

Randomized controlled evaluation of an Intensive Management Patient Aligned Care Team for high-need, high-cost Veterans Affairs patients



HERC Cyberseminar
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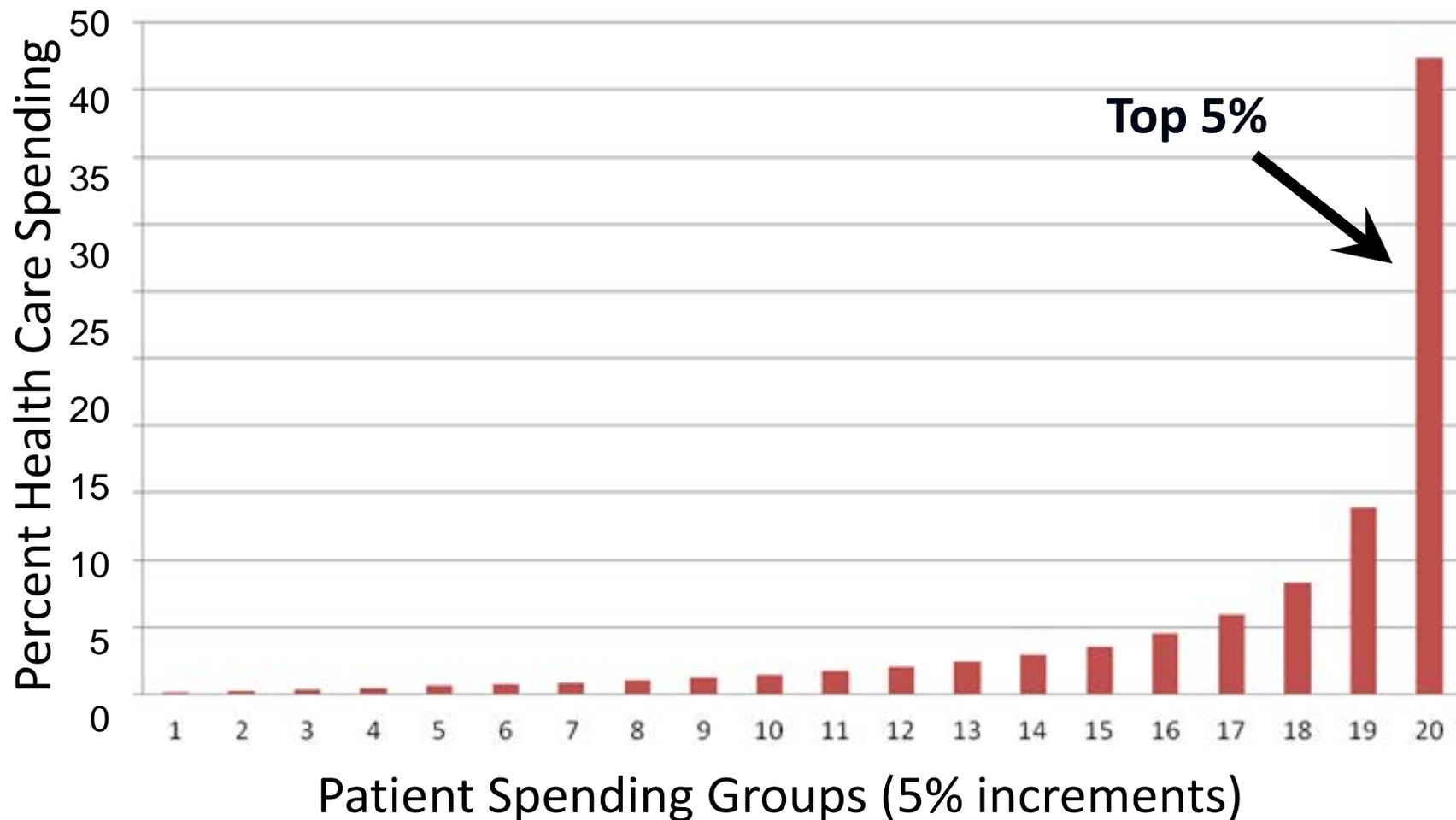
Poll

What is your primary reason for joining today's discussion?

- A. I would like to develop a clinical program for high-risk VA patients
- B. I am interested in studying interventions for high-risk VA patients
- C. I am in a leadership position and I want to learn about effective interventions for high-risk VA patients
- D. I just find the topic interesting



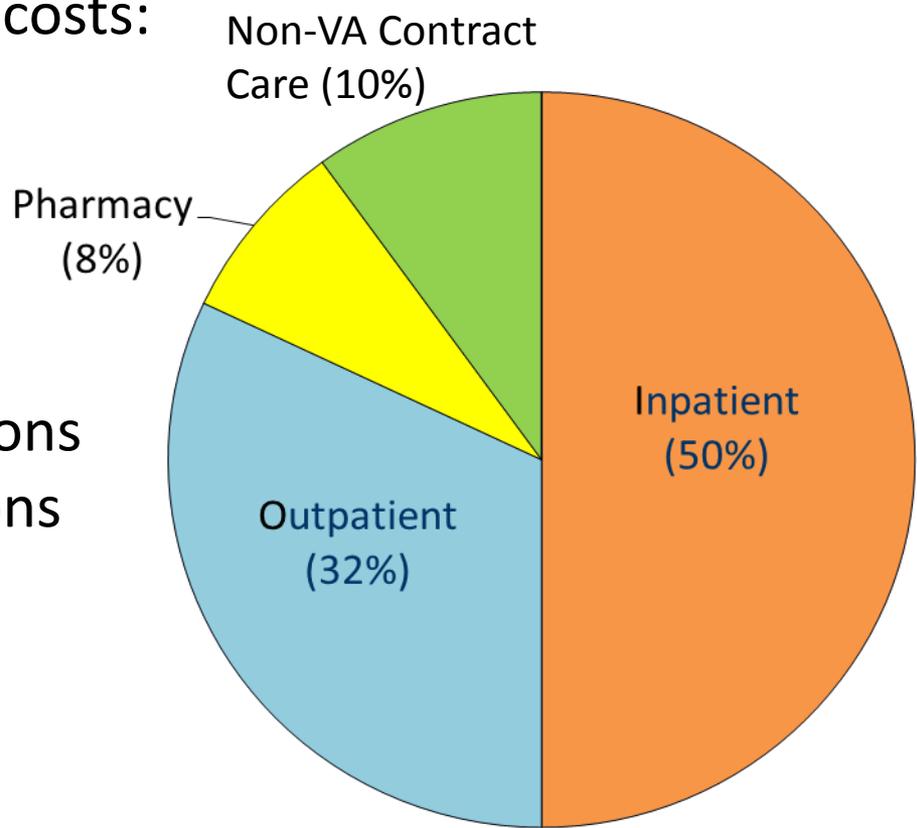
VA Health Care Cost Distribution, FY 2010





