VIReC Partnered Research Cyberseminar Series

Comprehensive Support For Family Caregivers Of Post-9/11 Veterans: Impact On Veteran Health Care Utilization And Costs

Partnered Evaluation of VA Caregiver Support Program

Courtney H. Van Houtven, PhD
Valerie A. Smith, DrPH

Agenda

- Describe the creation of the VA Caregiver Support Program
- Describe VA Caregiver Support Program Partnered Evaluation
  - Motivation for Evaluation
  - Methods
  - Results
  - Conclusions
- Discuss the use of data sources and accompanying challenges
- Questions

Funding Sources

VA Caregiver Support Program

VA Quality Enhancement Research Initiative (QUERI)

Durham VA HSR&D Center of Innovation (COIN)

Poll Question #1: I am interested in VA data primarily due to my role as _____.

- Research investigator
- Data manager
- Project coordinator
- Program specialist or analyst
- Other (specify)

Poll Question #2: How much experience do you have on researching informal or family caregiving?

- New to the topic
- 1-3 years
- 3-5 years
- 5-10 years
- 10 + years

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Policies to support family caregivers have been modest

Prior to 2011
~$500 tax credits for lower income, full-time caregivers in a handful of states
National Family Caregiver Support Program has offered training in the past 15 years ($150 million annually)
Medicaid Home and Community-Based Waivers (1915c) in ~25 states allow beneficiaries to pay caregivers directly

In 2011, the most sweeping support for family caregivers ever in the U.S. was enacted, and that is the policy that we will examine today…

Caregivers and Veterans Omnibus Health Services Act

P.L. 111–163 was signed into law on May 5, 2010.

Title One –Sections 101-104 outlined specific new services to be provided for caregivers of Veterans.

1. Program of Comprehensive Assistance for Family Caregivers (PCAFC) of **eligible Veterans injured in the line of duty on or after 9/11/2001.**

2. Program of General Caregiver Support for caregivers of **all Veterans in need of a caregiver.**

VA Caregiver Support Program Office housed in Care Management and Social Work Services, Patient Care Services

Caregiver Support Program Activities

- Building Better Caregivers™
- Caregiver Support Line
- Self Care Classes
- Caregiver Support Coordinators
- Peer Mentoring Support
- Mental Health Services
- Respite Care
- Travel Reimbursement
- Caregiver web resources at www.caregiver.va.gov

All VA caregivers can use

Program of Comprehensive Assistance for Family Caregivers (PCAFC) Overview

- Clinical program, providing the following additional services directly to family caregivers of eligible Veterans injured in the line of duty on or after September 11, 2001:

Required Caregiving Training

Monthly Stipend

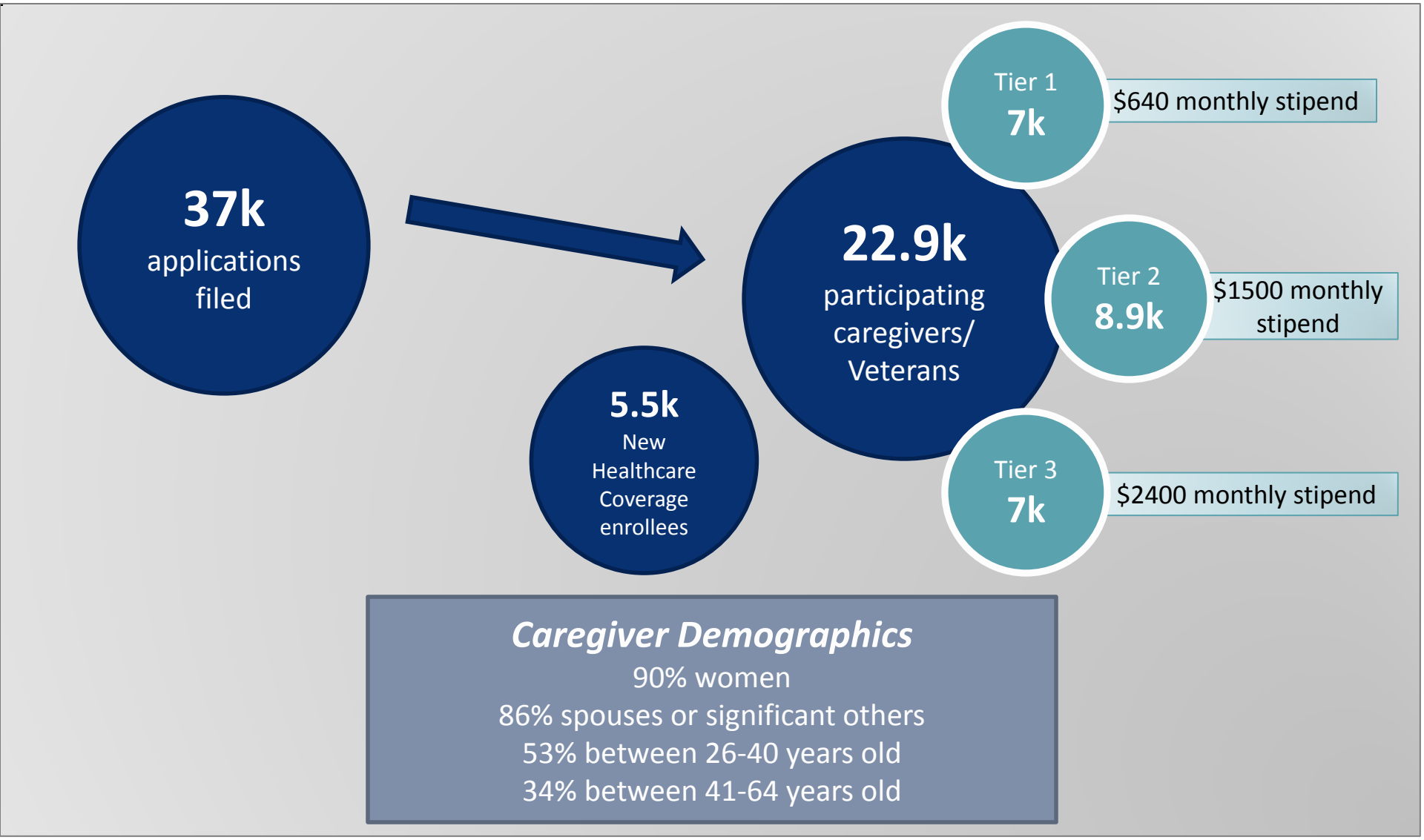
Health Insurance

Added Mental Health Services

Added Respite Care

- Program participation ***must***:
  - Be in the clinical best interest of the Veteran
  - Support the Veteran's progress in treatment

