noncompliance, etc)	Setting up PCP or specialist appointment	Food insecurity (ie lack of access to high quality nutrition)
Functional decline (ie needs help witih more ADLs, worsening frailty, etc)	Coordination issue remained unresolved (Loop not closed)	Housing insecurity (ie risk of homelessness)
	Skilled home care assessment, referral, or service	Housing quality (ie bug or rodent infestations, elevator out, no heat, appliance not working, etc)
	Non-skilled home care assessment, referral, or service	Violence or abuse
	Behavioral health assessment, referral, or service	Transportation (ie can't get to appointments, etc)
	Home safety assessment	Legal
	Other home and community services based assessment, referral, or service	
	Medications ordered and filled	
	Medication reconciliation	
	Ongoing medication management in the home (filling syringes, applying creams, etc)	
	Durable medical equipment (DME) ordered and filled	
	Inadequate family or community support to help with function	
	Patient or family education or health literacy	

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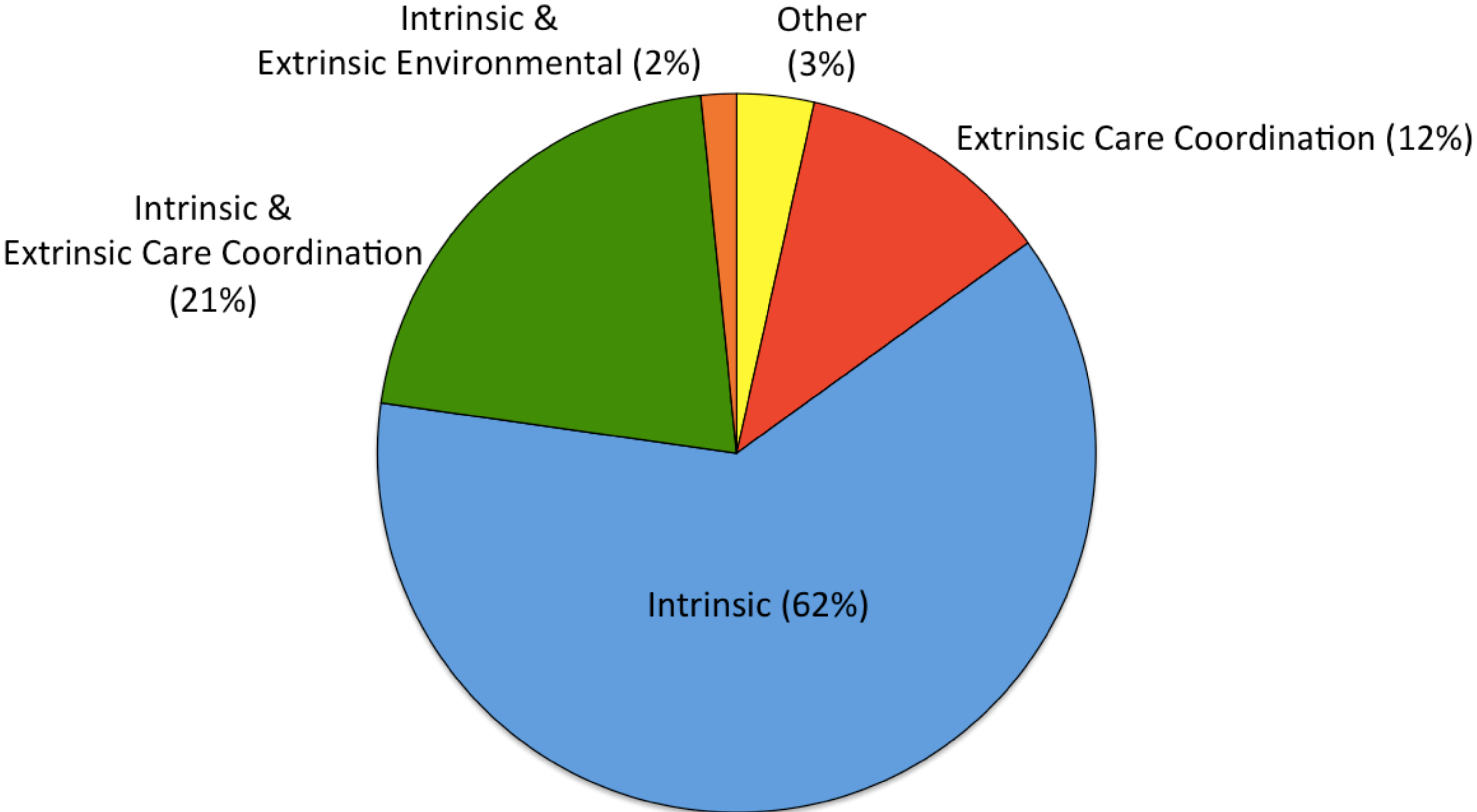
Intrinsic and extrinsic readmission risk factors overlap



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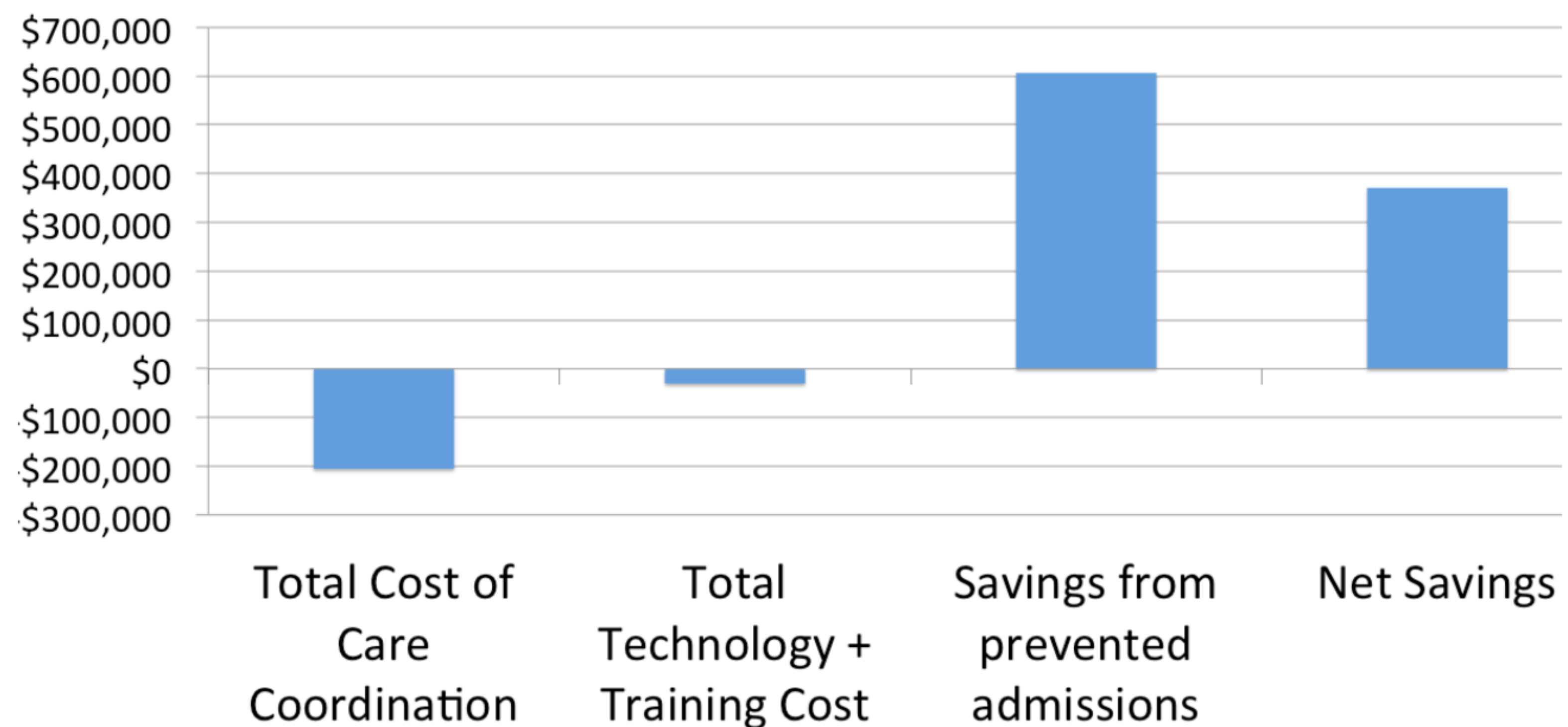
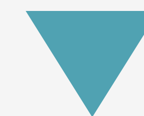
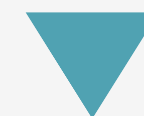
Non-clinical workers reduce costs, predict readmissions

