Systems for Action
National Coordinating Center
Systems and Services Research to Build a Culture of Health

Strategies to Achieve Alignment, Collaboration, and Synergy across Delivery and Financing Systems

Integrating Health and Social Services for Veterans by Empowering Family Caregivers

Research In Progress Webinar
Wednesday, July 25, 2018
12:00-1:00 pm ET/ 9:00 am-10:00 am PT

College of Public Health
Center for Public Health Systems and Services Research

Funded by the Robert Wood Johnson Foundation

Agenda

Welcome: **CB Mamaril, PhD**
Research Faculty, RWJF Systems for Action National Coordinating Center
University of Kentucky College of Public Health

Presenters: **Megan Shepherd-Banigan, PhD, MPH**
Research Health Scientist
Health Services Research and Development
U.S. Department of Veteran Affairs
and
Assistant Professor
Population Health Sciences
Duke University

Commentary: **Jennifer Henius, LCSW**
Sr. Health Systems Specialist
Care Management and Social Work Services
Caregiver Support Program
U.S. Department of Veterans Affairs

Q & A: Moderated by Dr. CB Mamaril

Presenter

Megan Shepherd-Banigan, PhD, MPH
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&
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Commentary Speaker

Jennifer Henius, LCSW

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Care Management and Social Work Services

Caregiver Support Program

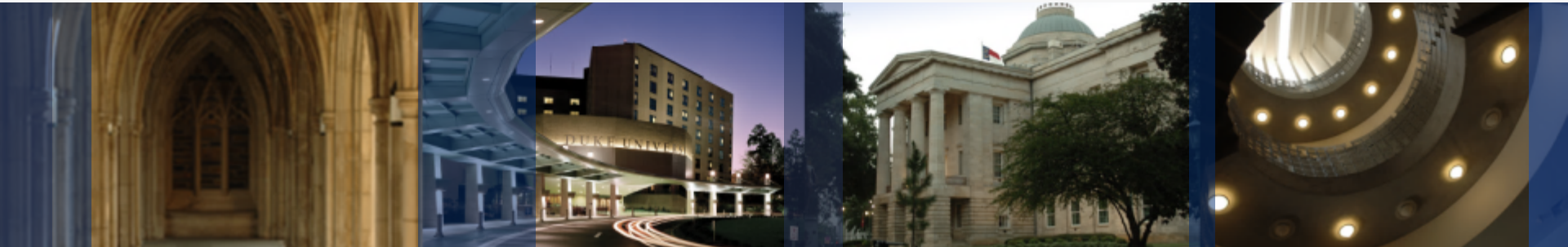
U.S. Department of Veterans Affairs

Integrating Health and Social Services for Veterans by Empowering Family Caregivers

Megan Shepherd-Banigan, PhD, MPH
Research Scientist, Health Services Research and Development, Durham VAMC
Assistant Professor, Department of Population Health Sciences, Duke University

DukeMedicine

VA HEALTH CARE Defining EXCELLENCE in the 21st Century



TEAM AND PARTNERS

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Caregiver Support Program VACO

Margaret Kabat

Jennifer Henius

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Overview

- Context/Problem
- Potential Strategy
- Research Questions and Approach
- Preliminary Results: post 9/11 GI Bill service use
- Next Steps

Context

Veteran

- 3.3 million deployed since 2001
- Advances in battlefield medicine
  - 14% PTSD; 19% TBI
- Some experience reintegration challenges
- Challenges maintaining social relationships, employment, education; economic vulnerability; decline in health

Context

Veteran: cross cutting medical, social, economic needs

Veteran Health Administration

- Evidenced-based medical and psychological care
- Supported employment
- Caregiver support program