Current PCAFC Data



Caregiver Demographics

90% women

86% spouses or significant others

53% between 26-40 years old

34% between 41-64 years old

*Data current as of April 2016

Information Needed on Impacts

- What is short term return on investment?
  - $1 billion spent by May 2016

- CSP worked with VA Quality Enhancement Research Initiative (QUERI) to create a funding opportunity for a partnered evaluation center.
  - Competitive process and decision made in April 2014

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VA CAREgiver Support Program Partnered Evaluation (VA CARES)

June 1, 2014 - May 31, 2016

VA HSR&D Durham
Courtney Van Houtven
Susan Hastings
Eugene Oddone
Matthew Maciejewski
Nina Sperber
Maren Olsen
Darryl Wieland
Karen Steinhauser
Corrine Voils
Cristina Hendrix
Karen Stechuchak
Merritt Schnell
Jennifer Lindquist
Valerie Smith
Sara Andrews
Bradley Dokter
Lesa Powell
Katherine Ramos
Megan Shepherd-Banigan
Katherine Miller

Caregiver Support Program – VACO
Margaret Kabat
Margaret Campbell-Kotler
Jennifer Henius

Quality Enhancement Research Initiative
Amy Kilbourne
Linda McIvor

VA HSR&D PEC 14-272

Evaluation Objectives

To **evaluate short-term impacts** of The Caregiver Support Program on Veterans and caregivers and improve the Caregiver Support Program's ability to **refine and optimize services** while continuing to meet demands of the law

AIM 1: Does caregiver support impact **Veteran health care utilization**?

AIM 2: How does caregiver support affect **caregiver well-being**?

AIM 3: How do caregivers **use and value** components of The Caregiver Support Program?

AIM 4: What is the **value of services** offered?

AIM 1: Does PCAFC impact Veteran health care utilization and total health care costs?

How might PCAFC impact health care use?

Stipend	**May make it easier to accompany Veteran to appointments, gain better understanding of the treatment plan**
Training	**May enhance caregiver ability to navigate the VA** **May improve quality of caregiving at home**
Direct Counseling	**Caregiver Support Coordinators (CSCs) may help caregiver match Veteran with needed care**

Net impact on utilization?
Seek more or more timely outpatient care; avoid unnecessary ED visits

Net impact on Total VA Health Care Costs?
Unclear

Primary Outcomes

OUTCOME (6 MONTH INTERVALS TO 36 MO'S):	SETTING:
ACUTE CARE	
Hospitalization	VA/VA-purchased
Emergency Department Visits	VA/VA-purchased
OUTPATIENT CARE	
Mental Health Outpatient Care	VA/VA-purchased
Primary Care	VA
Specialty Care	VA
LONG-TERM SERVICES AND SUPPORTS (LTSS)	VA/VA-purchased
TOTAL HEALTHCARE COSTS	VA/VA-purchased

Data Sources

Caregiver application variables

- The Caregiver Application Tracker (CAT)
  - Application date, program determination, enrollment date, caregiver relationship to Veteran.

Explanatory variables

- Medical SAS ® files, including clinical information such as diagnosis codes.
- VA Vital status mini file – gender, date of birth, date of death.
- CDW tables - NOSOS scores, enrollment priority, outside insurance, race, ethnicity.
- Distance to VAMC at time of application - PSSG-VAST, SASHELP.ZIPCODE .
- Facility complexity score – scores based on VSSC guidelines.

Data Sources

Utilization

- Managerial Cost Accounting (MCA) System National Data Extracts Outpatient, Discharge, Treating Specialty, and Observation Treating Specialty SQL tables
- Medical SAS ® VA-purchased care files (Fee Basis).
- Medical SAS ® Inpatient and Outpatient files provided supplementary data.
  - E.g., secondary diagnoses, determining acute care vs. extended care inpatient visits

Total health care costs

- MCA (DSS) files and Fee Basis files.

Methods

Pre-post cohort design with a non-equivalent control group in order to understand how the program has affected those enrolled compared to similar Veterans not enrolled

Treatment Group

- Veterans whose caregivers were enrolled in PCAFC as of March 2014
- N=15,650 (2,056 w/ 3 yr. follow-up)

Control Group

- Veterans whose caregivers applied by March ‘14 but were never approved
- N=8,339 (325 w/ 3 yr. follow-up)

Methods – Addressing Non-Random Selection

Concern: Control and treatment groups may be inherently different at time of application

- Want to ensure estimated treatment effect is due to treatment and not baseline differences that already existed

Solution: Use propensity scores to construct "inverse probability of treatment weights"

- Propensity score = estimated probability of receiving treatment based on observed characteristics at time of application

Inverse Probability of Treatment Weights

- Apply weights to create a pseudo-population that is more comparable between the two groups
  - Obtain the **average effect of treatment** on those enrolled in PCAFC (ATT)
  - Why the ATT? Primary interest was in the policy perspective of the decision-maker.
    - Intention-to-treat perspective, purposely do not consider whether the dyad remained in the PCAFC, dropped out, or graduated.