Estimated Net Savings





39.6%
30 day readmissions



$109
savings per member per month

$2.54
net savings for every $1 invested

AHRQ. Service Delivery Innovation: Community-Based Health Coaches and Care Coordinators Reduce Readmissions Using Information Technology To Identify and Support At-Risk Medicare Patients After Discharge. Rockville, MD. 2014.

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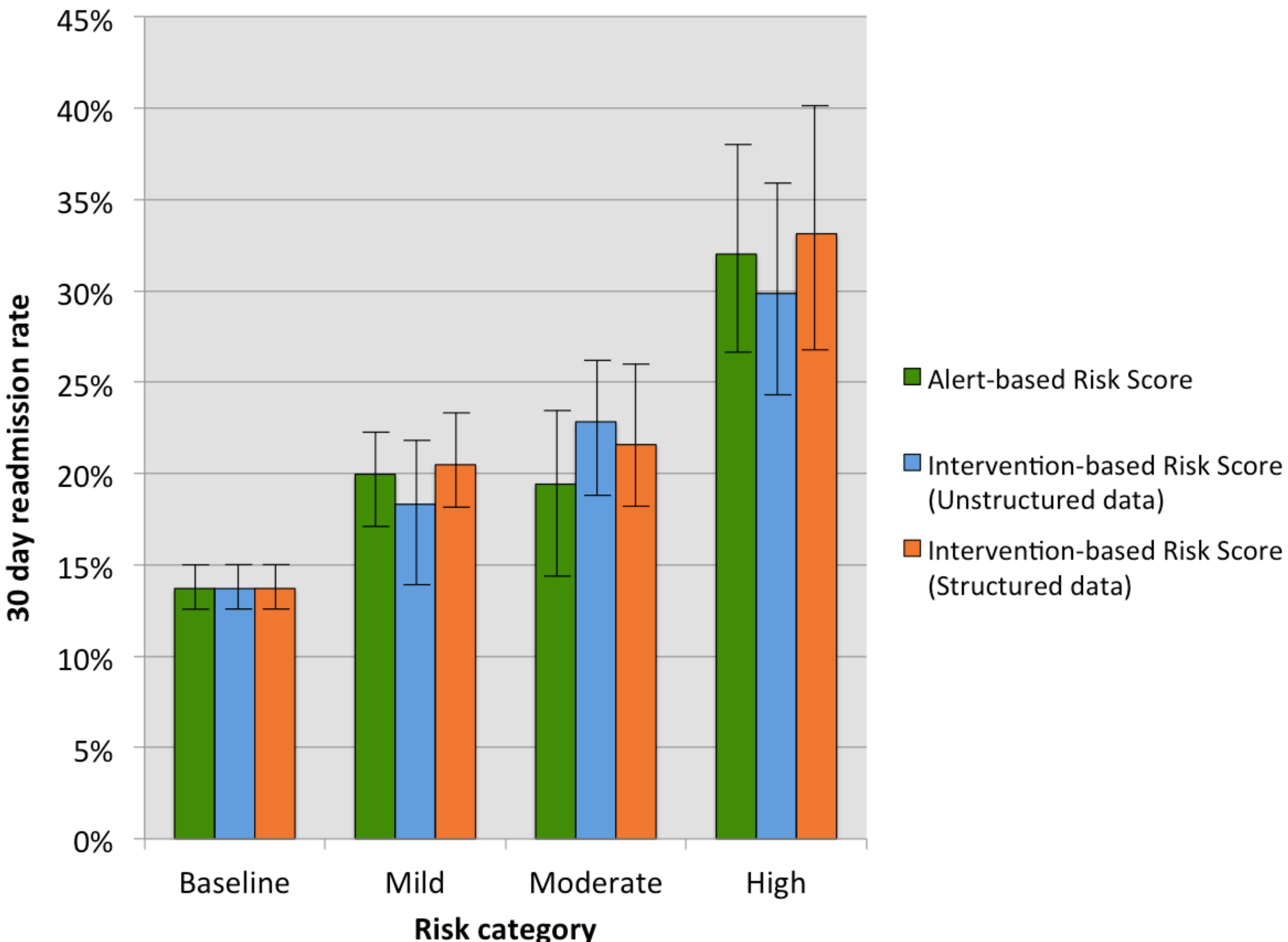
Nurse input improves prediction of 30-day readmission risk