Veteran Benefits Administration

- Education assistance (post 9/11 GI Bill)
- Vocational rehabilitation

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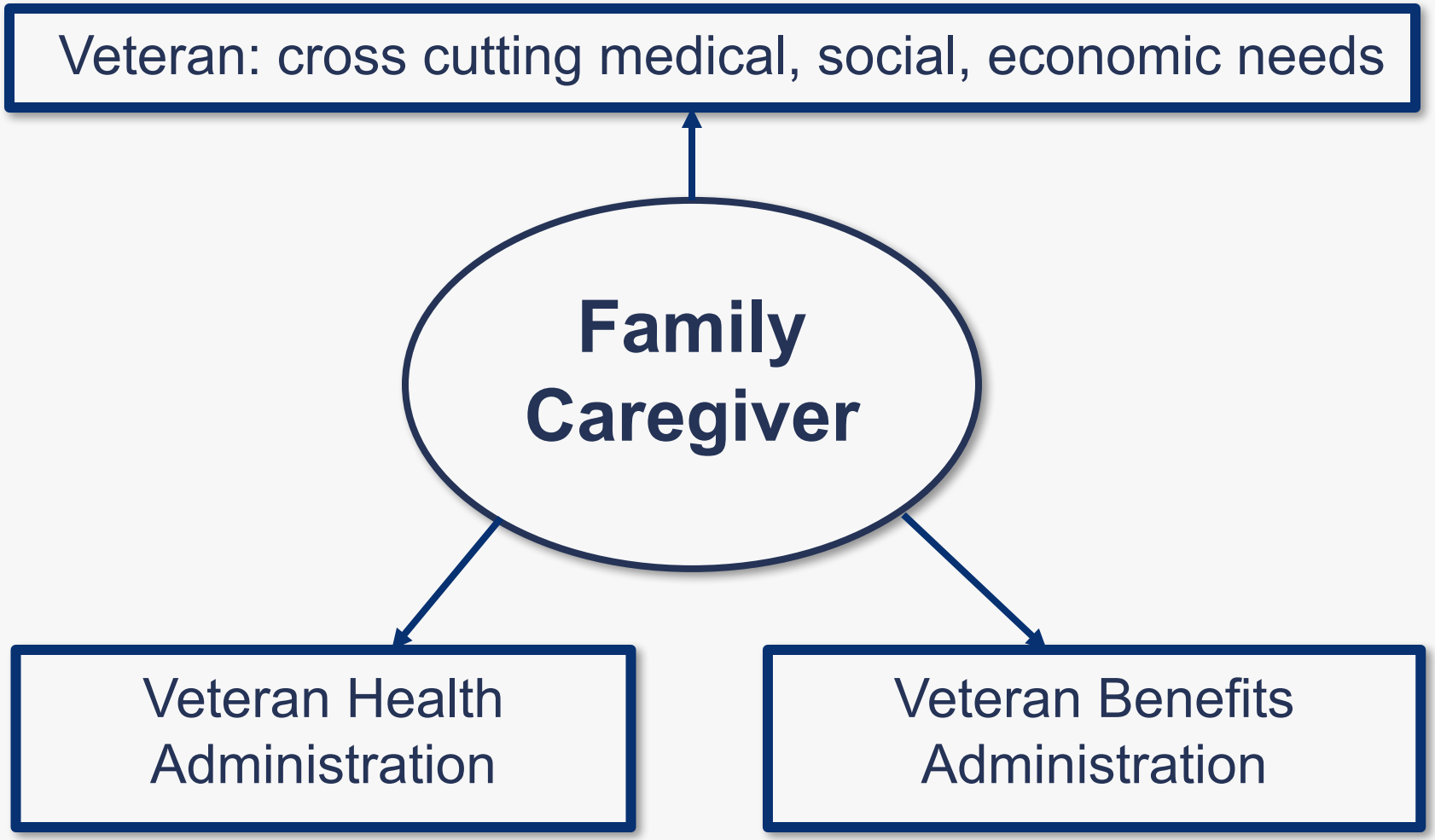
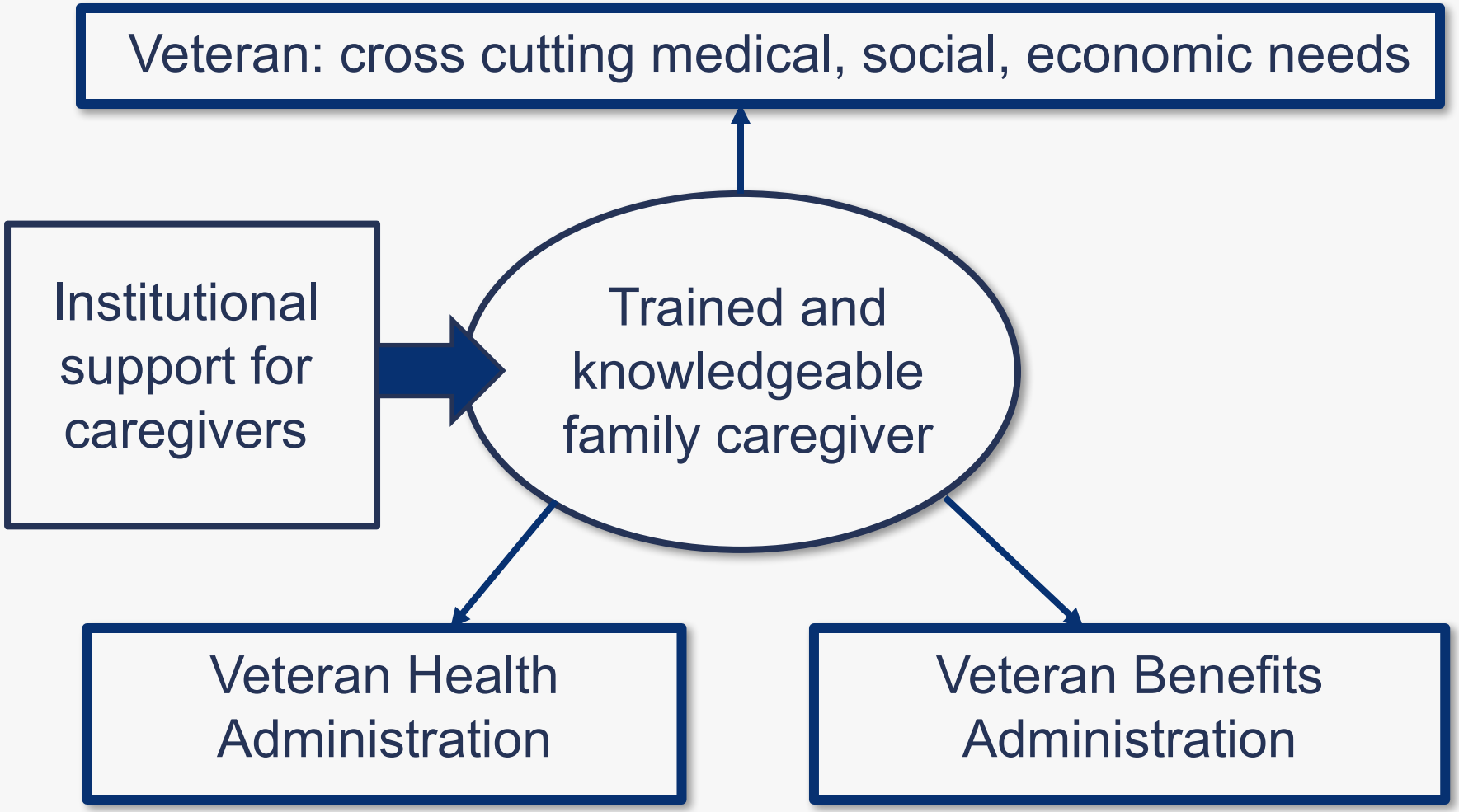
Strategy to Address Problem