VA's Top 5% (N = 261,699), FY 2010

- Total Cost, mean (SD) = \$73K (\$64K); median = \$53K
- Aggregate distribution of costs:



- 50% had 1-2 hospitalizations
- 16% had 3+ hospitalizations
- 37% have 1-2 ER visits
- 29% have 3+ ER visits



VA's Top 5%: Characteristics

	Top 5% (n = 261,700) %	Remaining 95% (n = 4,972,294) %
Age		
<45	7	14
45-64	52	41
65+	41	45
Male	95	93
Insurance		
None	46	41
Major medical, HMO, PPO, Champus, Indemnity	8	18
Medicare/Medicare suppl	44	39
Other	2	2
Died in FY2010	11	2
Homeless	14	2
Married	43	58



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VA's Top 5%: Chronic Conditions

	Top 5% (n = 261,700)	Remaining 95% (n = 4,972,294)
	%	%
Hypertension	65	35
Diabetes	34	18
Ischemic Heart Disease	28	8
Cancer	25	5
Low Back Pain	21	10
Arthritis	19	8
COPD	14	4
Chronic Renal Failure	14	2
Heart Failure	10	1
Mental Health Conditions		
Any Mental Health Condition	47	18
Depression	22	10
PTSD	13	6
Alcohol Dep/Abuse	12	3
Drug Dep/Abuse	10	2
Schizophrenia	5	1



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VA's Top 5%: Multimorbidity

	Top 5% (n = 261,700) %	Remaining 95% (n = 4,972,294) %
Multiple Chronic Conditions		
≥ 3 conditions	76	26
≥ 5 conditions	42	7
Multi-System Multimorbidity		
≥ 3 systems affected	65	19
≥ 5 systems affected	19	2



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Characteristics of High-Cost VA Patients

- Frequent hospitalizations and ER visits
- High volume outpatient primary and specialty care
- High rates of multimorbidity (76% have 3+ conditions)
- Mental health conditions (47%)
- High rates of homelessness (14%)
- Insufficient social support



VA
**HEALTH
CARE**

Defining
EXCELLENCE
in the 21st Century



How do we build on existing VA primary care to meet the needs of highly complex patients?



Poll

Are you familiar with the structure of PACT teams?

- A. Yes
- B. No



Other Team Members

Clinical Pharmacy
Social Work
Nutrition
Case Managers
Behavioral Health

Teamlet (1 team per ~ 1200 patients)

Provider (MD or NP)
Care Manager (RN)
Clinical Assoc (LPN, MA)
Clerk

Patient

and
caregivers



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How do we build on existing VA primary care to meet the needs of highly complex patients?



***Intensive management* PACT**



Intensive Primary Care

THE NEW YORKER
MEDICAL REPORT
THE HOT SPOTTERS



- Exceptional, individualized care
- Frequent in-person contact
- Intensive disease management
- Support during transition from hospital to home
- Access to key community resources