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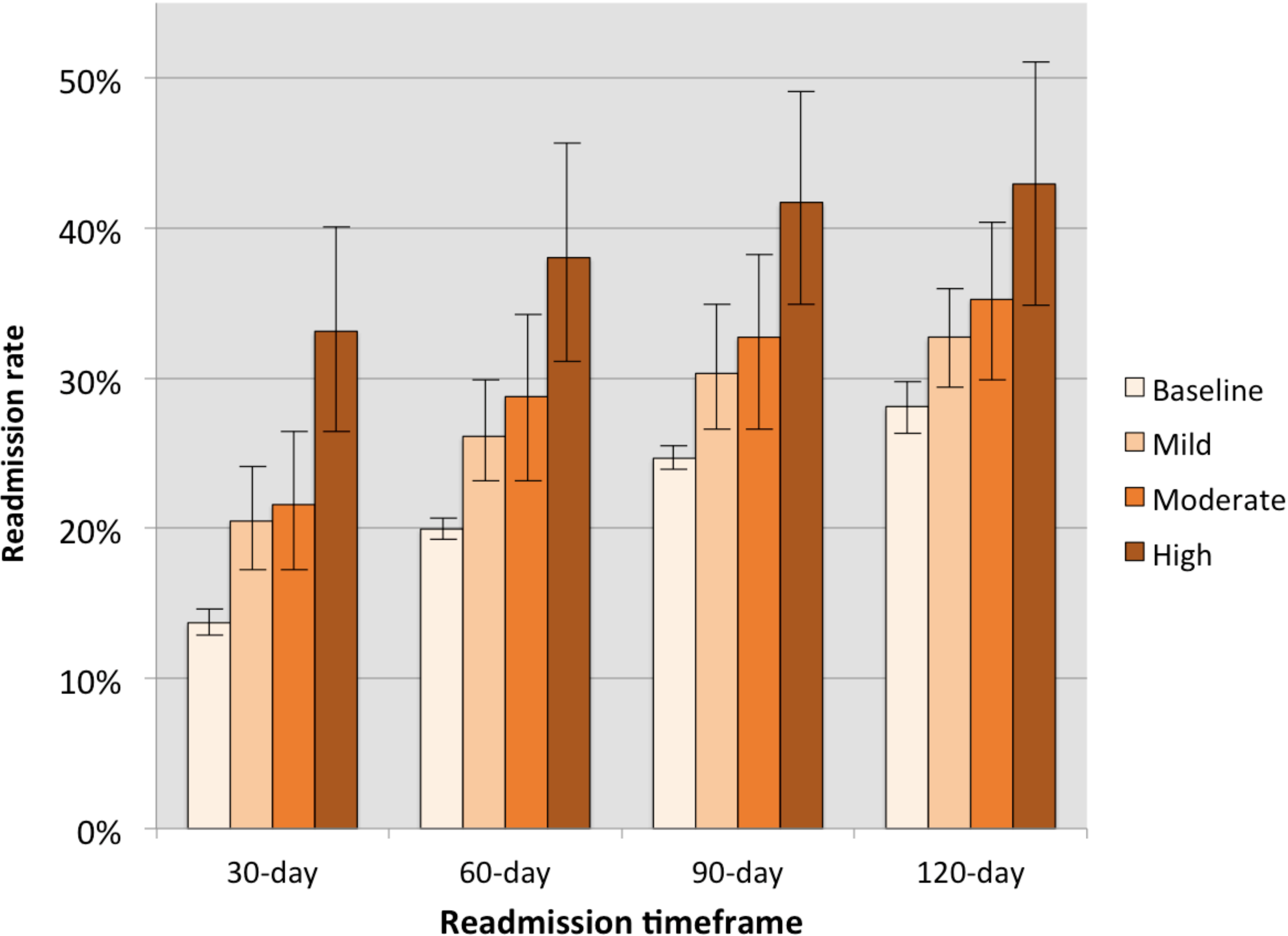
mHealth + non-clinical staff input + nurse oversight *predict* 120-day readmissions



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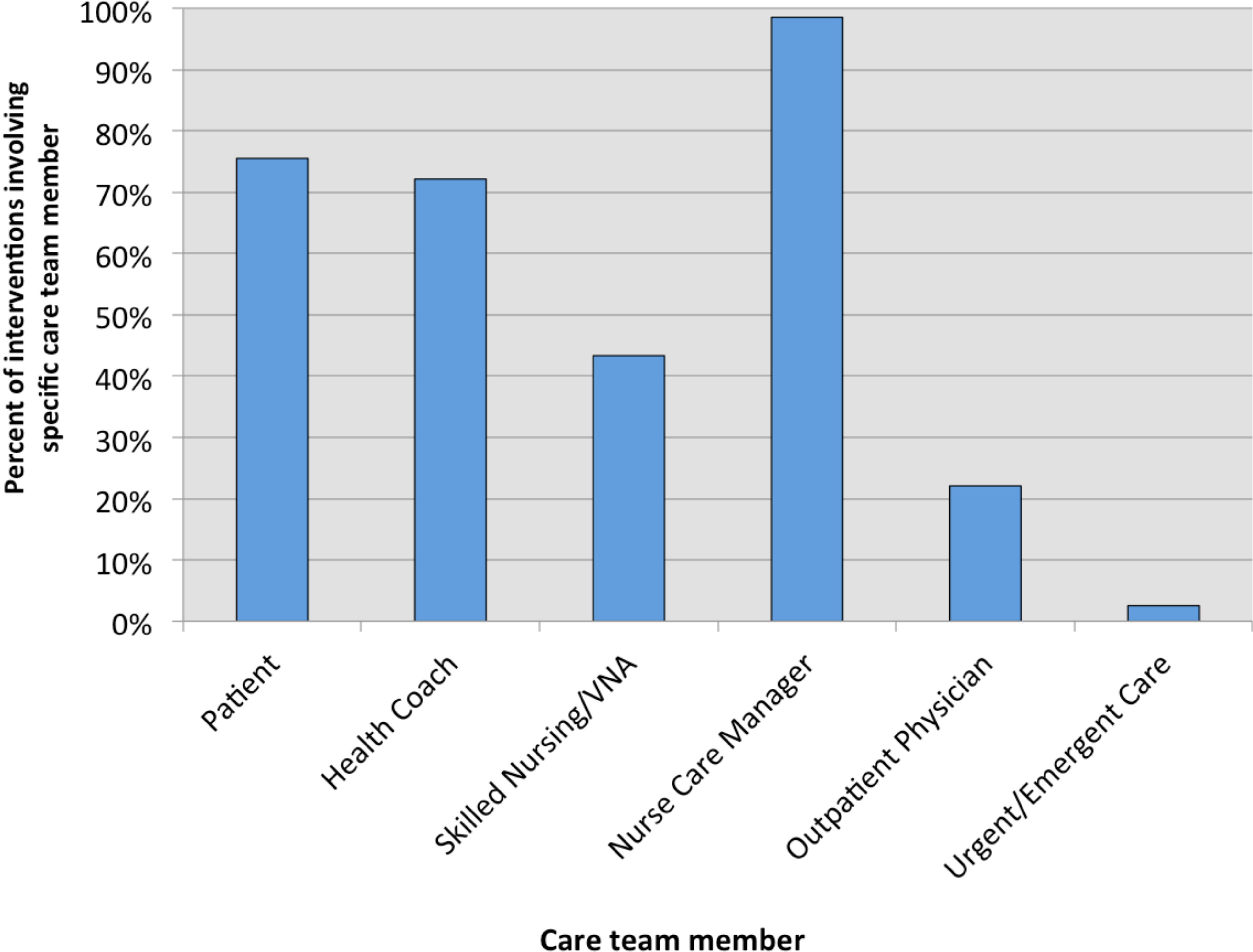
Skilled nursing involved in over 40% of care coordination episodes



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Efficiently innovating with new delivery models

No evidence

Quality Improvement

Evidence-based practice

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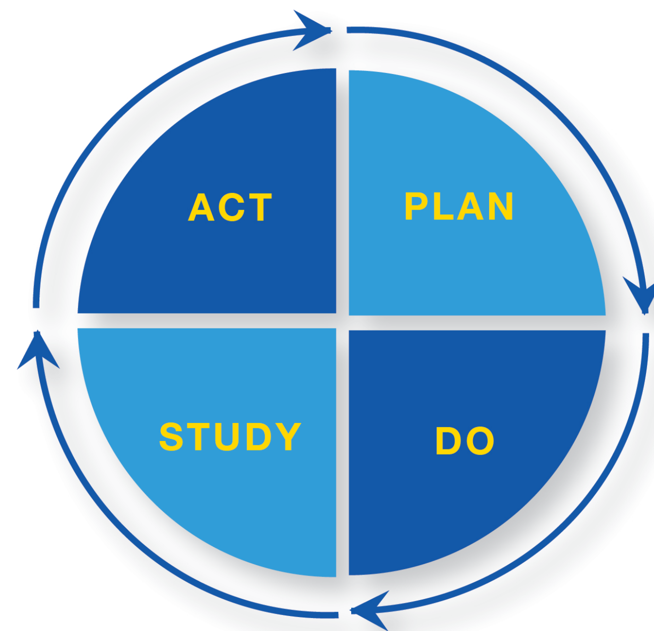
Rapid Cycle Testing – Quality Improvement