Strategy to Address Problem



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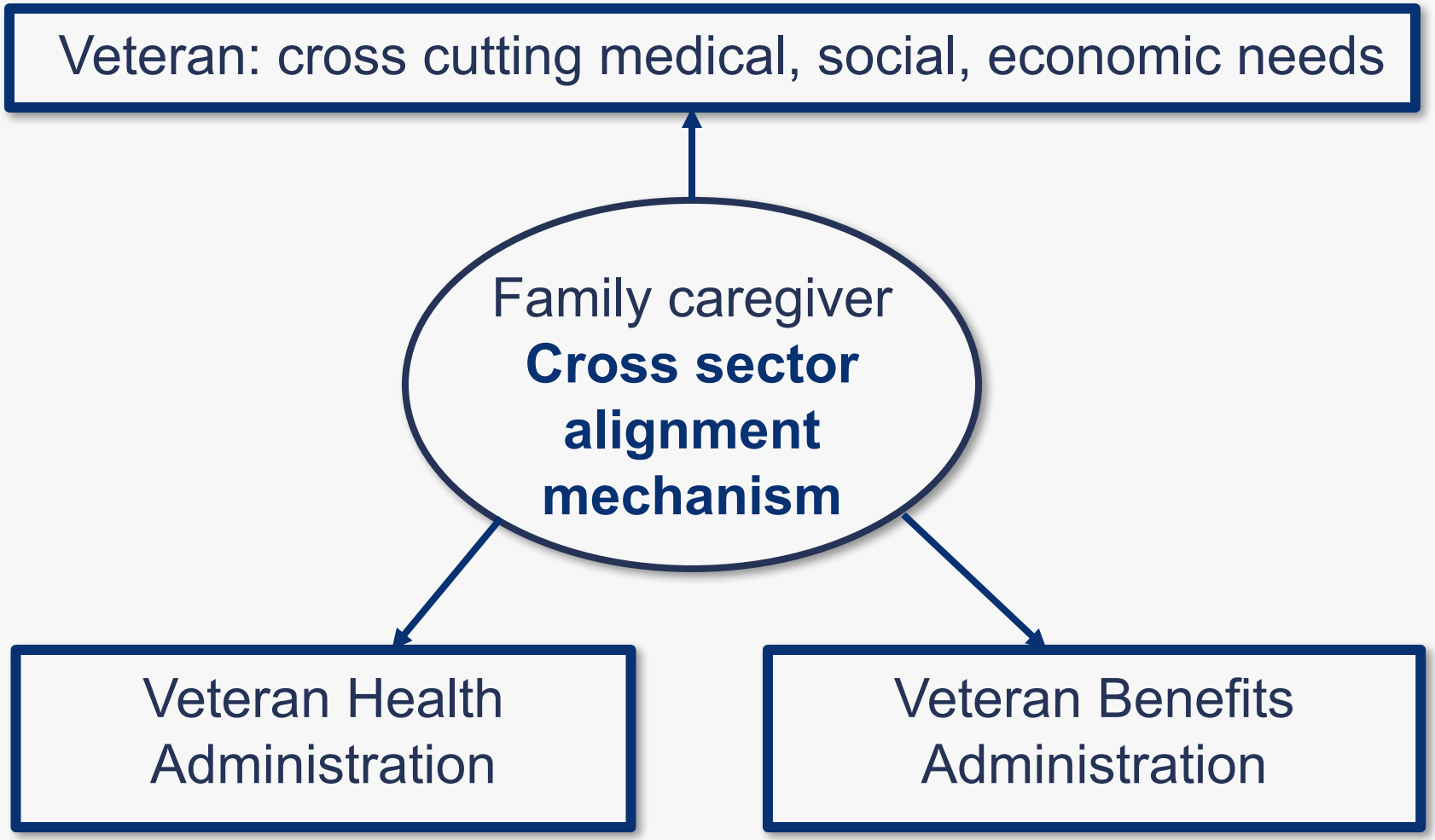