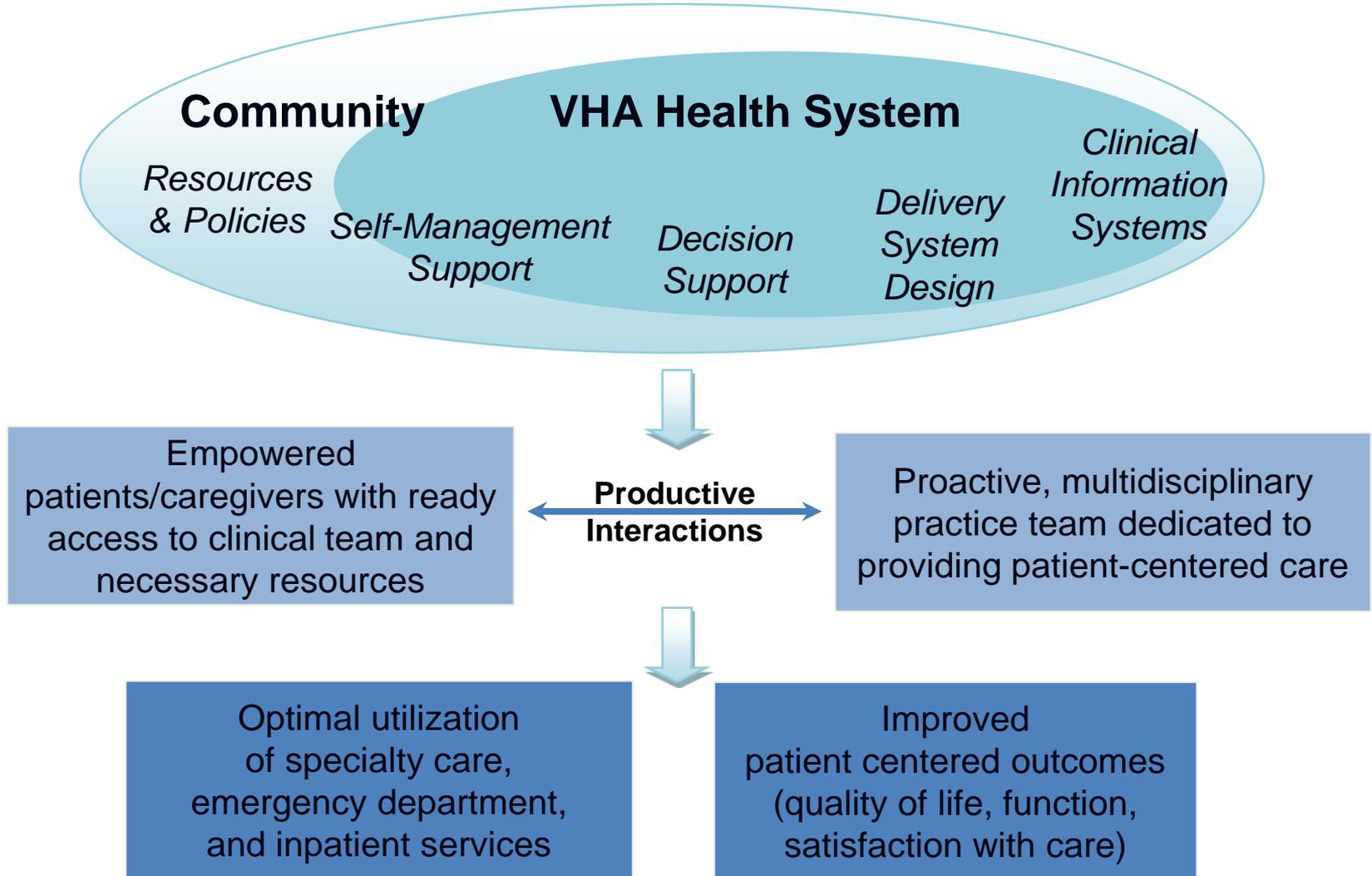


Intensive Primary Care





Framework for ImPACT



What challenges do VA's top 5% face?

“For someone who has many conditions, and a condition that could kill me at any time, I should be monitored all the time.”

“I never know when I am going to have to go to the ER.”

“I can't finish programs and I don't know why.”

“I wish someone would help me navigate the system. I don't know what resources or programs are available to me.”

Other Themes

- Continuity/Communication Challenges: Lack of provider continuity, lots of specialists, difficulties coordinating multiple providers
- Need for Social Support and Social Services
- Need for After-Hours Contact/Access (unstable health conditions, anxiety, isolation)

Core Elements of ImPACT

- Multidisciplinary Team: NP, MD, SW, Recreation Therapist, Clinical Coordinator
- Comprehensive intake; goal-concordant care
- Frequent in-person/phone contact
- After-hours access
- Chronic condition case management
- Coordination of primary and specialty care
- Rapid response to health status deterioration
- Support during transitions from hospital to home
- Access to social and community resources

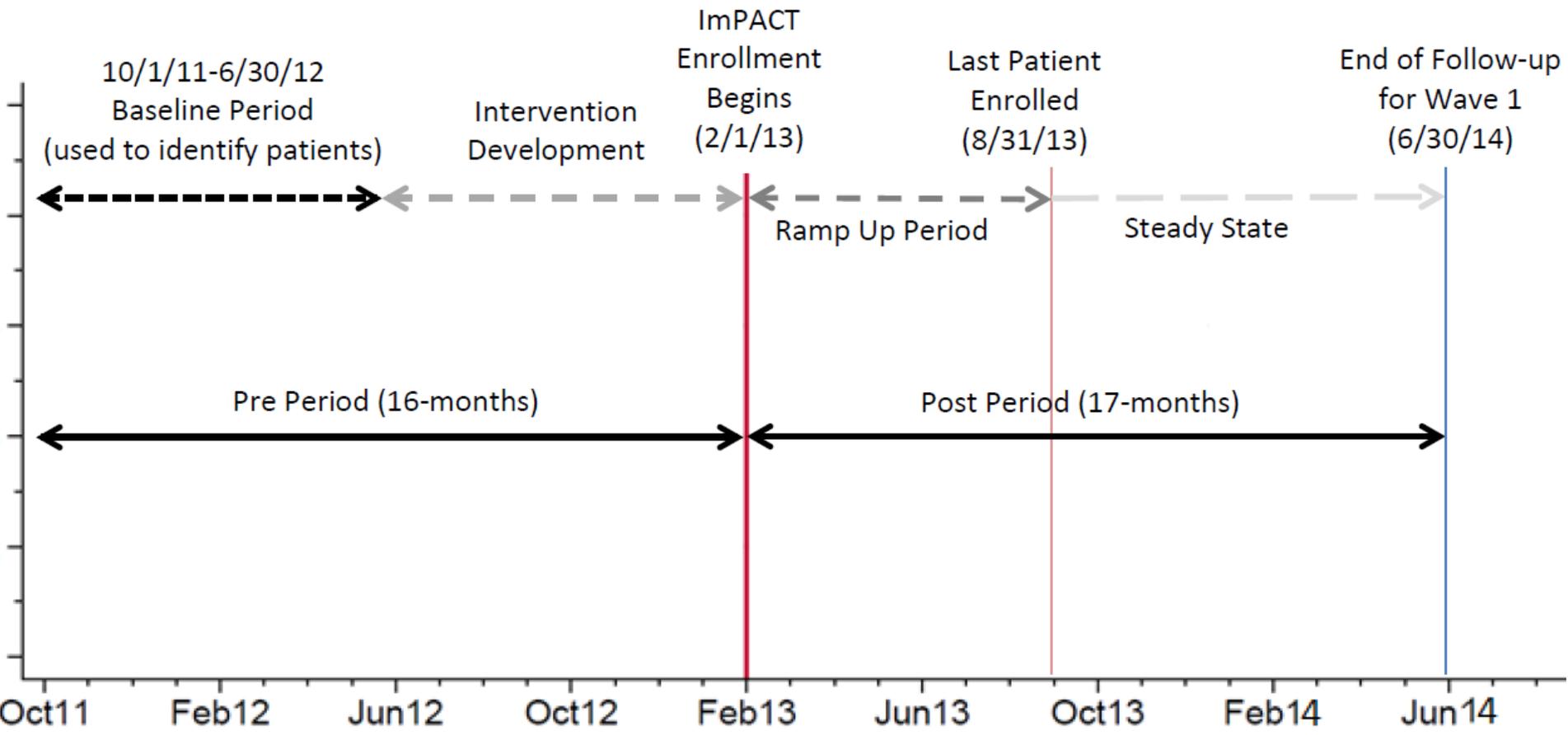


Study Design

- Hybrid Trial (Type 1)
 - Test clinical intervention while also gathering information about delivery and implementation (Curran *Med Care* 2012)
- Partnered Research
 - ImPACT implemented as QI pilot; offered to random sample of patients
 - ImPACT evaluated by HSR team using administrative data
- Comparison Groups
 - ImPACT (150 eligible patients randomly selected; 140 in final sample)
 - Usual Care (433 eligible patients receiving usual care; 405 in final sample)