- Evaluate performance of approach
  - Examination of pre-application date trends after weighting
  - Standardized differences

Baseline Covariates

Covariates		
Sociodemographics		**Health Care Utilization in 6 Months Prior**
Age	Means Test Status	Number of Mental Health Visits
Gender	Copayment Required	Number of VA Primary Care Clinic Stops
Marital Status	Copayment Not Required	
Race	Unknown	**Health Status Indicators**
Ethnicity	Enrollment Priority Group	Nosos Comorbidity Score
Homelessness	Group 1	Physical and Mental Health Comorbidities
Service Connection	Group 2-4	
High (≥70%)	Group 5-8	**Access to Health care**
Medium (50-69%)	Veteran Insurance Status	Miles to Closest VAMC
Medium Low (10-49%)	Insurance Outside of the VA	Complexity Level of Closest VAMC in FY 11
Low (<10%)	VA Only	VISN of Closest VAMC
Caregiver's Relationship to Veteran	Caregiver is a Veteran	

Characteristics of Sample

Baseline Characteristics	Unweighted Cohort		
	Control Group	Treatment Group	Std. Diff.
Female, %	10.9	7.6	**-11.5**
Age, mean (SD)	38.6 (10.3)	36.2 (8.9)	**-25.1**
Married, %	66.2	68.8	5.5
Race/Ethnicity, %			
White	58.5	69.2	**22.8**
Black	29.1	18.3	**-26.4**
Other	5.8	6.8	4.1
Unknown	6.6	5.7	-3.9
Hispanic/Latino(a)	10.0	13.6	**11.1**
Service connected, %			
High (≥70%)	64.0	72.3	**18.2**
Medium high (50-69%)	14.8	11.9	-8.7
Medium low (10-49%)	8.3	5.5	**-11.4**
Low (<10%)	12.9	10.3	-8.3
Enrollment priority group, %			
Group 1	79.8	85.1	**14.2**
Group 2-4	11.4	9.0	-8.0
Group 5-8 or missing	8.8	5.9	**-11.4**
# mental health visits prior 6 mo's mean (SD)	4.2 (8.4)	5.5 (9.5)	**14.6**
# VA primary care clinic stops prior 6 mo's, mean (SD)	1.3 (1.6)	1.6 (1.7)	**12.8**
Nosos score, mean (SD)	1.2 (1.7)	1.5 (2.0)	**13.1**

Most Common Physical Comorbidities

Baseline Characteristics, %	Unweighted Cohort		
	Control Group	Treatment Group	Std. Diff.
Musculoskeletal disorders/diseases	58.9	64.8	**12.3**
Pain, not including back or joint	39.8	47.7	**15.9**
Joint pain, not including back	35.7	39.9	8.7
Hyperlipidemia	28.0	28.1	0.3
Hypertension	26.3	24.4	-4.5
Traumatic brain injury	18.9	32.5	**30.7**

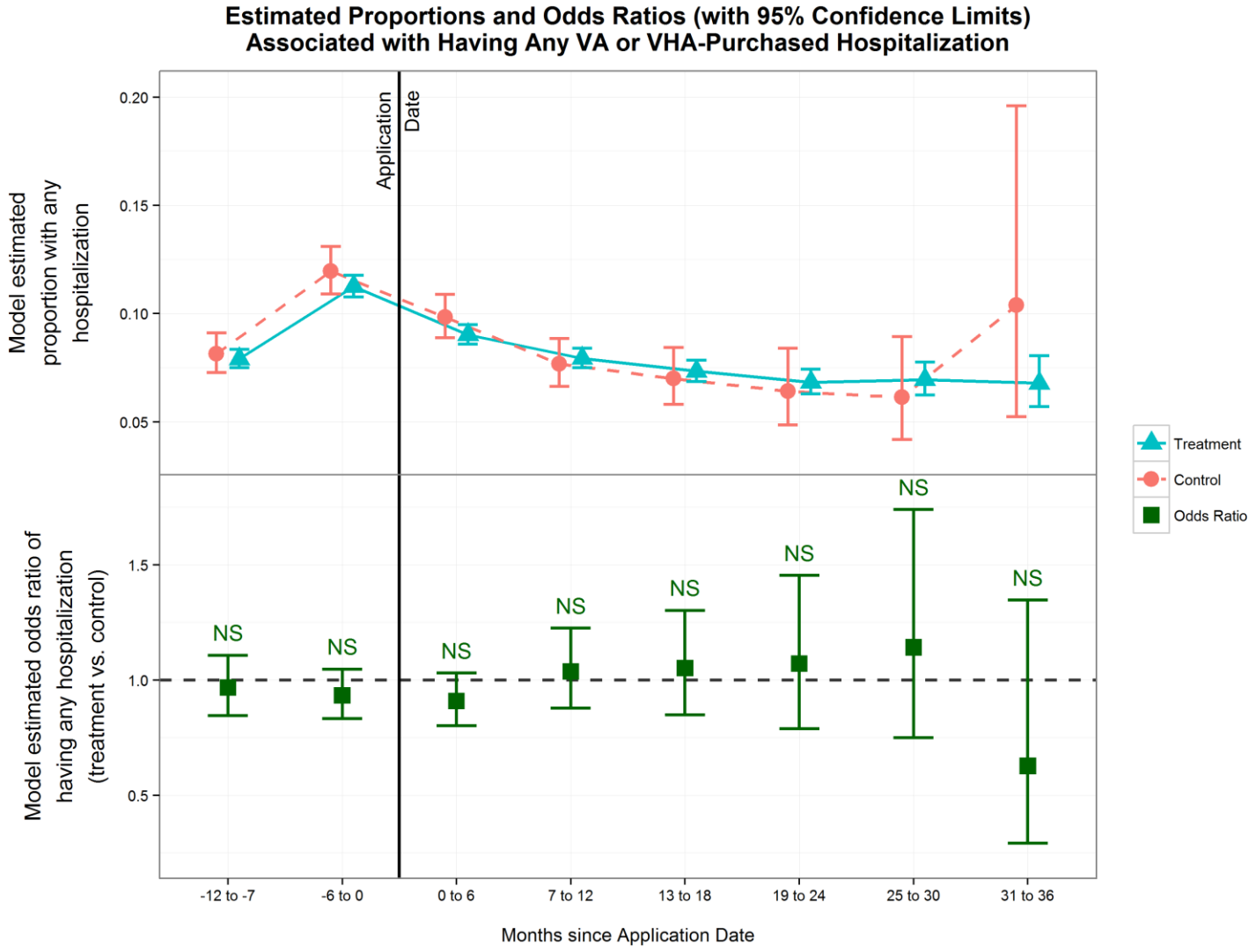
Most Common Mental Health Comorbidities

Baseline Characteristics, %	Unweighted Cohort		
	Control Group	Treatment Group	Std. Diff.
Post-Traumatic Stress Disorder	60.2	73.7	**29.4**
Depression	45.7	52.1	**12.7**
Anxiety	24.1	25.9	4.2
Tobacco use	19.7	22.9	7.7
Alcohol or substance abuse	19.2	20.9	4.2
Other mental health[9]	14.1	17.3	8.6
Adjustment reaction	9.8	10.2	1.3
Bipolar disorder	9.2	10.9	5.5