Adapted from Langley et al. The Improvement Guid

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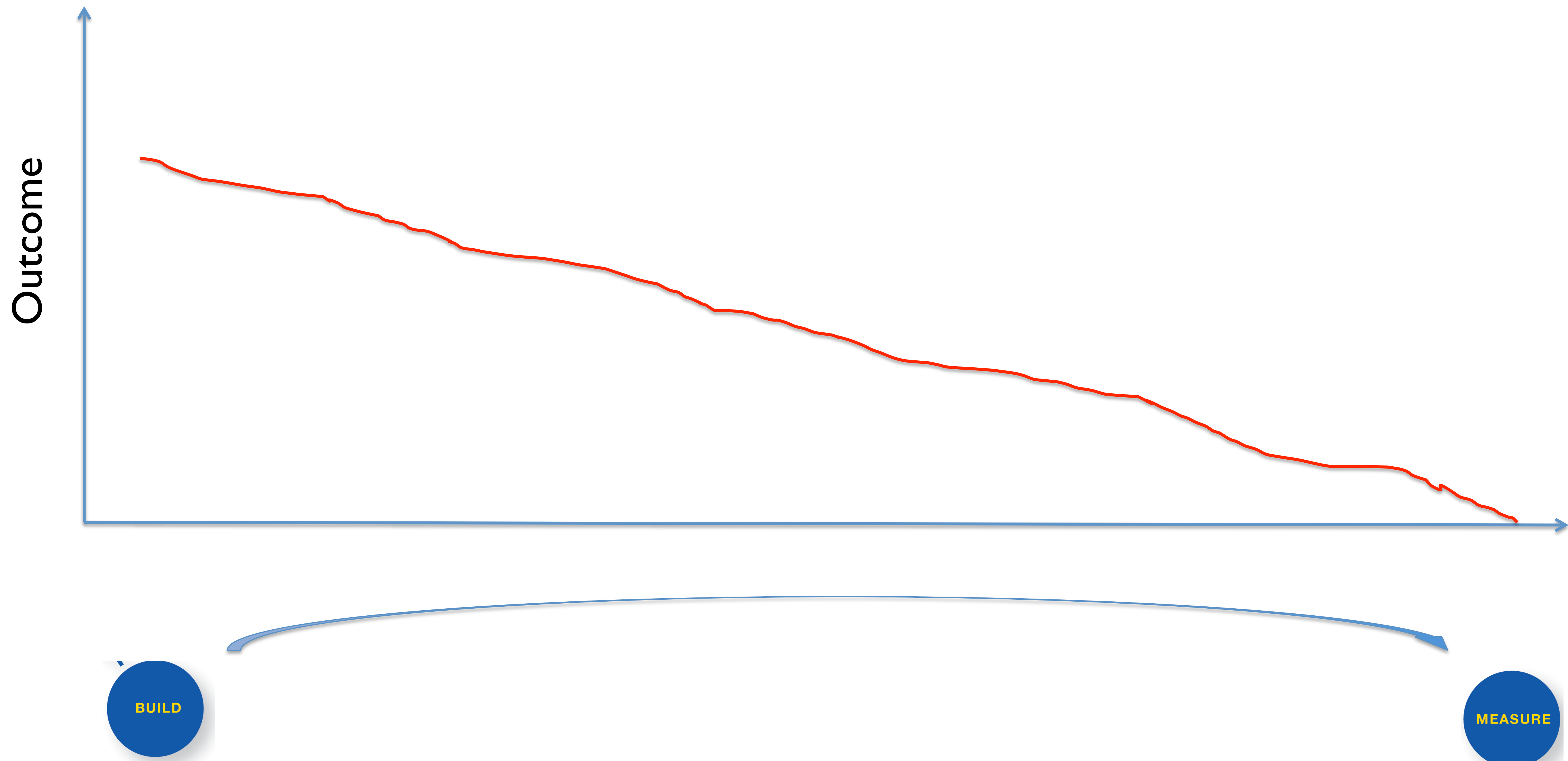
Why is rapid cycle testing so important?



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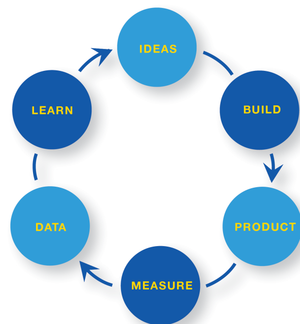
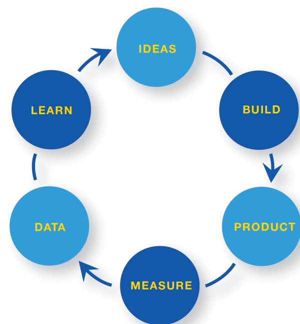
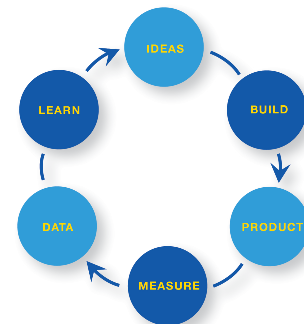
Why is rapid cycle testing so important?

Outcome







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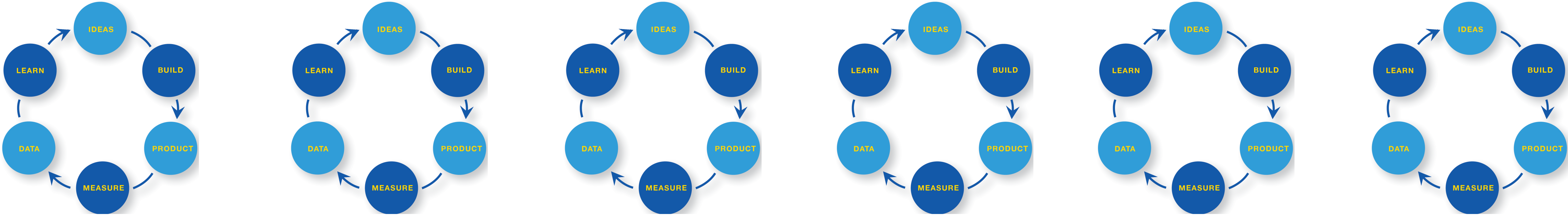
Get to more sales or better outcomes faster and cheaper

Outcome



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PDSA Wizard

Aim Statement	Primary Drivers	Secondary Drivers	Change Strategies
Help AAA | increase hospital-based revenue| by 20% | by providing care transitions services | at ½ the cost of traditional transition services | within 6 months			
Add new Aim	Add new Primary Driver	Add new Secondary Driver	Add new change strategy

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PDSA Wizard

Aim Statement	Primary Drivers	Secondary Drivers	Change Strategies
Help AAA | increase hospital-based revenue| by 20% | by providing care transitions services | at ½ the cost of traditional transition services | within 6 months	Showing value to hospitals		
	Providing transitions at lower cost than hospitals		

Add new Aim

Add new Primary Driver

Add new Secondary Driver

Add new change strategy

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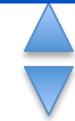
PDSA Wizard

