# *Individual and Family Level Drivers of Veteran Engagement in Psychotherapy for Posttraumatic Stress: A mixed methods study*


ADAPT
DURHAM CENTER OF INNOVATION TO ACCELERATE DISCOVERY AND PRACTICE TRANSFORMATION

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*COIN, Durham VA Health System*

VA Durham VA Health Care System

# Poll Question #1

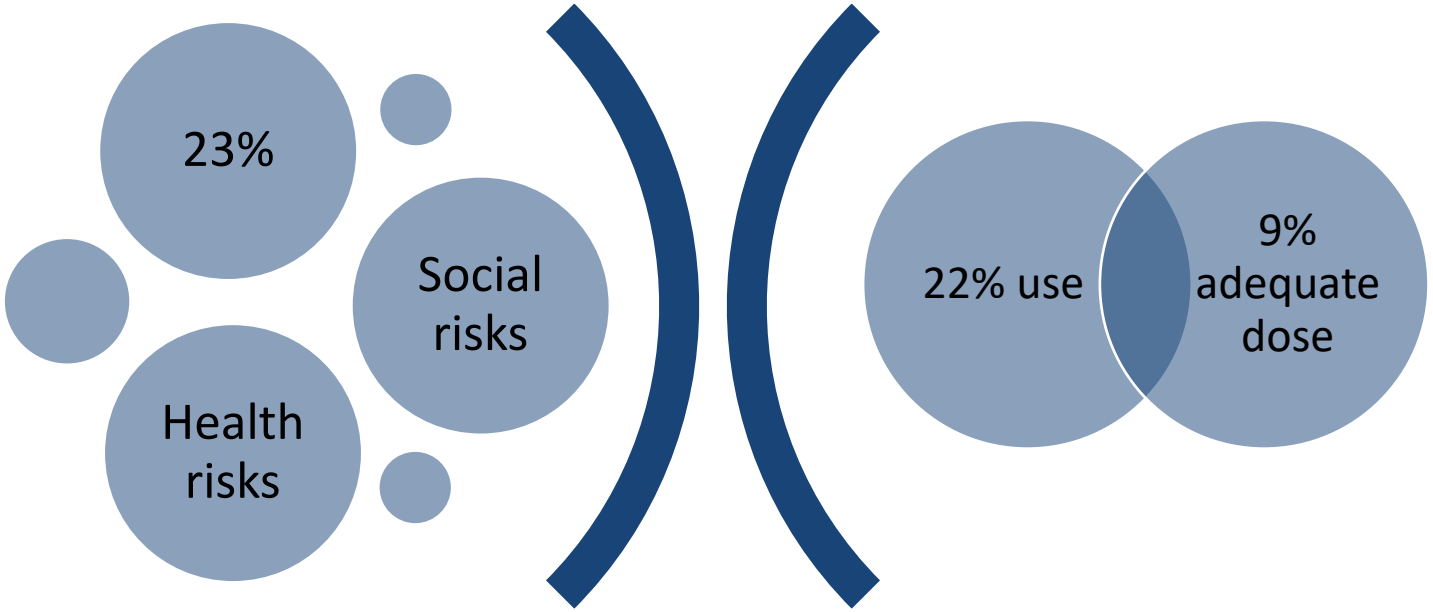
- **What is your primary role in VA?**
  - student, trainee, or fellow
  - clinician
  - researcher
  - Administrator, manager or policy-maker
  - Other

# Poll Questions

- **# 2: Do you work with Veterans and their loved ones?**
  a. Yes
  b. No

- **# 3: How are you involved in this work?**
  a. I work clinically with Veterans and their loved ones (e.g., caregivers, family therapy, etc.)
  b. I am involved in research with Veterans and their loved ones
  c. I do both
  d. Neither