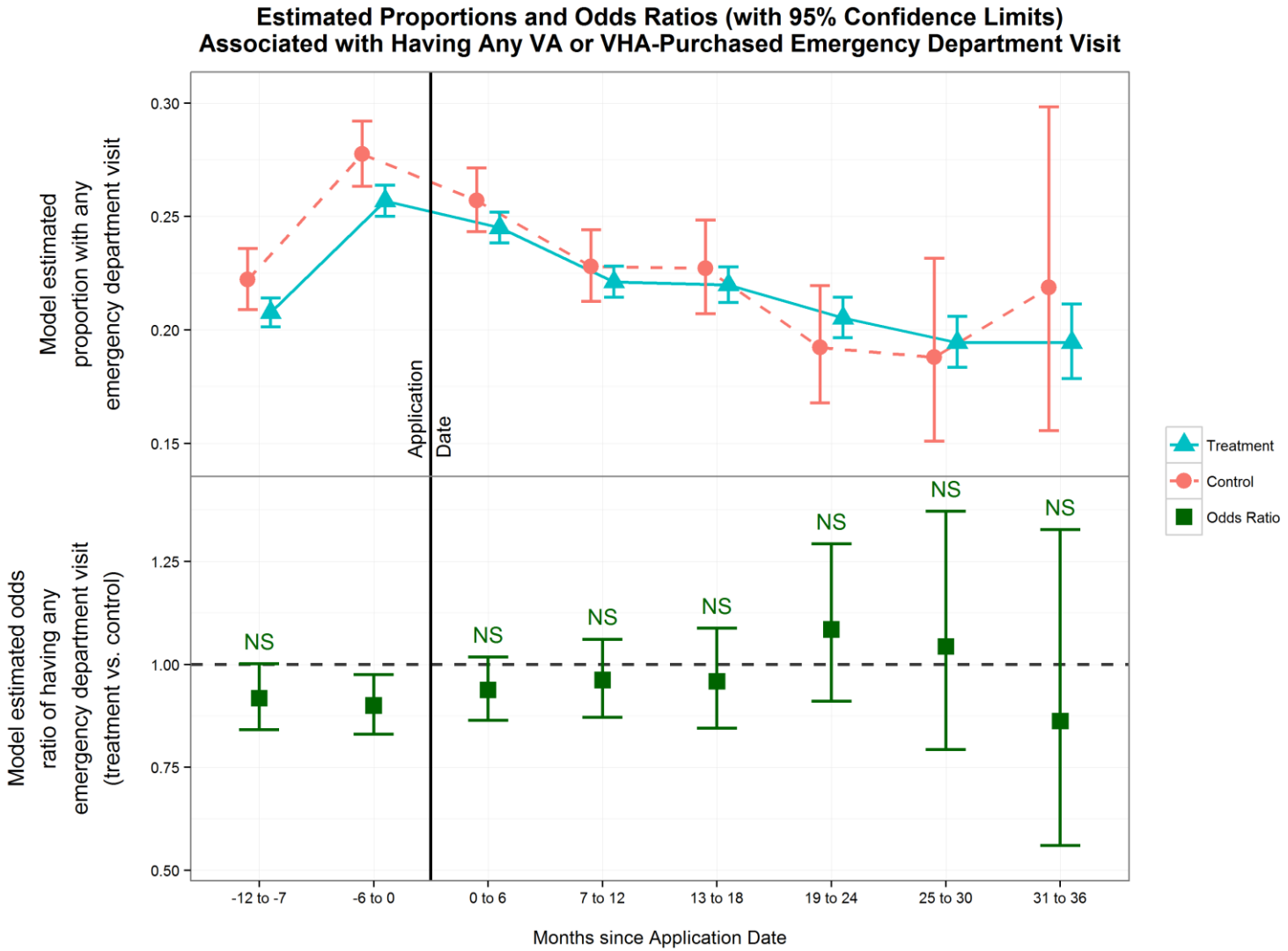
Table 1. Baseline Descriptive Characteristics of Unweighted and Weighted VA Caregiver Support Program Treatment Group and Control Group Veterans (%)

Baseline Characteristics	Unweighted Cohort			Inverse Probability of Treatment Weighted Cohort		
	Control Group	Treatment Group	Std. Diff.	Control Group	Treatment Group	Std. Diff.
Gender, %						
Female	10.9	7.6	**-11.5**	7.8	7.6	-0.7
Male	89.1	92.4	**11.5**	92.2	92.4	0.7
Age, mean (SD)	38.6 (10.3)	36.2 (8.9)	**-25.1**	35.8 (11.7)	36.2 (8.9)	3.6
Marital status, %						
Married	66.2	68.8	5.5	68.4	68.8	0.9
Never married/single/ widowed	17.0	18.1	3.0	18.4	18.1	-0.8
Divorced/separated	12.9	11.2	-5.4	11.5	11.2	-1.0
Unknown	3.9	1.9	**-12.3**	1.7	1.9	1.5
Race, %						
White	58.5	69.2	**22.8**	71.0	69.2	-3.8
Black	29.1	18.3	**-26.4**	17.1	18.3	3.0
Other	5.8	6.8	4.1	6.6	6.8	0.7
Unknown	6.6	5.7	-3.9	5.2	5.7	1.9
Ethnicity, %						
Not Hispanic/Latino(a)	86.0	83.0	-8.3	83.0	83.0	-0.1
Hispanic/Latino(a)	10.0	13.6	**11.1**	13.3	13.6	0.7
Unknown	4.0	3.5	-3.1	3.7	3.5	-1.2