Study Design

- Question
 - What effect did ImPACT have on health care costs and utilization?
- Primary Analysis
 - Intention- to-treat
 - Difference-in-differences
- Secondary Analysis
 - Treatment on the treated
 - Engagement (treatment) = completed intake + ≥ 3 additional encounters
 - Instrumental variables analysis
 - Randomization as instrument for engagement
- Stratified analyses for key characteristics
 - e.g., age, MH condition, HF/DM/COPD, recent hospitalization





5,341 VAPAHCS patients
(top 5% based on total costs or 1-year risk of hospitalization)

877 excluded*
406 died before 10/1/12
233 enrolled in Home-Based Primary Care
201 enrolled in Palliative Care
97 enrolled in MH Intensive Case Management
122 had length of stay > 50% year
*Patients may meet multiple exclusion criteria

4,464 patients meet ImPACT inclusion criteria

668 patients with one of 14 ImPACT-associated PACT providers

85 excluded
47 high-risk patients in lowest cost decile
38 high-cost patients with risk < 75th percentile

583 patients included in difference-in-differences analyses

150 assigned to ImPACT

433 assigned to Usual Care



	ImPACT (n=140)	Usual Care (n=405)	P-Value
	%	%	
Age, mean (SD)	66 (14)	66(13)	0.62
75+	24	24	
Male	93	90	0.33
Urban Location	89	92	0.27
Non-VA Insurance	53	55	0.62
Medicare/Med Advantage	49	51	
Major Medical	9	9	
Medicaid	3	2	
Homeless in 9 mo baseline	25	26	0.87
Chronic Conditions, mean (SD)	10 (4)	11 (3)	0.38
Med/Surg Hosp in 9 mo, mean (SD)	1.2 (1.4)	1.2 (1.4)	0.70
ED Visits in 9 mo, mean (SD)	3.4 (3.3)	3.3 (3.3)	0.70



	ImPACT (n=140)	Usual Care (n=405)	P-Value
	%	%	
Hypertension	71	71	0.94
Joint Disorders	57	59	0.78
Coronary Artery Disease	36	28	0.07
Diabetes Mellitus	34	38	0.40
Renal Failure or Nephropathy	29	25	0.40
Heart Failure	24	21	0.49
Cancer (solid/heme/melanoma)	21	28	0.11
Liver Disease/Hep C	21	26	0.24
Mental Health (Any)	68	69	0.78
Depression	49	48	0.93
Drug Use Disorders	29	25	0.34
PTSD	23	28	0.20
Schizophrenia	8	6	0.42
Alcohol Use Disorders	21	25	0.34

What Did We Learn?

- **Approximately 2/3rds of invited patients engaged in program**



	ImPACT (n=140)	Engaged (n=96)	Not-Engaged (n=44)	P-Value
	%	%	%	
Age, mean (SD)	66 (14)	68 (14)	62 (13)	0.01
75+	24	30	11	
Male	93			
Urban Location	89	94	80	0.04
Non-VA Insurance	53	59	39	0.02
Medicare/Med Advantage	49	56	34	
Major Medical	9			
Medicaid	3			
Homeless in 9 mo baseline	25			
Chronic Conditions, mean (SD)	10 (4)			
Med/Surg Hosp in 9 mo, mean (SD)	1.2 (1.4)			
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Liver Disease/Hep C	21	17	32	0.04
Mental Health (Any)	68			
Depression	49			
Drug Use Disorders	29	25	39	0.10
PTSD	23			
Schizophrenia	8	5	14	0.09
Alcohol Use Disorders	21	17	32	0.04

What Did We Learn?

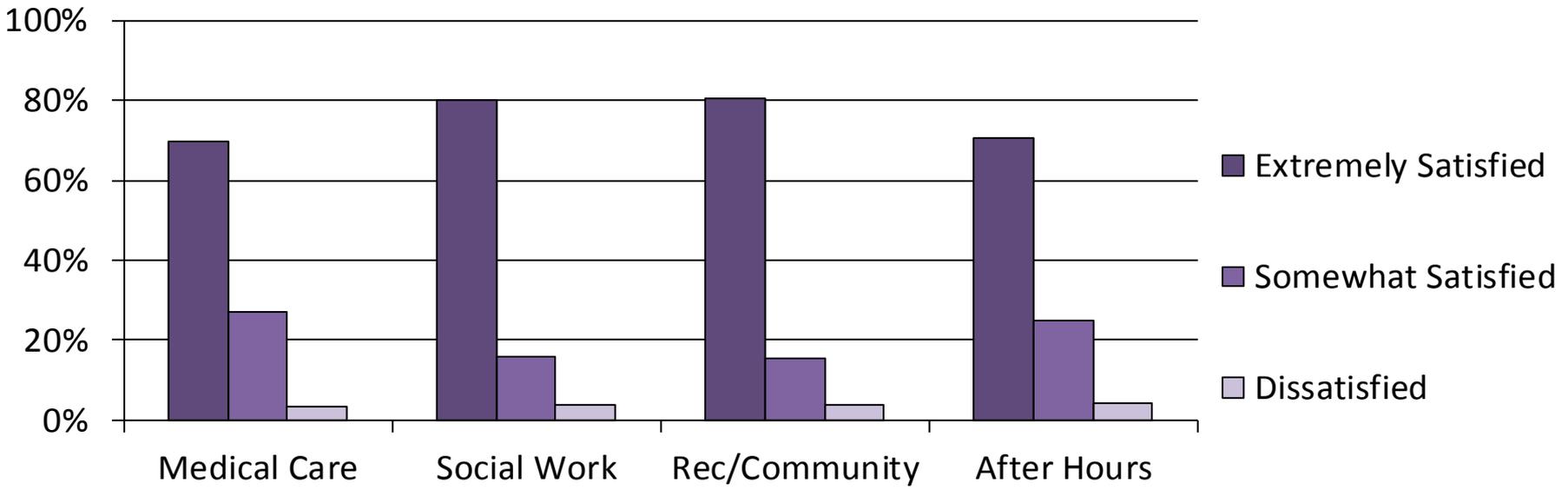
- Approximately 2/3rds of invited patients engaged in program
- **Among those who engaged, most felt it was extremely valuable**



Were patients satisfied with ImPACT?