Aim Statement | Primary Drivers  Secondary Drivers | Change Strategies

Help AAA | increase hospital-based revenue| by 20% | by providing care transitions services | at ½ the cost of traditional transition services | within 6 months

Showing value to hospitals

Providing transitions at lower cost than hospitals

Not enough business acumen

No way to measure impact of transition program in real time

No trust from hospitals

No published data to show hospitals AAA impact

Not enough experience doing transitions using non-clinical staff

Add new Aim

Add new Primary Driver

Add new Secondary Driver

Add new change strategy

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PDSA Wizard

Aim Statement	Primary Drivers	Secondary Drivers	Change Strategies
Help AAA | increase hospital-based revenue | by 20% | by providing care transitions services | at ½ the cost of traditional transition services | within 6 months	Showing value to hospitals	No way to measure impact of transition program in real time	Bootcamp and ongoing TA for biz acumen
	Providing transitions at lower cost than hospitals	No trust from hospitals	Use Care at Hand QI Dashboards and PDSA Wizard
		Not enough business acumen	Submit for case studies like AHRQ innovations exchange, etc
		No published data to show hospitals AAA impact	Bootcamp and ongoing TA on QI
		Not enough experience doing transitions using non-clinical staff	Real-time identification of knowledge deficits

Add new Aim

Add new Primary Driver

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PDSA Wizard

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PDSA Wizard

Aim Statement

Help AAA | increase hospital-based revenue| by 20% | by providing care transitions services | at ½ the cost of traditional transition services | within 6 months

Add new Aim

Primary Drivers

Showing value to hospitals

Providing transitions at lower cost than hospitals

Add new Primary Driver

Secondary Drivers

No way to measure impact of transition program in real time

No trust from hospitals

Not enough business acumen

No published data to show hospitals AAA impact

Not enough experience doing transitions using non-clinical staff

Add new Secondary Driver

Change Strategies

Bootcamp and ongoing TA on QI

Bootcamp and ongoing TA for biz acumen

Submit for case studies like AHRQ innovations exchange, etc

Real-time identification of knowledge deficits

[COMPLETED – Scaled] Use Care at Hand QI Dashboards and PDSA Wizard

Add new change strategy

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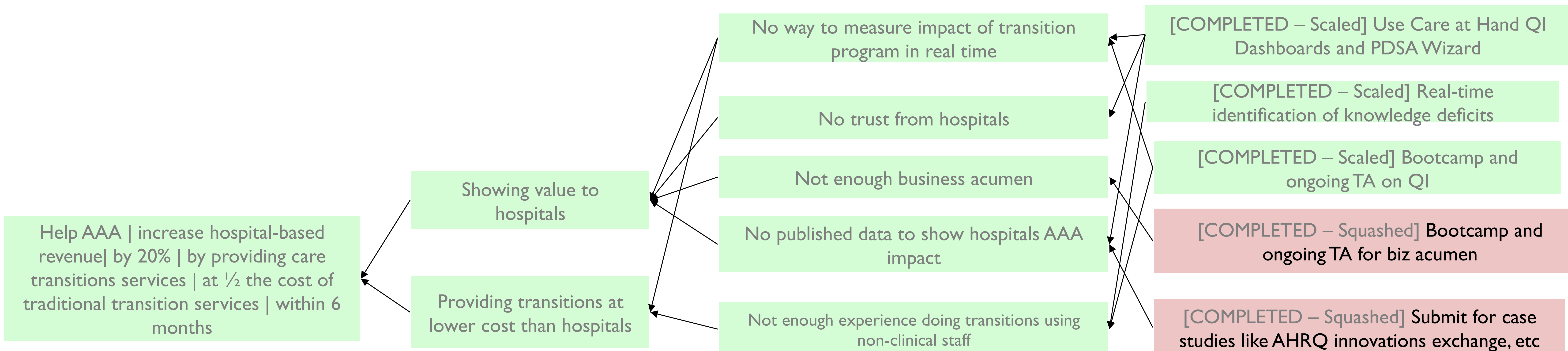
PDSA Wizard



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What happens when the first PDSA doesn't work

PDSA – 1

- PLAN – (hypothesis) if we increase our per diem hours on the weekend for coaches and nurses so that they are allowed to make home visits will it decrease our HV lag time to within 48 hours of d/c?
- DO – RN to cover CAH from 8am to 2pm on Saturday and Sunday. Coaches will book up to 4 HV's each per day.
- STUDY – Using the CAH time to first visit performance report we will measure the d/c to HV lag time from 2/8/15 – 2/22/15.
- ACT - HV lag time decreased from 10 days to 8 days. This PDSA cycle did not meet goal and is not scaled to program.

» But.. What did we learn?

Chrome File Edit View History Bookmarks Window People Help — 51% Mon 7:48 PM lori o'connor

Dashboard - First Visit perf

https://app.careathand.com/dashboards/first_visit

Time to First Visit Performance

Home | SNF | Acute Rehab | Assisted Living Facility | Weekend discharges

# of weekend discharges: 0, 5, 10, 15, 20, 25, 30, 34

Days until first visit: 1, 5, 10, 15, 20, 25, 26

Discharge date: 12/28, 1/4, 1/11, 1/18, 1/25, 2/1, 2/8, 2/15, 2/22, 3/1, 3/8, 3/15, 3/22, 3/29

PDSA 1

Frequency: Weekly

Due date from: 12/30/2014

Due date to: 03/30/2015

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Changelog Feedback

What did we learn from PDSA 1?

Increasing per diem hours did decrease HV lag but did not make enough of an impact to meet goal.

PDSA 2

- PLAN – (hypothesis) if we keep the expanded weekend hours but add 3 nights a week that nurses and coaches can do per diem visits will it decrease our lag time to within 48 hours of d/c?
- DO – RN to cover CAH 3 week nights until 8 pm to allow coaches to do up to 3 visits per diem after workday complete.
- STUDY – Using CAH time to first visit performance report we will measure the d/c to HV lag time from 3/1/15 – 3/15/15.
- ACT – HV lag time decreased from 8 days to <2. This PDSA met our goal and is scaled to our program. Extended per diem hours are now permanent.

Chrome File Edit View History Bookmarks Window People Help 51% Mon 7:48 PM lori o'connor