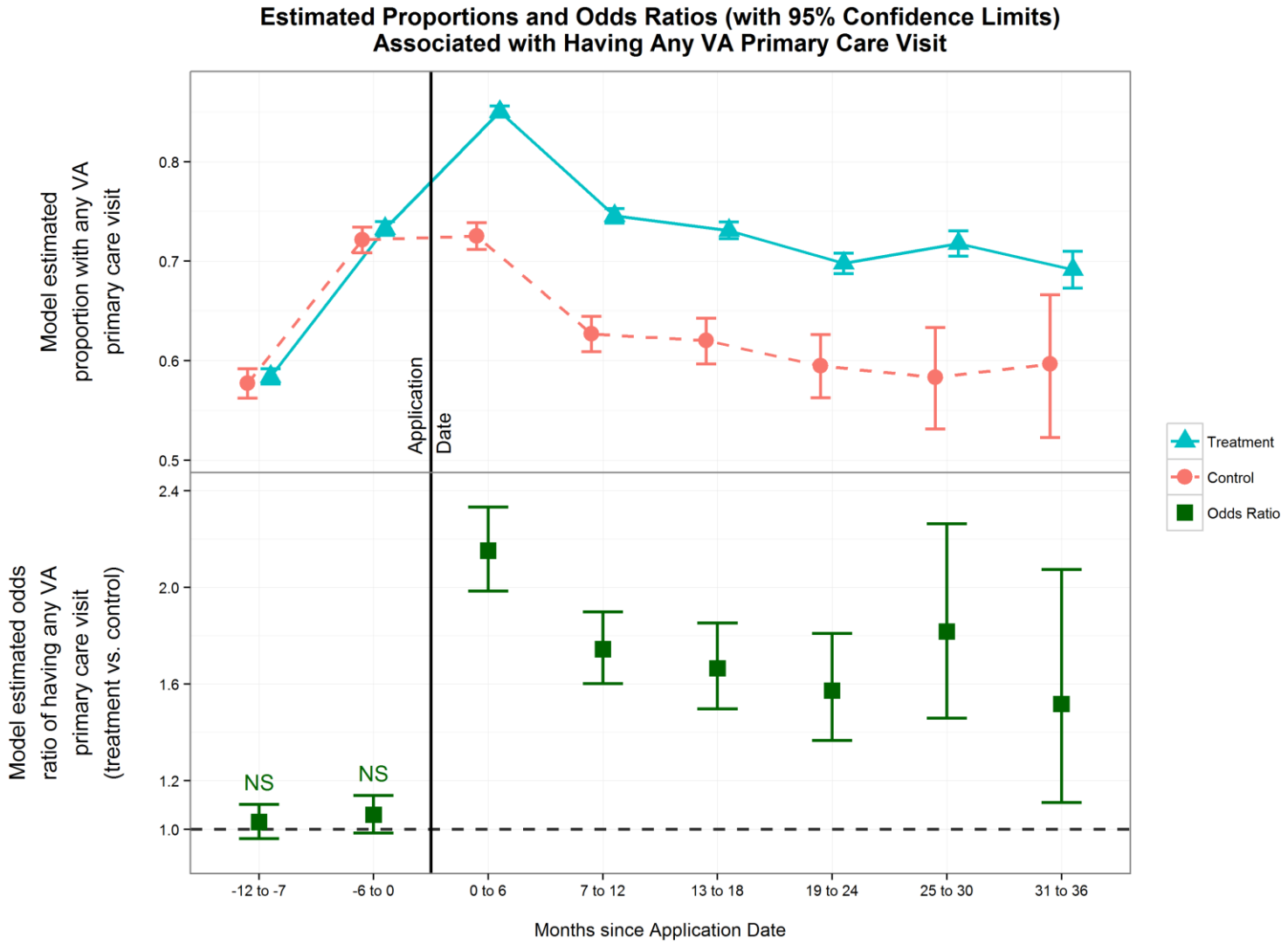
No Difference in Hospitalizations



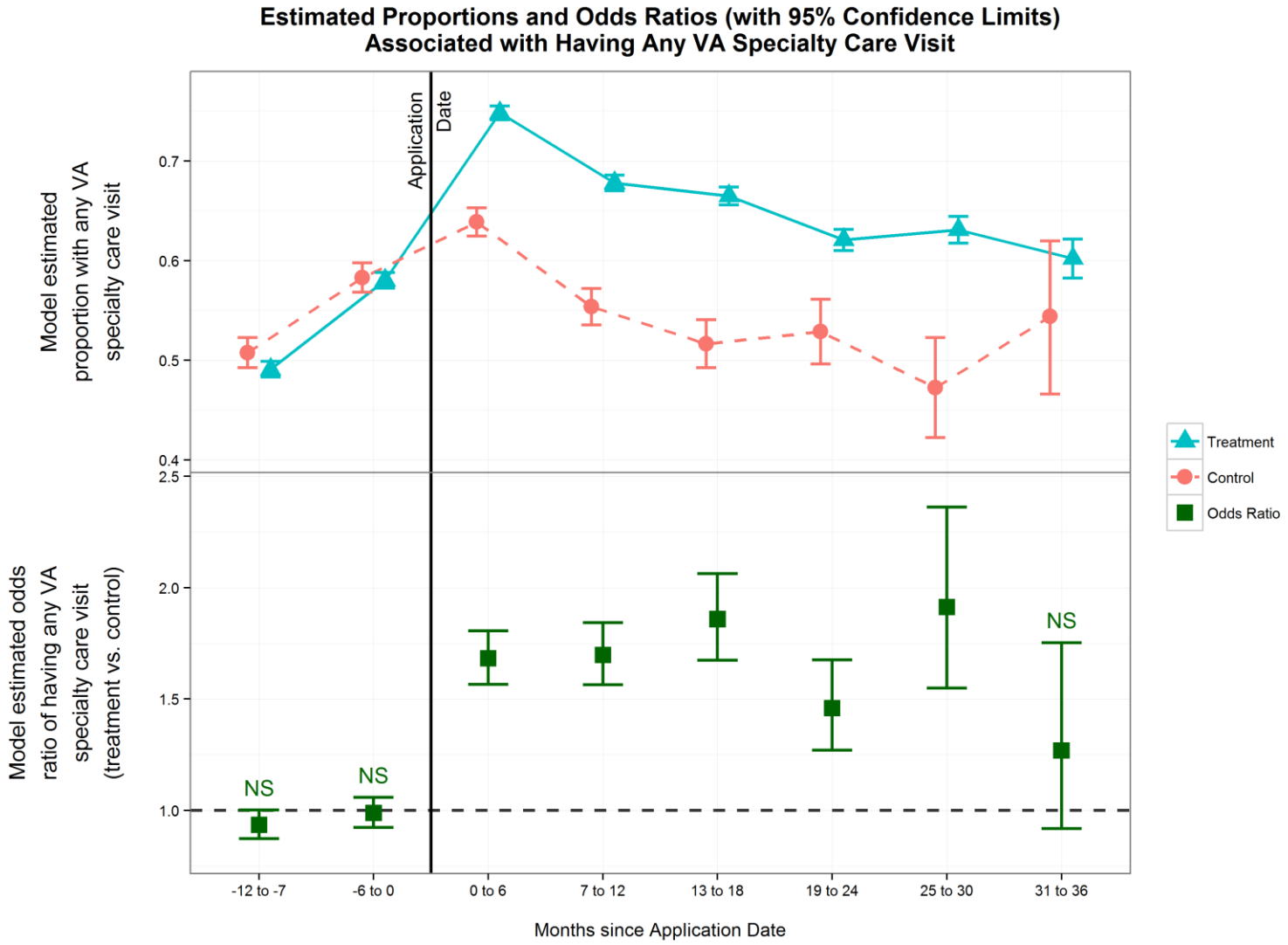
No Difference in Emergency Department Utilization