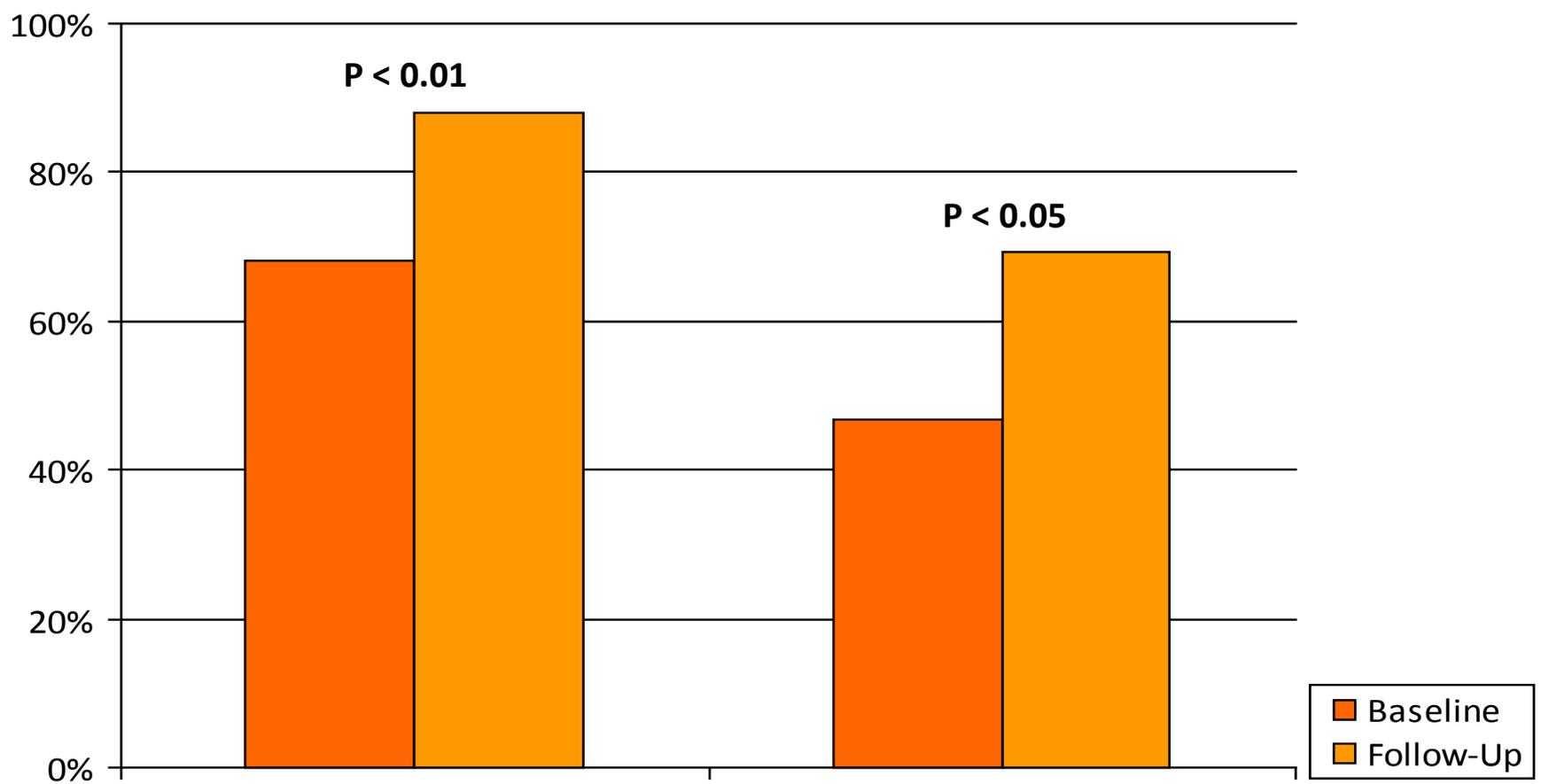
93% of ImPACT patients stated in a survey that they would recommend ImPACT to other patients

- *ImPACT program keeps track of me and my health, wellbeing, and medical care*
- *Knowing that someone has your back means a lot*
- *I don't have to go to the ER for minor things*
- *Having a liaison between myself, my doctor, hospital and pharmacy is so very crucial to me and ImPACT fits the bill! Not to sound like a TV Commercial but "One call does it all"*





Did ImPACT change patients' satisfaction with VA?



General Satisfaction
% of patients that agree that
"care at Palo Alto VA
is just about perfect"