Dashboard - First Visit perf

https://app.careathand.com/dashboards/first_visit

Time to First Visit Performance

Home SNF Acute Rehab Assisted Living Facility Weekend discharges

PDSA 1

PDSA 2

# of weekend discharges

34 30 25 20 15 10 5 0

Days until first visit

26 25 20 15 10 5 1

12/28 1/4 1/11 1/18 1/25 2/1 2/8 2/15 2/22 3/1 3/8 3/15 3/22 3/29

Discharge date

Frequency: Weekly

Due date from: 12/30/2014

Due date to: 03/30/2015

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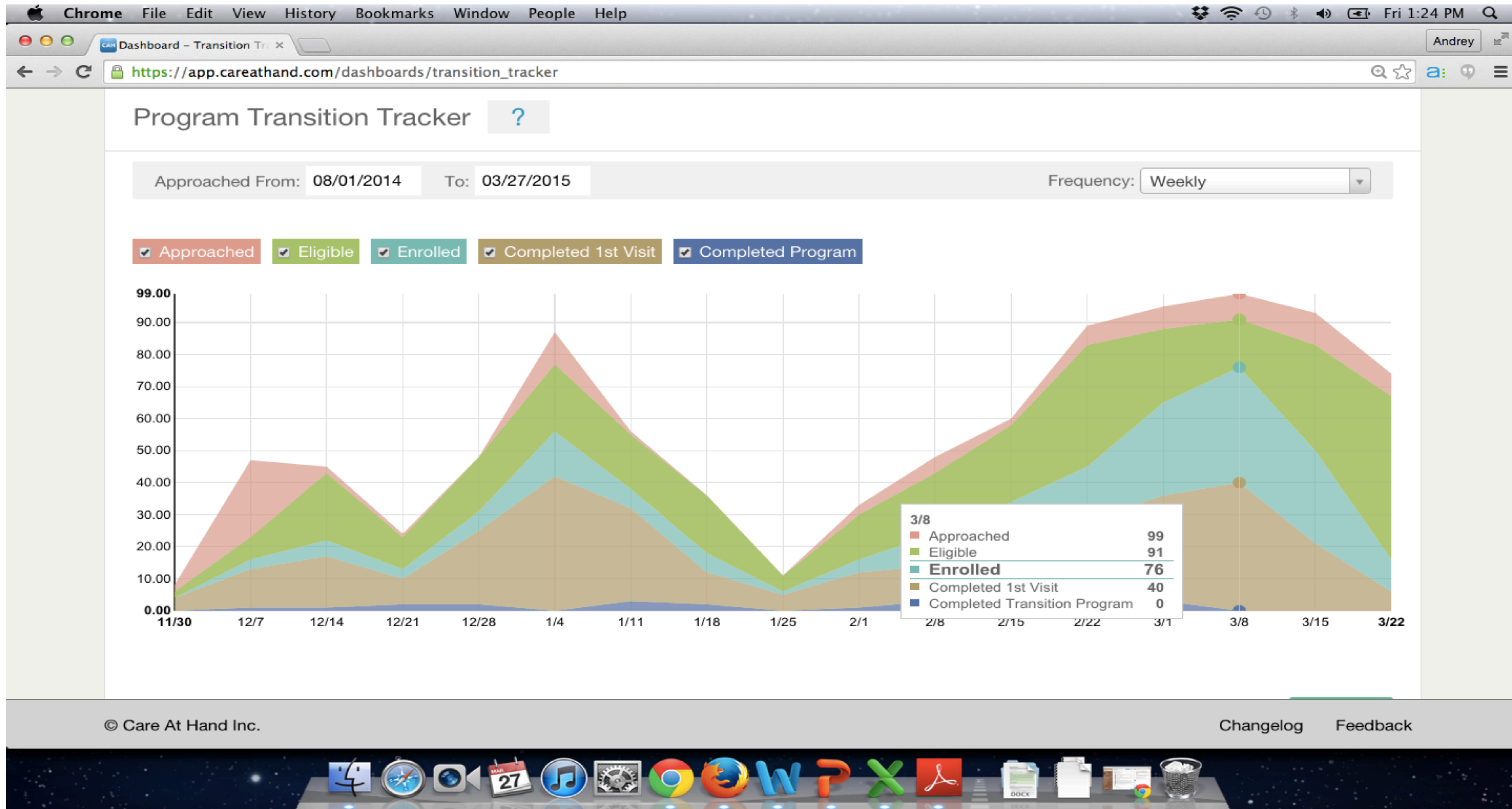
Changelog Feedback

PDSA: ALTCEW Care Transitions

Plan	Pilot Care at Hand technology at Sacred Heart Hospital
Do	Coaches conducted discharge surveys to stratify patients into mild, moderate, and high risk
Study	Consistent way of assessing risk; having a risk score has allowed coaches to get into the home more easily
Act	Program-wide roll out!

PDSAs captured within App



Aim Statement

Help AAA | increase revenue for health homes program | by 30% ($7k) | by increasing productivity of care coordinators | using more effective triage | within 6 weeks

Help AAA | secure contract | w/ at least 1 hospital | for providing care transitions services | cheaper than hospital-grown program | within 3 months

Help AAA | secure contract | w/ at least 1 MCO | for providing care transitions services | cheaper than MCO-grown program | within 3 months

Help AAA | increase billable patient rate | by 50% | by providing care transitions services | more efficiently | within 6 weeks

Primary Drivers

Care coordinators don't bill enough for existing panel

Care coordinators panels are not large enough

Money wasted on admin FTE for inefficient administrative functions

Need to show impact of care transitions program

Inability to send and receive data electronically

Inefficient use of coaches

Inefficient data management

High refusal rate

Secondary Drivers

Manually enrolling newly referred patients for each provider using xls is wasteful

Time wasted finding forms & info about each client

Filling in & filing paper forms from field wastes time

No performance measures for program/tracking operational analytics/MCOs want analytics

Care coordinators get stuck doing care coordination b/c don't know when its safe to empower consumer to do own care coordination

No means of triage to escalate more time-intensive consumers

No data standards for communicating between LTSS providers and Payers

Coaches doing administrative work rather than enrolling

Same coaches doing hospital and field work

Inefficient enrollment process

Paper based/access-based data management

Opt-in process

Lack of counterstrategies

Change Strategies

CAH used as database management system to input referrals and manage patients

Onboard all new staff w/ Jeff and get nurse buy in w/ Lori

Send electronic forms/data from CAH into MCO case management systems via xls outputs

Capture forms in CAH

CAH dashboards (manual or auto) to capture operational performance

Care at Hand risk stratification of consumers to identify those needing higher level care coordination

Real time alerts facilitate patients that require more care coordination

Use Care at Hand as means of connecting LTSS data to local HIE so hospitals and/or payers can access data in HL7 format

Use Care at Hand to test use of FHIR as means of communicating with MCO case management systems