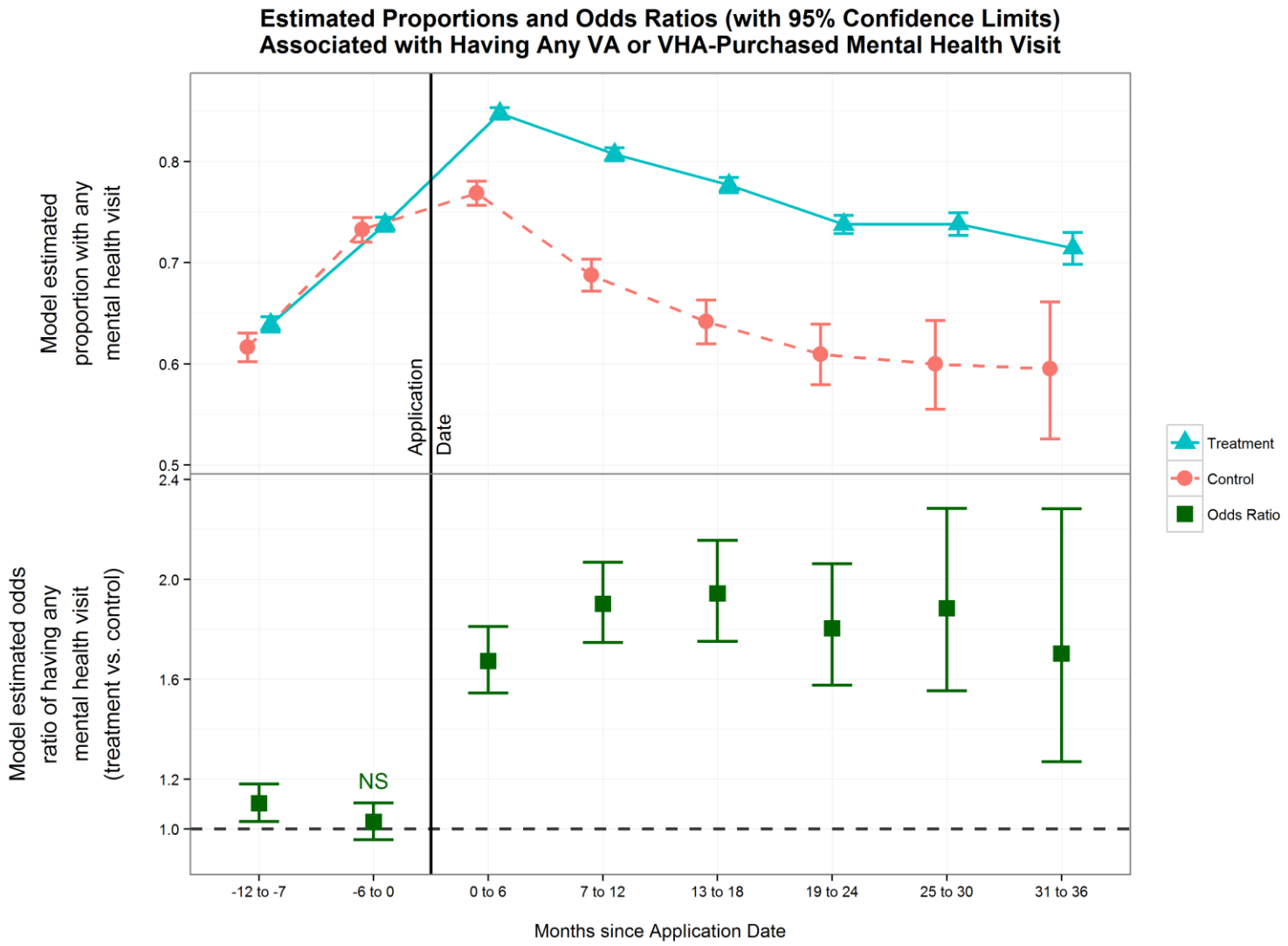
Higher VA Primary Care Utilization



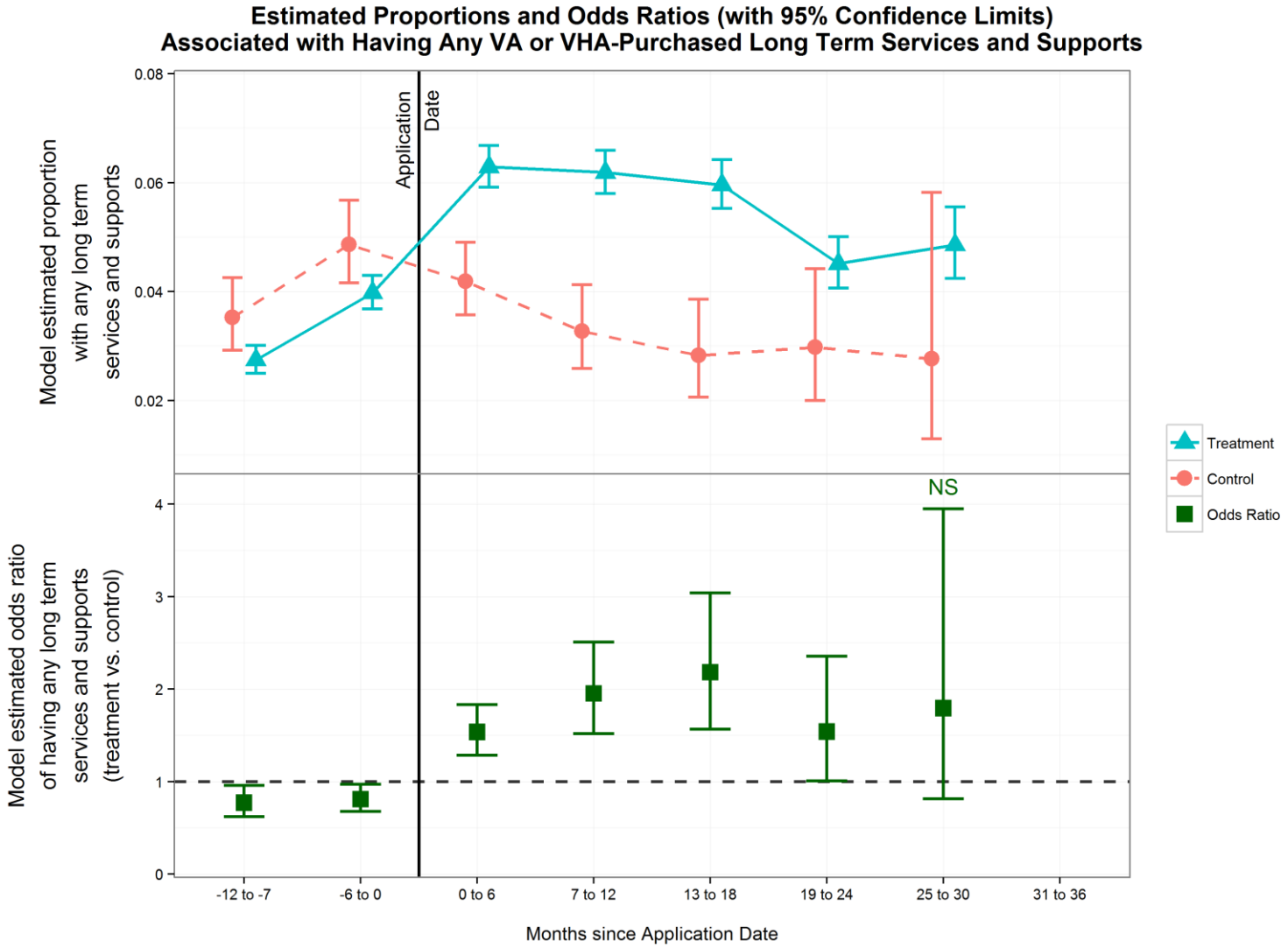
Higher VA Specialty Care Utilization



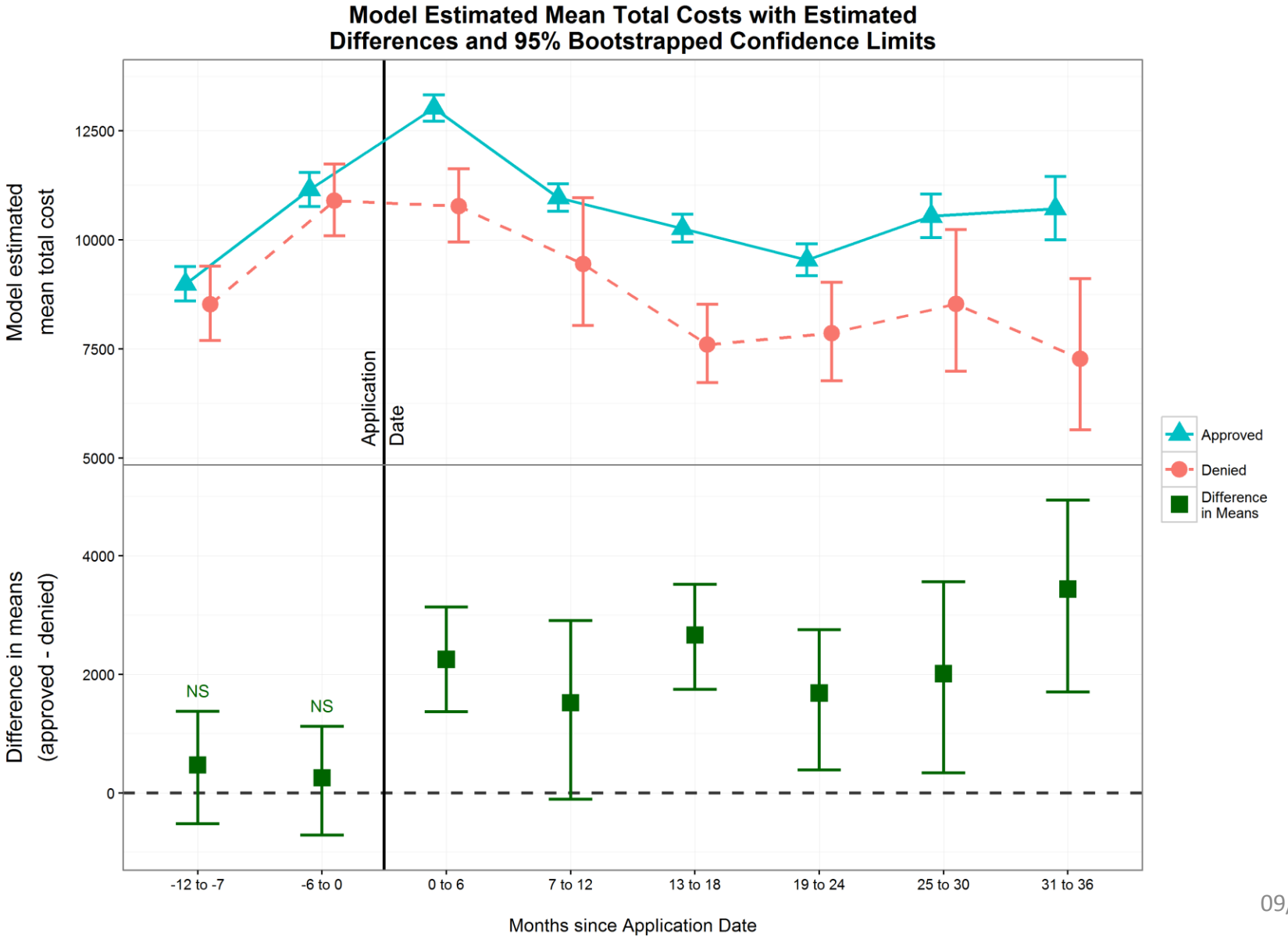
Higher Mental Health Care Utilization



Higher Long-Term Services and Supports Utilization



Increase in Total Health Care Costs to VA



Summary of Key Findings

How did PCAFC affect Veterans enrolled compared to similar Veterans not enrolled (ATT)?

- No significant change in Veteran ED Visits or Hospital Use in any time period after the application date
- Increased use of:
  - VA primary care 0-36 months
  - Mental health care 0-36 months
  - VA specialty care increased months 0-30 months
  - LTSS months 0-24 months
- Increased total costs 0-36 months after application date

Limitations

- Varying Observation Periods
  - Later application dates did not have full 3 year follow-up
- Coding of PCAFC utilization
  - PCAFC requires home visits for eligibility and quarterly visits.
  - We attempted to remove codes associated w/ program-required utilization.
  - Due to lack of standardized coding of program-required utilization, may be overstating increase of outpatient care.

Limitations

- Unobserved characteristics, e.g. education, could be imbalanced between groups
- Unobserved differences may lead to confounding and bias
  - Considered instrumental variables estimation but no valid instrument
  - The relative balance in utilization prior to application suggests unobserved differences were likely not present at baseline

It is untestable whether estimated associations were *caused by* PCAFC or *associated with* PCAFC due to such external factors impacting both outcomes and selection into PCAFC

Conclusions

- Comprehensive caregiver support yields higher outpatient utilization which could signal improved access to outpatient care or higher needs of treated Veterans