Opportunities in VA

Caregivers & Veterans Omnibus Health Services Act
(P.L. 111-163; May 5, 2010)

Outlined specific new services for caregivers of Veterans:

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

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

VA Caregiver Support Program Office housed in Veteran Health Administration, under Care Management and Social Work Services, Patient Care Services

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PCAFC Overview

Clinical program, provides services directly to eligible caregivers

- Caregiving Training and Education
- Monthly Stipend
- Caregiver Support Coordinators
- Health Insurance
- Mental Health Services
- Building Better Caregivers
- Respite Care
- Travel Reimbursement
- Caregiver Support Line

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Program Expansion

VA Mission Act 2018 extends PCAFC to caregivers of Veterans of all eras beginning with caregivers of Veterans who served in Vietnam or earlier

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1. Problem (complex health/social needs among Veterans)

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2. Potential strategy (family caregivers)

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3. Opportunities in VA (institutional support, data integration)

1. Problem (complex health/social needs among Veterans)
2. Potential strategy (family caregivers)
3. Opportunities in VA (institutional support, data integration)
4. Research questions:
   - **Aim 1**: Can institutional support for family caregivers through PCAFC impact use of social services (e.g. education assistance and vocational rehabilitation programs)?
   - **Aim 2**. What features of family caregiver support facilitate alignment of health, psychological and social service delivery systems to meet veteran physical, mental and social needs?

Aim 1 Approach

Does participation in PCAFC impact time to use of the post 9/11 GI Bill benefit, vocational rehabilitation, and supported employment?

- Merged three sources of data:
  - Veteran Health Administration electronic health records and administrative data
  - Caregiver Support Program administrative data
  - Veteran Benefits Administration data
- Sample: Veterans whose caregivers applied to PCAFC between May 1, 2010 and Sept. 30, 2014 and had not used social service prior to application
  - 3 cohorts
- Control: Caregivers applied to PCAFC and were never approved

Aim 1 Approach

Instrumental variable cox proportional hazards regression models

- **Treatment**: Ever approved for PCAFC
- **Outcome:** Time to application for the post 9/11 GI Bill benefit, supported employment, or vocational rehabilitation
- **Instrumental variable**: facility-level percentage approval for PCAFC in the 6 months prior to application

Aim 1 Approach: Rationale for IV

- Unable to randomize individuals to PCAFC
- Assume non-random selection
  - Individuals who are accepted into PCAFC may have unobserved characteristics that also affect use of social services
    - Personal expectations for engaging in work/school may be related to health
- IV allows analyst to pseudo randomize or sort individuals such that their characteristics are balanced across treatment groups!

Aim 1 Approach: Rationale for IV

- IV is a variable that is only related to outcome through treatment variable
- To be justified IV must be strongly related to treatment (IV strength) and must not be related to outcome except through treatment (IV validity)
- Used new IV method[1] developed for Cox PH models, which applies a two-stage residual inclusion (2SRI) plus a frailty term in the second stage equation

[1] Camblor-Martinez et al, 2018

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  - Frailty term addresses association between treatment and unmeasured confounders that is induced by conditioning on prior survival status

[1] Camblor-Martinez et al, 2018

Aim 2 Approach

What features of family caregiver support facilitate use of social and medical services?

- 25-30 in-depth telephone-based Veteran/caregiver dyad interviews
  - Veteran and caregiver participate together
- Sample: Individuals who had enrolled in PCAFC and used one of social services
- On-going analysis using a priori themes
  - To date, completed 22 interviews and analyzed 6 transcripts
  - Dyad unit of analysis

Sampling Frame N=1756, Veterans whose caregivers applied to and were approved for PCAFC between May 1, 2010 and September 30, 2014, live within the US, age less than 68 years at the time of PCAFC application, and used both health and social services.