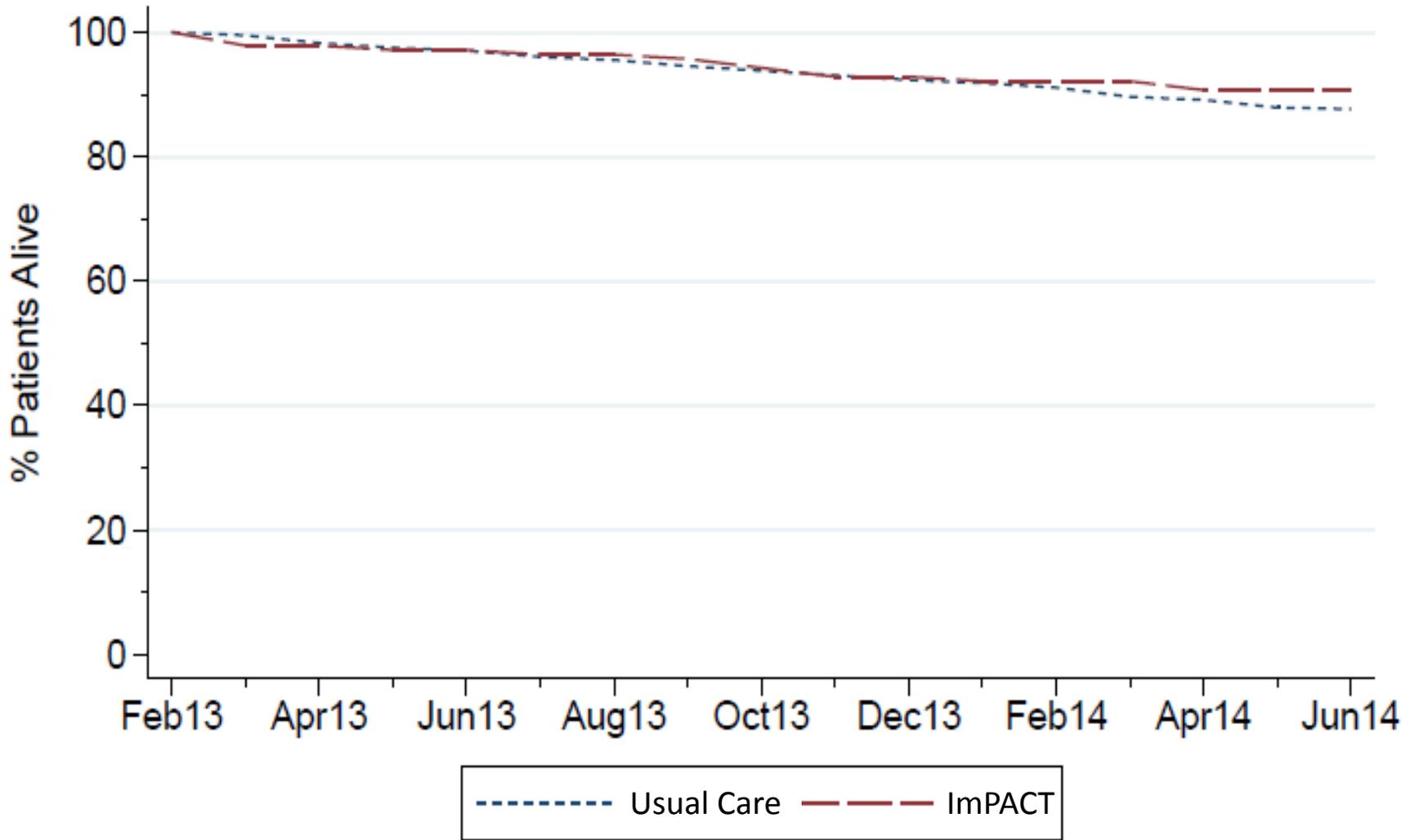
Communication Satisfaction
% of patients that disagree that
"doctors at Palo Alto VA
often ignore what I tell them"

What Did We Learn?

- Approximately 2/3rds of invited patients engaged in program
- Among those who engaged, most felt it was extremely valuable
- **There was no effect on mortality**



Mortality among ImPACT and Usual Care patients

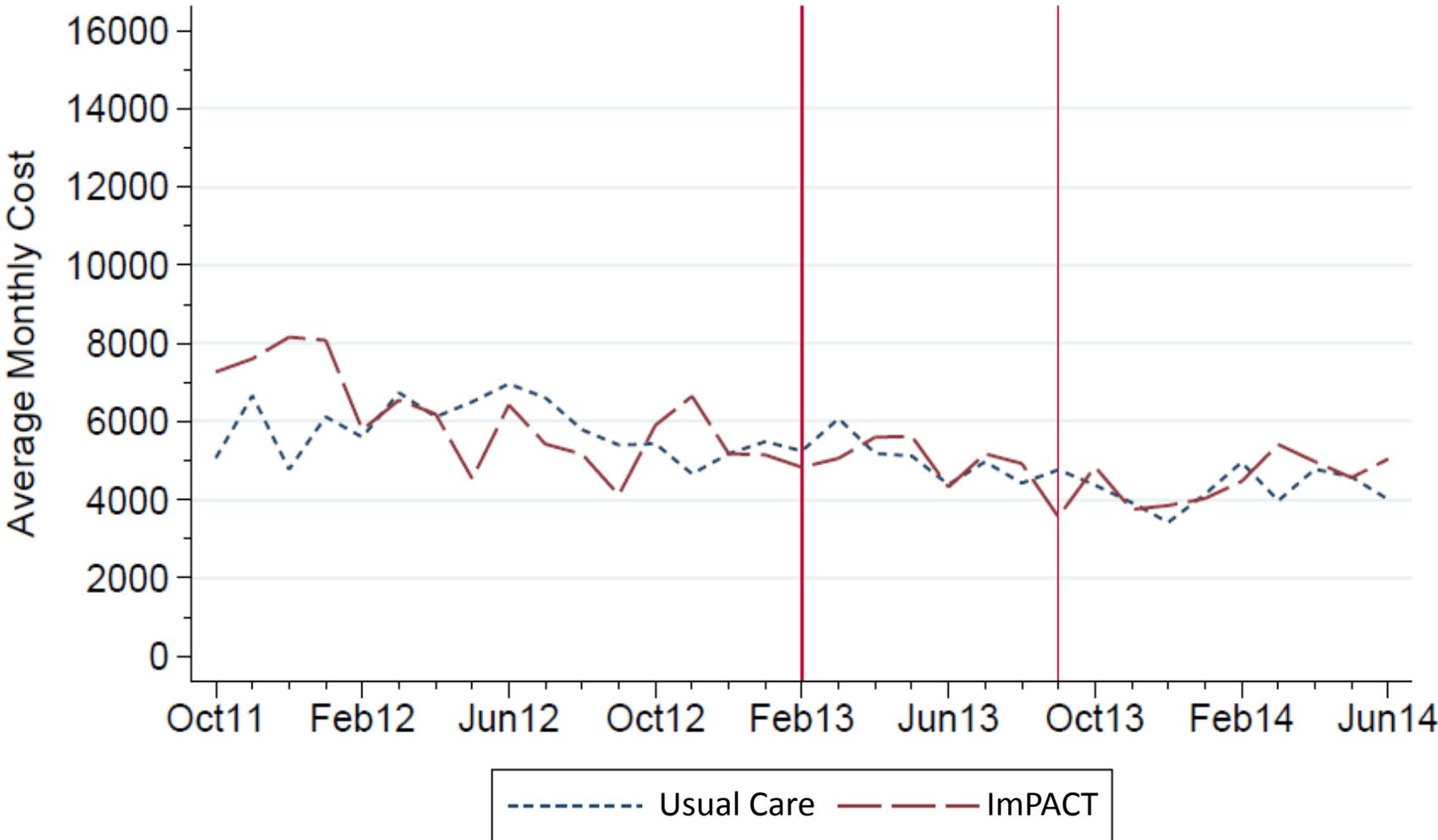


What Did We Learn?