  - Goal of BPE is increasing access for vulnerable Veterans

- Increased outpatient care could lead to better health outcomes.
  - Timeliness of services
  - Better continuity of care
  - Increased diagnoses of mental health conditions
  - Reduced unmet need for treatment of identified mental health conditions

- Future work should make the link between utilization and health outcomes.

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Poll Question #3: Have you faced challenges using any of the following data sources?

SELECT ALL THAT APPLY:

- MCA/DSS data
- CDW data
- Caregiver Application Tracker Database
- Fee Basis Files
- Other (specify)

Challenges Using Caregiver Application Tracker Database

- Data collected as part of day to day operations, not for research
  - Impact on data quality and completeness
- Lack of standardization
  - e.g., denial dates and reasons
- Regularly updated with current data, so unable to rely on for historical baseline data
  - e.g., updated address fields

Challenges Using MCA (DSS) data

- More limited clinical data
  - Fewer diagnosis and procedure codes

- MCA (DSS) data as the primary data source which we linked back to Med SAS files in specific circumstances.
  - Identifying corresponding fields
  - Data cleaning of cost data (e.g., negative costs)

Challenges Identifying Mental Health Visits

- Complex algorithm which required additional clinical information other than data in DSS
  - Some clinic stops required diagnosis codes
  - Fee basis used diagnosis codes
- Unclear when multiple stops if visit was in group session vs. multiple visits
  - Decided to use “days with mental health care” instead of number of visits

Challenges Using CDW and Fee Basis files

- Identifying best data sources with the transition to CDW
- Lack of documentation that is now improving with VIREC user guides being released