Post 9/11 GI Bill Benefit n=768	Vocational Rehabilitation and Employment n=927	Supported Employment n=207
Letters sent: 76	Letters Sent: 130	Letters Sent: 191
Total # of interviews completed : 11	**Total # of Interviews completed : 10**	**Total # of Interviews completed : 5**
In process: n=20 Excluded: unable to contact n= 32 Excluded: n=0 Refused: n= 13	In process: n=24 Excluded: unable to contact n= 62 Excluded: n= 6 • Veterans did not pursue program beyond initial contact • Language barrier • Veteran ineligible for program • Many Veterans did not recall using VRE Refused: n= 28	In process: n=87 Excluded: unable to contact n= 55 Excluded: n= 19 • MANY did not recall using SE • Health Issues/Mental disability • Veterans did not pursue service beyond initial contact • Language barrier Refused: n= 25

Preliminary Results Aim 1: Post 9/11 GI Bill benefit use

Aim 1 Demographics

	Overall	Approved	Denied
	N=11,068	*N=6,463*	*N=4,605*
Veterans who used GI Bill	13.1%	13.62%	12.46%
Demographics			
Age at application date, median (IQR)*	37 (30, 47)	35 (30, 44)	42 (32, 52)
Race			
White or Unknown*	72.4%	77.5%	65.3%
Black or Other*	27.6%	22.5%	34.7%
Hispanic or Latino/a*	12.4%	14.8%	9.0%
Married**	68.5%	69.5%	67.0%
Caregiver Relationship to Veteran*			
Spouse	79.7%	82.8%	75.4%
Parent	7.6%	8.3%	6.6%
Other (e.g. sibling, friend)	12.6%	8.9%	17.9%
Service Connection*			
High (>=70%)	67.2%	71.0%	61.9%
Medium high (50%-69%)	12.5%	11.0%	14.6%
Medium low (10-49%)	6.4%	5.0%	8.5%
Low (<10%)	13.9%	13.0%	15.0%

*<0.001 **0.005

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Aim 1 results

- **IV Strength:** F test of IV in 1st stage equation; F-stat<10 is considered to indicate strong IV
- IV Validity

Aim 1 results

- **IV Strength: F statistic 14, p<0.001**
- IV Validity

Aim 1 results

- IV Strength
- **IV Validity** (untestable assumption); can compare balance of observed covariates across treatment and IV, improved balance across IV could indicate that unobserved confounding would also be improved by IV

Aim 1 Balance by Approved for PCAFC

	Approved	Denied
	N=6,463	*N=4,605*
Comorbidities		
Diabetes*	**8.4%**	**16.6%**
Musculoskeletal	64.2%	60.2%
Alcohol or Substance Abuse	20.4%	19.0%
Hearing loss, pain, other	18.4%	14.9%
Hyperlipidemia*	**29.1%**	**34.2%**
Hypertension*	**25.2%**	**34.3%**
Obesity	18.7%	19.0%
Pain of psychogenic origin (not including back pain) *	**47.2%**	**39.7%**
Traumatic brain injury*	**30.9%**	**15.6%**
Headache*	**19.5%**	**12.7%**
Joint pain and effusion, not including back	38.3%	35.1%
Anxiety	26.0%	22.4%
Depression*	**52.4%**	**44.7%**
Other mental health	16.6%	14.5%
Post traumatic stress disorder*	**72.9%**	**54.1%**
Tobacco use	23.5%	21.3%
Acute myocardial infarction	7.0%	8.5%

** Indicates standardized difference >10*

Aim 1 Balance by IV

	Below IV Median	Above IV Median
Comorbidities		
Diabetes	12.3%	11.3%
Musculoskeletal	60.6%	64.6%
Alcohol or Substance Abuse	18.3%	21.4%
Hearing loss, pain, other	15.6%	18.4%
Hyperlipidemia	31.6%	30.9%
Hypertension	28.9%	29.1%
Obesity *	17.2%	20.6%
Pain of psychogenic origin (not including back pain)	41.6%	46.7%
Traumatic brain injury	22.6%	26.6%
Headache	16.9%	16.4%
Joint pain and effusion, not including back*	**35.5%**	**38.7%**
Anxiety	22.8%	26.2%
Depression	47.2%	51.4%
Other mental health	14.7%	16.8%
Post traumatic stress disorder*	**62.4%**	**68.0%**
Tobacco use	40.8%	42.8%
Acute myocardial infarction	7.2%	8.1%