- Approximately 2/3rds of invited patients engaged in program
- Among those who engaged, most felt it was extremely valuable
- There was no effect on mortality
- **The intervention was cost-neutral**

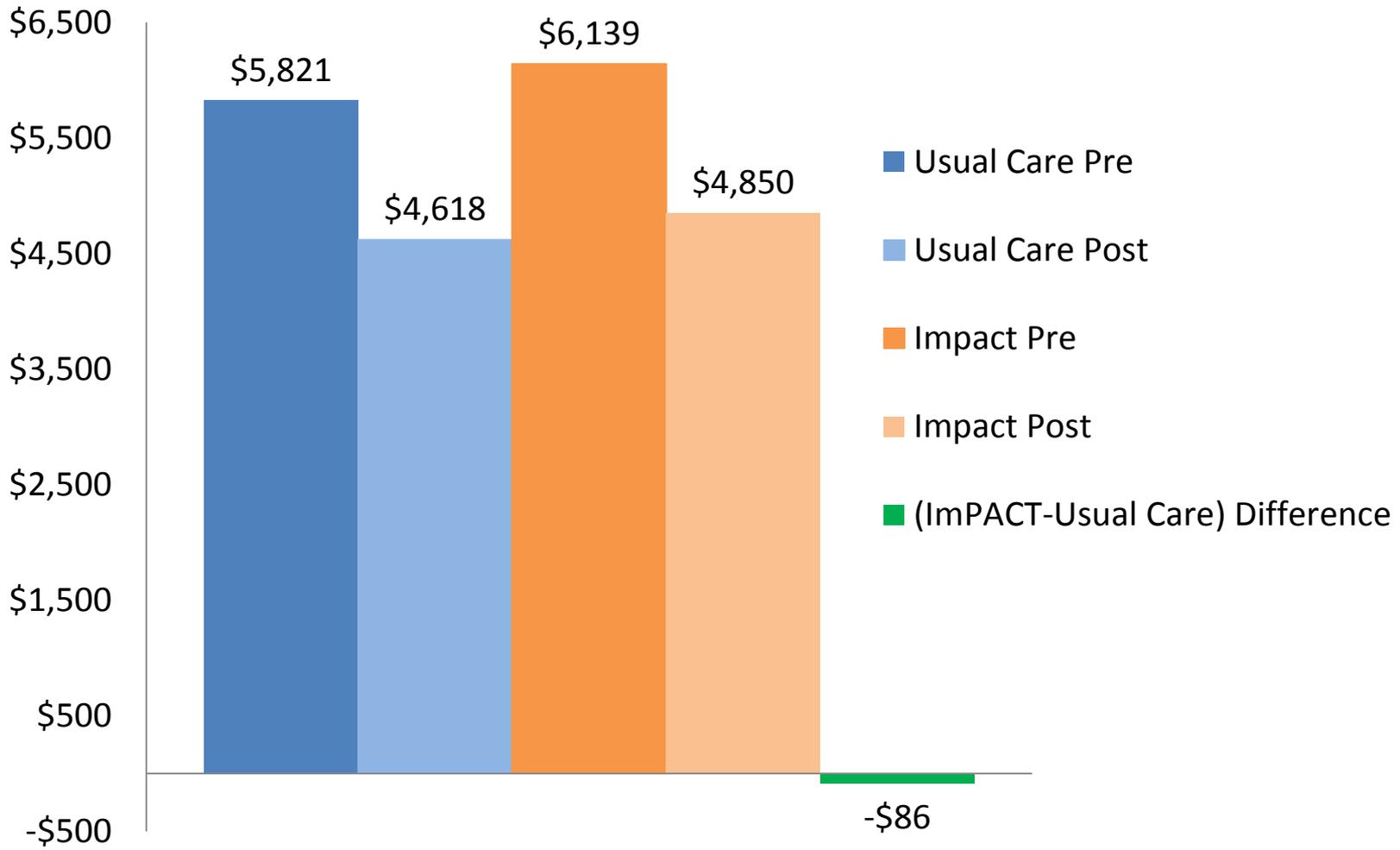


Average VA Palo Alto person-level monthly costs for ImPACT and Usual Care patients





Differences in pre-post total person-level raw costs for ImPACT vs. Usual Care patients



What Did We Learn?

- Approximately 2/3rds of invited patients engaged in program
- Among those who engaged, most felt it was extremely valuable
- There was no effect on mortality
- The intervention was cost-neutral
- **The intervention could potentially have an effect for certain subgroups of patients**



Adjusted differences in pre-post monthly costs for ImPACT and Usual Care patients

	Intention-to-Treat (DD)			Treatment on the Treated (IV)	
	n	Mean	SE	Mean	SE
All patients	545	-101	(614)	-134	(881)
Heart failure, diabetes, or COPD	306	-754	(763)	-1134	(1078)
MH condition	380	-40	(714)	-77	(1080)
No MH condition	165	-246	(1,184)	-244	(1,517)
Age < 65 yrs	276	-922	(998)	-1439	(1622)
Age ≥ 65 yrs	269	465	(762)	808	(1016)
High-cost (top 5%) at baseline	356	-5	(815)	96	(1216)
High-risk of hosp (top 5%) at baseline	402	4	(664)	-30	(945)
Hospitalized in 6 mo pre-enroll	197	-198	(1,315)	-236	(1,698)
High-risk of hosp (top 5%) at baseline & hospitalized in 6 mo pre-enroll	171	-657	(1,343)	-827	(1,760)

What Did We Learn?