- Time delay for fee basis files

Relevance to Health Services Research Community

- Policy that created VA CSP is the most sweeping national support of family caregivers U.S. has ever seen.
  - Findings a first step in understanding how broader health outcomes could be impacted by comprehensive family caregiver support.
  - Findings can inform other health care systems and decision makers considering supports for family caregivers.
- Rigorous comparative effectiveness methods may be of interest to others interested in rigorous policy evaluation.
  - The Caregiver Advise, Record and Enable Act, or CARE Act (passed in 32 states) (AARP, 2014)
  - Paid family leave for workers (e.g. FAMILY Act H.R. 1439/S. 786)
- Resource: Institute of Medicine "Families Caring for an Aging America" sets policy agenda for family caregivers

Resources for QI/PEI Researchers

VIReC Cyberseminar Series Archive (filter for Partnered Research Series)
http://www.hsrd.research.va.gov/cyberseminars/catalog-archive-virec.cfm

PEI Overview homepage
http://www.queri.research.va.gov/partnered_evaluation/default.cfm

CARES project
http://www.queri.research.va.gov/partnered_evaluation/caregiver_support.cfm

QUERI Tools and Resources page (resources for QI, partnered evaluation & implementation projects)
http://www.queri.research.va.gov/tools/default.cfm

QI/IR Ethics Toolkit
http://vaww.portal.gla.med.va.gov/sites/Research/HSRD/CIPRS/QIEthics/Pages/default.aspx

Resources about Caregiver Support

HSR&D Resources

http://www.hsrd.research.va.gov/publications/emerging_evidence/caregivers.cfm

VA Caregiver Support

http://www.caregiver.va.gov/toolbox/

Data Resources

VIReC Overview: Working with VA Data

http://vaww.virec.research.va.gov/Intro/Working-with-VA-Data.htm

VHA Data Portal Home page

http://vaww.vhadataportal.med.va.gov/Home.aspx

Questions?

Courtney.VanHoutven@va.gov

Valerie.Smith9@va.gov