** Indicates standardized difference >10; all standardized differences were less than 12*
Instrumental variable=facility-level percentage approval for PCAFC in the 6 months prior to application

Aim 1 Results

Model	Coefficient, 95% CI
Time to application for the post 9/11 GI Bill benefit	
Naïve adjusted Cox PH model	HR=0.98, 0.89-1.08
IV adjusted Cox PH model (2SRI + frailty)	HR=1.00, 0.60-1.65

Models adjusted for health comorbidities, demographics, distance to nearest facility, caregiver/veteran relationship, VA-level disability and insurance variables, service use, facility fixed effects, and application time period fixed effects.

Instrumental variable=facility-level percentage approval for PCAFC in the 6 months prior to application

Preliminary Results Aim 2: Post 9/11 GI Bill service use

Aim 2: Demographics of participants of analyzed transcripts (n=6)

	Caregiver relationship to Veteran	Participation in Caregiver Support Program	Age of Veteran
Veteran/Caregiver #1	Spouse	Active	34
Veteran/Caregiver #2	Spouse	Active	36
Veteran/Caregiver #3	Spouse	Active	45
Veteran/Caregiver #4	Spouse	Transition out	36
Veteran/Caregiver #5	Spouse	Transition out	34
Veteran/Caregiver #6	Spouse	Active	41

Aim 2 preliminary results

- Emerging themes
  1. Veterans used the GI Bill to integrate back into civilian life

CG: "Having the GI Bill helps him to figure out another path for his future and reinvent himself"

Aim 2 preliminary results

2. Recognized direct link between addressing social needs (i.e. relationships, school, work, sense of self, etc.) and health

Veteran: "Sports has become a really huge factor in my recovery, not only sobering up, but redefining not only who I am, but who I want to be [...] I figured what better way to be who I want to be than educating the next generation in the pros and cons of what sports has to offer."

Aim 2 preliminary results

3. Life goals generally included both social and medical needs

	Social aspect of goals	Medical aspect of goals
Veteran #1	Focusing on career, having children	Reaching sobriety
Veteran #2	Taking care of family	Controlling anxiety and PTSD
Veteran #4	Getting an education and career, maintaining his relationship with wife	Focusing on his health (back injury), finding a job that is realistic considering his injury
Veteran #5	Be a good dad	Take care of medical issues

Aim 2 preliminary results

4. Caregivers were a critical facilitator of engaging in medical care and the post 9/11 GI Bill; across both services play similar functions

CG functions	Medical Care	Post 9/11 GI Bill
Logistical	Managing appointments and records (n=4), managing medications (n=3), attending appointments (n=4)	Completing assignments (n=4), administrative academic tasks (n=2), managing household (n=2), transportation (n=1)
Emotional	Remain engaged to address frustrations (n=1) [quote]	Emotional support to manage anxieties, uncertainty, frustration (n=3)
Advocacy	Asks for additional services/help (n=2), communicates with providers (n=4) [quote]	Spoke with instructors, sought disability services (n=1) [quote]

CG: "I try to make sure he's seeing who he needs to be seeing and for issues. I like to make sure he's following up with one of his providers that can help him out in that aspect, whatever he's having an issue with, but they've got a lot of bumps in the road when it comes to his medical history and everything with the depression, and sometimes he looks like he's going absolutely crazy so I do try to stay engaged in the medical areas"