Use partial FTE of admin staff to do scheduling

Reinforce hospital vs field role for each hospital

Care at Hand on-boarding & risk assessment

Formally change language to opt-out process

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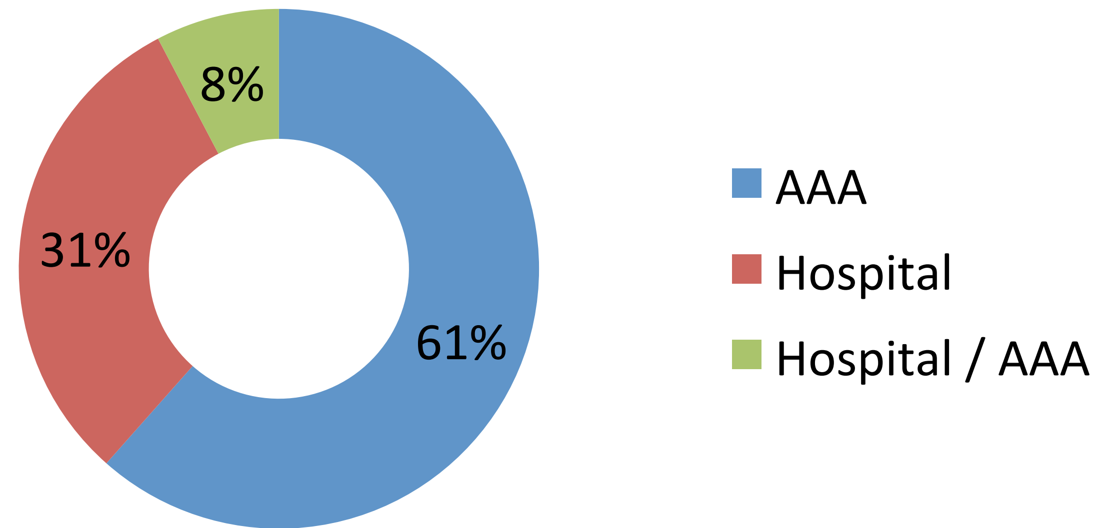
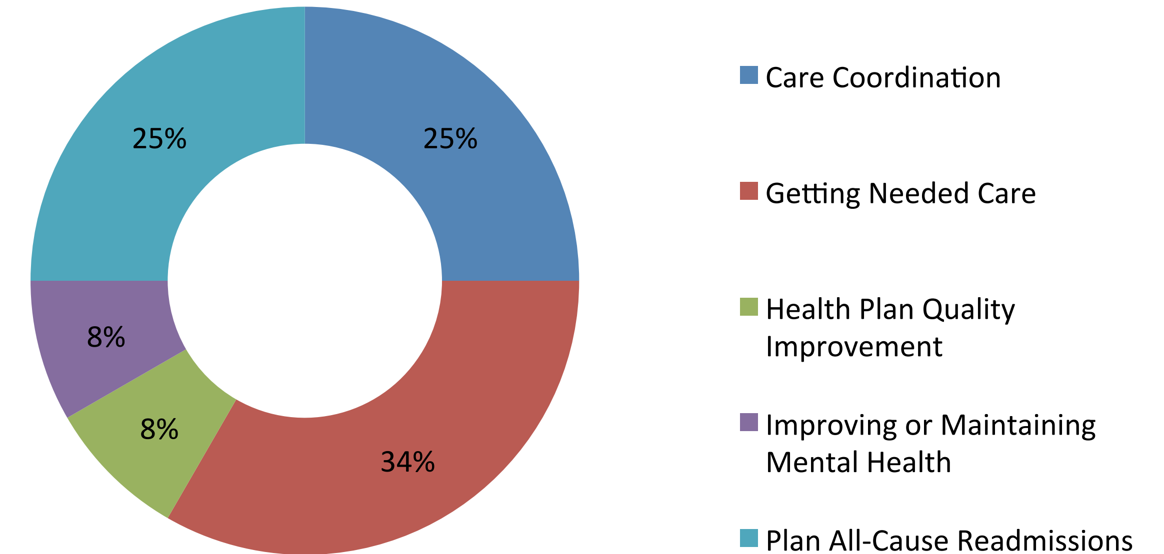
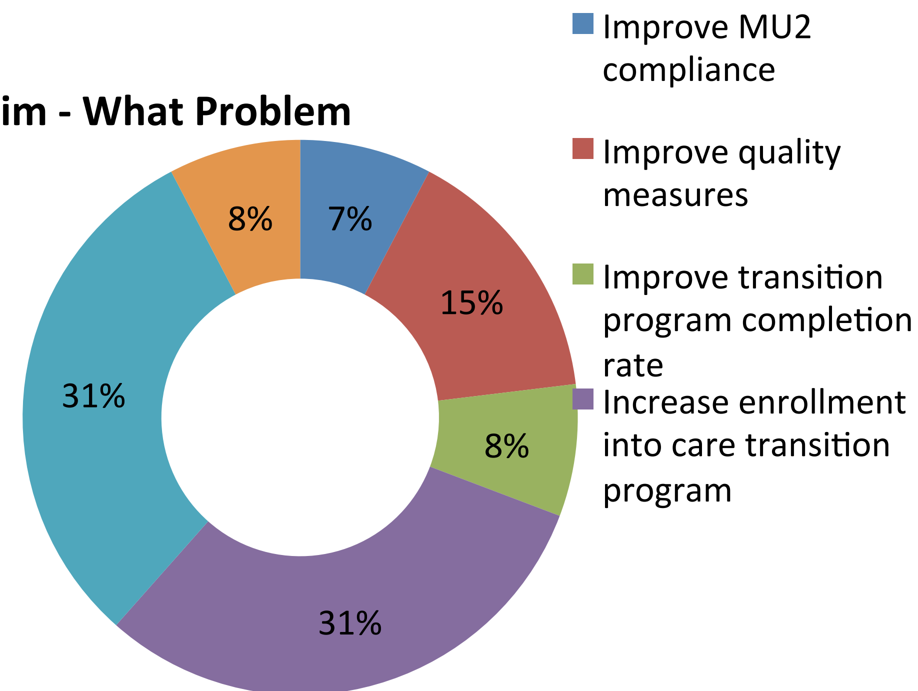
PDSAs captured within App

Analytics to measure QI performance – use this to close deals







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Its not about QI or readmissions…

…it's about the community and aging in place

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Thank you!

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Nurse-only models do not address all risks for readmission

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Impact of nurse transition coach

Intrinsic | Care Coordination Breakdown | Environmental

0% 10% 20% 30% 40% 50% 60% 70%

Nurse is transition coach

- Intrinsic: Medical or surgical condition (ie worsening CHF, SOB, etc)
- Intrinsic: Mental or behavioral problem (ie worsening depression, noncompliance)
- Intrinsic: Functional decline (ie needs help witih more ADLs, worsening frailty)
- Extrinsic: Care Coordination Deficit: Management of a specific condition
- Extrinsic: Care Coordination Deficit: Setting up PCP or specialist appointment
- Extrinsic: Care Coordination Deficit: Skilled home care/VNA assessment, referral, or service
- Extrinsic: Care Coordination Deficit: Medications ordered and filled
- Extrinsic: Care Coordination Deficit: Coordination issue remained unresolved (Loop not
- Extrinsic: Care Coordination Deficit: Ongoing Medication Management in the home (filling
- Extrinsic: Care Coordination Deficit: Non-skilled home care assessment, referral, or service
- Extrinsic: Care Coordination Deficit: Inadequate family or community support to help with
- Extrinsic: Care Coordination Deficit: Medication Reconciliation
- Extrinsic: Care Coordination Deficit: DME ordered and filled
- Extrinsic: Environmental: Financial insecurity (can't afford basic necessities)
- Extrinsic: Environmental: Housing quality (Bug or rodent Infestations, elevator out, no heat,
- Extrinsic: Care Coordination Deficit: Patient or family Education/health literacy
- Extrinsic: Environmental: Violence/abuse
- Extrinsic: Environmental: Food insecurity (lack of access to high quality nutrition)
- Extrinsic: Care Coordination Deficit: Home safety assessment
- Extrinsic: Environmental: Transportation (can't get to appts, etc)
- Extrinsic: Environmental: Legal
- Extrinsic: Environmental: Housing insecurity (risk of homelessness)
- Extrinsic: Care Coordination Deficit: Other home and community services based assessment,
- Extrinsic: Care Coordination Deficit: Behavioral health assessment, referral, or service