- Approximately 2/3rds of invited patients engaged in program
- Among those who engaged, most felt it was extremely valuable
- There was no effect on mortality
- The intervention was cost-neutral
- The intervention could potentially have an effect for certain subgroups of patients
- **We learned a lot about implementation...**

Implementation Evaluation

- 15 semi-structured interviews with:
 - ImPACT Team (1 MD, 1 NP, 1 RT, 1 SW)
 - Facility Leadership (3 MDs)
 - Providers who interact with ImPACT:
 - PACT providers (3 MDs, 1 NP, 3 RNs), 1 hospitalist
- Consolidated Framework for Implementation Research (CFIR) used to develop interview questions
- Objectives:
 - Identify barriers/facilitators to implementation
 - Understand strengths, opportunities for improvement

Implementation Facilitators

- Proactive/creative approach of ImPACT staff
 - “More creative ideas to help, more heads to try to figure out what to do with these patients that keep coming back to the ER.” (Other provider)*
 - “[The ImPACT team] jumped in and I could ask them for support so it seemed like a resource” (Other provider)*
- Adaptability of ImPACT’s design
- Local environment/characteristics
 - Leadership engagement, culture of innovation, CPRS

Implementation Barriers

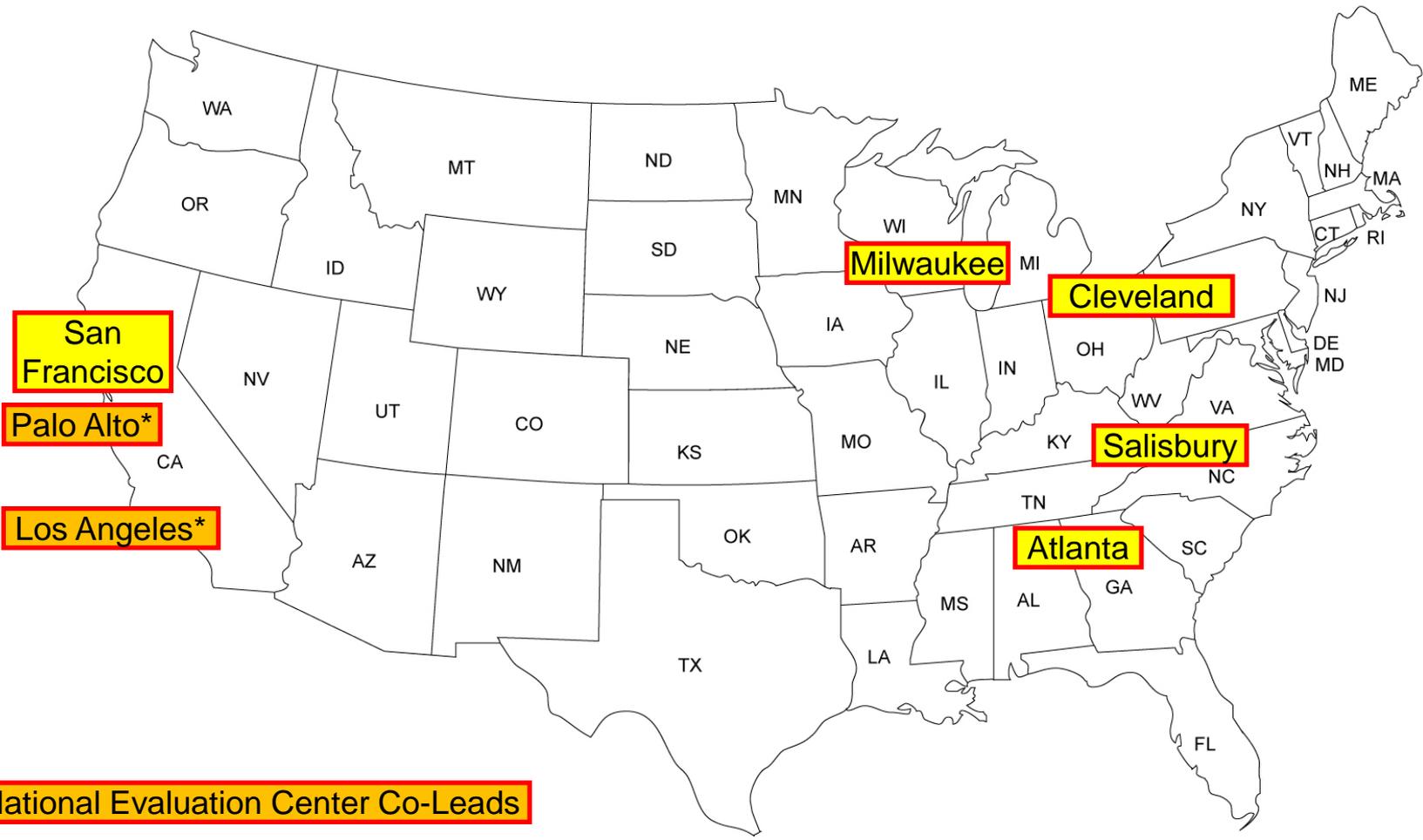
- **Complex patient population**
 - “ [ImPACT], at its core, is trying to address 100 or 200 patient's' individual needs and goals.” (ImPACT staff)
- **Challenges of addressing mental health**
 - MH services located at different site
 - No MH provider on team
- **Difficulty reaching rotating hospital staff**
- **Pressure of pilot intervention/evaluation**
 - “it is hard for a team to work under these conditions [when] what they're spending all their time on may disappear within a short time.” (ImPACT staff)

What Did We Learn?

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- Among those who engaged, most felt it was extremely valuable
- There was no effect on mortality
- The intervention was cost-neutral
- The intervention could potentially have an effect for certain subgroups of patients
- We learned a lot about implementation
- **Rigorous evaluation of health care delivery models is critical**
- **AND**
- **We still have a lot to learn, so...**



VA PACT-Intensive Management (PIM) Demonstration Project





PIM Sites

PIM Site	Distinguishing Elements	Team
San Francisco	Incorporates elements of GRACE (for frail older adults) & MHICM, includes home visits	SW, RN, psychiatrist
Milwaukee	Patients enrolled during hosp, emphasizes post-discharge care and patient goals	RN, clinical educator, psychologist
Cleveland	NP and military medics co-manage care, emphasizes reducing PACT provider burnout	NP, medics
Salisbury	PIM provider assumes care, emphasizes care coordination and patient engagement	PCP, SW, RN, psychologist, peer support
Atlanta	Incorporates home visits and telehealth, emphasizes patient activation	SW, NP

PIM Evaluation

- National Evaluation Center (Los Angeles/Palo Alto Collaboration)
- Study Design
 - Randomly selected participants vs. high-risk PACT patients in usual care
 - Across and within 5-site evaluation
 - Mixed-methods (administrative data, implementation evaluation)
- Outcomes
 - VA Utilization (hospitalizations, ED visits)
 - Non-VA Utilization
 - Mortality
 - VHA Costs
 - Patient-Centered Outcomes
 - Satisfaction, Access, Care coordination, Patient activation,



Thank You

VA High-Utilizer Analyses

Steve Asch
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Christine Ritchie
Jennifer Scott

ImPACT Evaluation Team

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