Aim 2 preliminary results

4. Caregivers were a critical facilitator of engaging in medical care and the post 9/11 GI Bill

CG functions	Medical Care	Post 9/11 GI Bill
Logistical	Managing appointments and records (n=4), managing medications (n=3), attending appointments (n=4)	Completing assignments (n=4), administrative academic tasks (n=2), managed household (n=2), transportation (n=1)
Emotional	Remain engaged to address frustrations (n=1) [quote]	Emotional support to manage anxieties, uncertainty, frustration (n=3)
Advocacy	Asks for additional services/help (n=2), communicates with providers (n=4) [quote]	Spoke with instructors, sought disability services (n=1) [quote]

CG: Ensure that “professors were aware that he isn’t a joke and he’s here, and he wants to be taken seriously, but it’s more than just the arm that’s missing. It’s the intellectual and emotional disabilities that affect these Veterans more because it’s harder for us able bodies to recognize the difference.”

Aim 2 preliminary results

5. Institutional support for caregivers through PCAFC was a critical facilitator for medical care; less clear for the post 9/11 GI Bill
    - Medical care facilitators: referrals for health services and medical equipment, disease education, caregiver skills education, acknowledgement of caregiver role
    - Post 9/11 GI Bill: stipend (n=3), encouragement to attend school [acknowledgement of ability] from program staff (n=1)

CG: "It [stipend] was nice because it gives us time for [Veteran] to kind of figure out what he needs to do to get back on his feet […] like I said he's trying to figure out what he was going to [be] after the military. It's been a couple years, but it's been nice for him to have that, along with the GI Bill to create a new career."

Preliminary conclusions for post 9/11 GI Bill

- Medical, psychological and social needs are highly interconnected
- Caregivers are critical facilitators of engaging in GI Bill
- Participation in PCAFC is not associated with application to the post 9/11 GI Bill, but plays a strong role in medical care
- Early indications that some program features could be effective for support engagement with the post 9/11 GI Bill benefit
  - Stipend, information/resources about GI Bill benefits, encouragement from program staff

Next Steps

- Aim 1
  - Complete analysis for vocational rehabilitation and supported employment outcomes
  - Examine outcomes in subset of younger veterans
- Aim 2
  - Complete qualitative analysis of 18 transcripts; conduct 3-8 final, targeted interviews
- Prepare recommendations to share with partners

Thank you!

Resources

Caregiver Support Program
https://www.caregiver.va.gov/

Post 9/11 GI Bill
https://www.benefits.va.gov/gibill/post911_gibill.asp

Vocational Rehabilitation and Employment
https://www.benefits.va.gov/VOCREHAB/edu_voc_counseling.asp

Compensated Work Therapy Program (Supported Employment)
https://www.va.gov/health/cwt/supportedemployment.asp

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- Robert Wood Johnson Foundation

Upcoming Webinars

Archives

http://systemsforaction.org/research-progress-webinars

Upcoming

Wednesday, ~~August 8, 2018, 12 p.m., ET~~ (Rescheduled for October 3, 2018)

Systems for Action Individual Research Project

Testing a New Terminology System for Health and Social Services Integration

Miriam Laugesen, PhD, and Sara Abiola, PhD, JD, Columbia University Mailman School of Public Health

Wednesday, August 22, 2018, 12 p.m., ET

Systems for Action Intramural Research Project

TBA

Anna Hoover, PhD, and Dominque Zephyr, MA, University of Kentucky College of Public Health

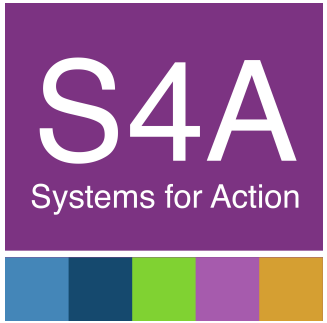
Wednesday, September 19, 2018, 12 p.m., ET

Systems for Action Intramural Research Project

Rural-Urban Differences in Delivery Systems for Population Health Activities

John Poe, PhD, Systems for Action National Program Office, University of Kentucky College of Public Health

Questions?



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