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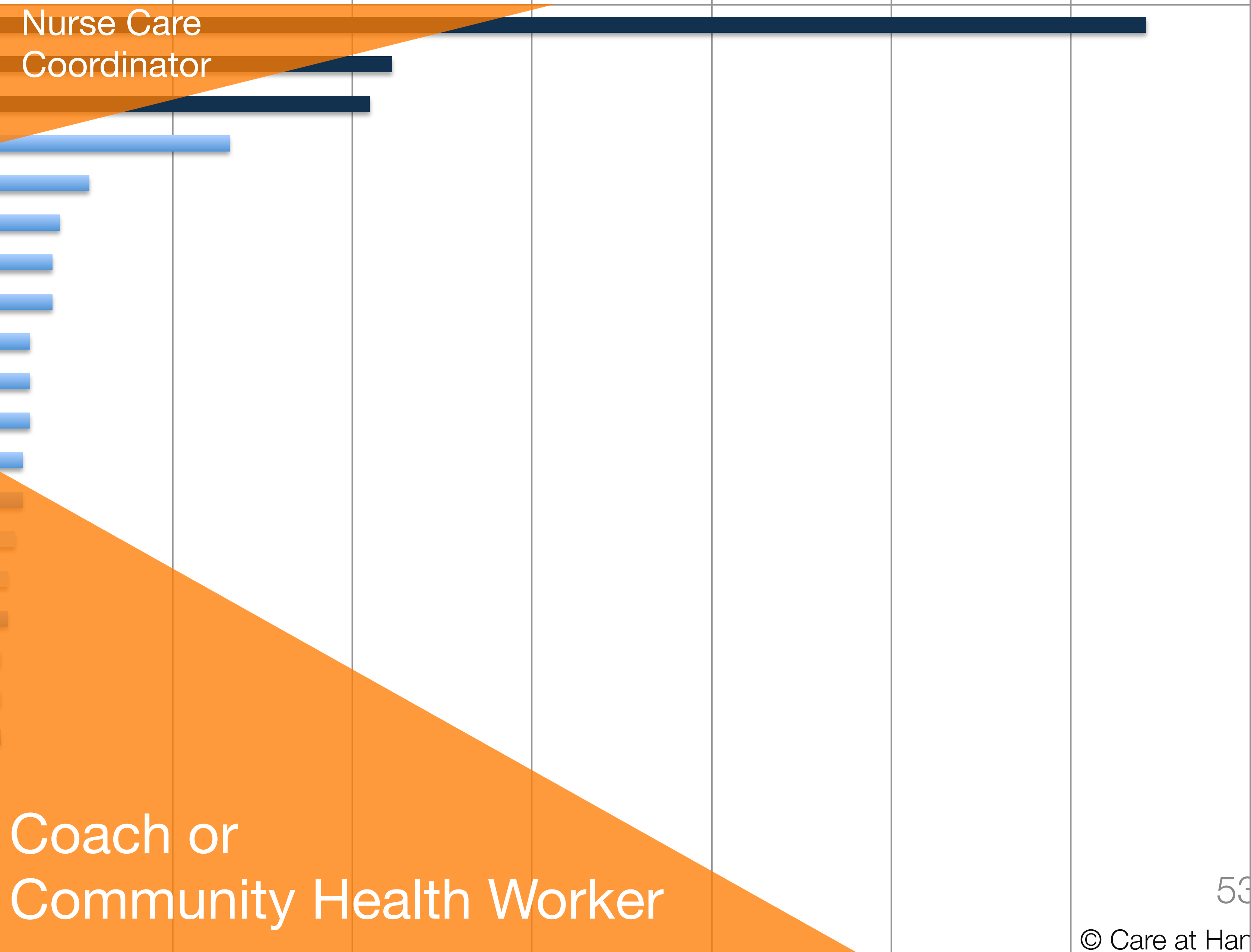
Gap remains even when nurse and coach roles are separate



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Nurse oversight over community health workers necessary to tap full potential of “mHealth Transitions Model”

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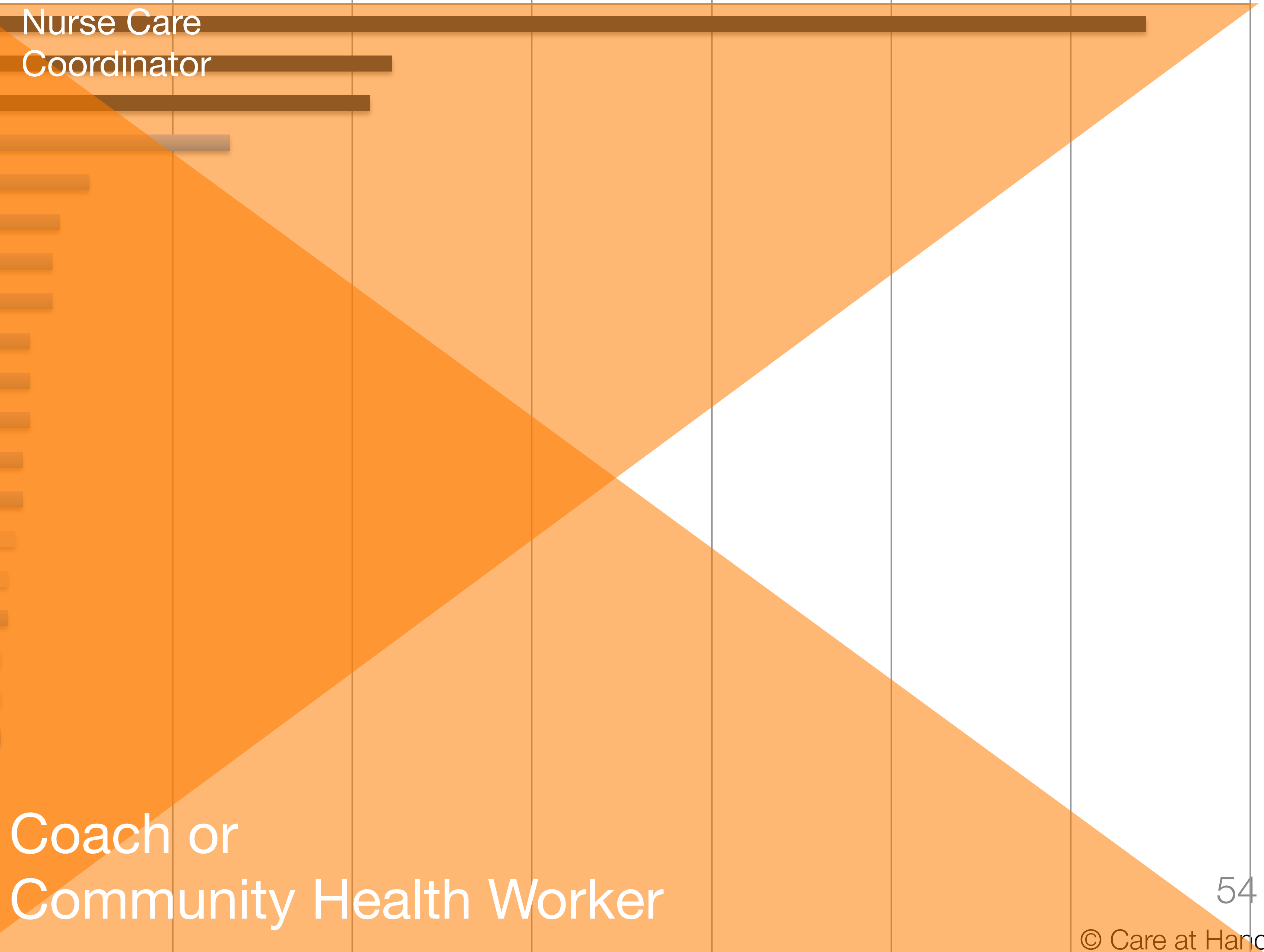

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