# Background

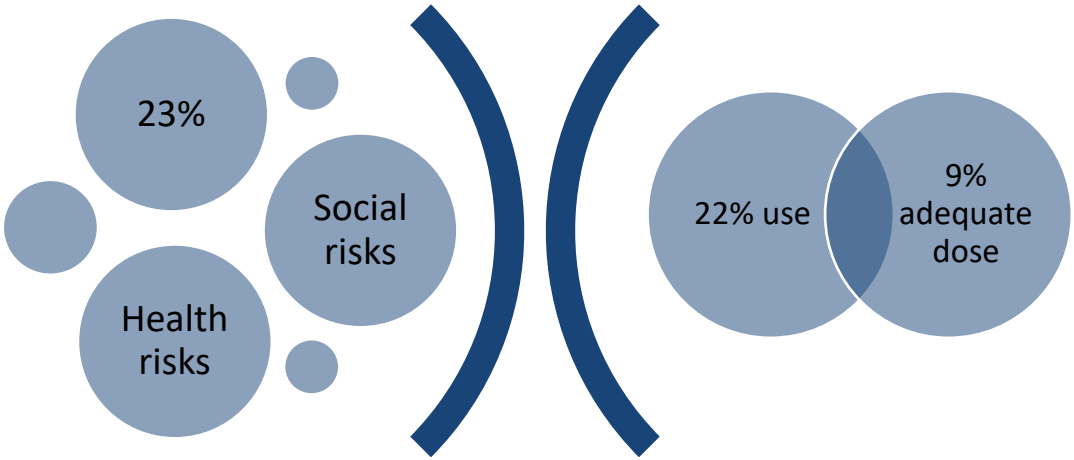



PTSD is prevalent and impedes function

Low use effective therapies

Fulton et al, 2015, Maguen et al, 2019, Erbes et al, 2011, Sayers et al, 2010

# Background



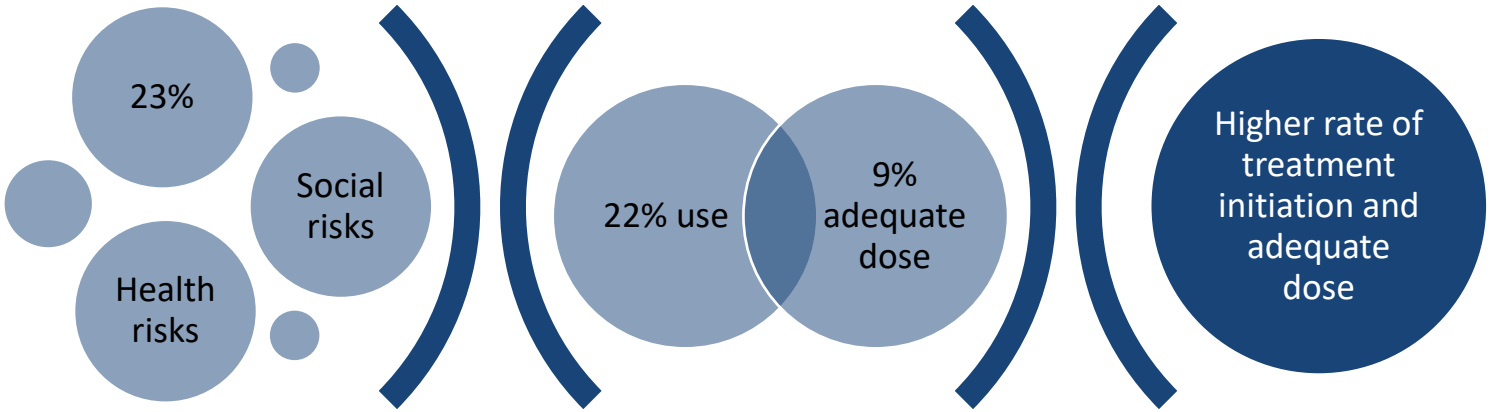

PTSD is prevalent and impedes function

Low use effective therapies

Intervene on family determinants of treatment engagement

Meis et al, 2015; Meis et al, 2014, Charuvastra & Cloitre, 2008; Prince et al, 2013

# Background



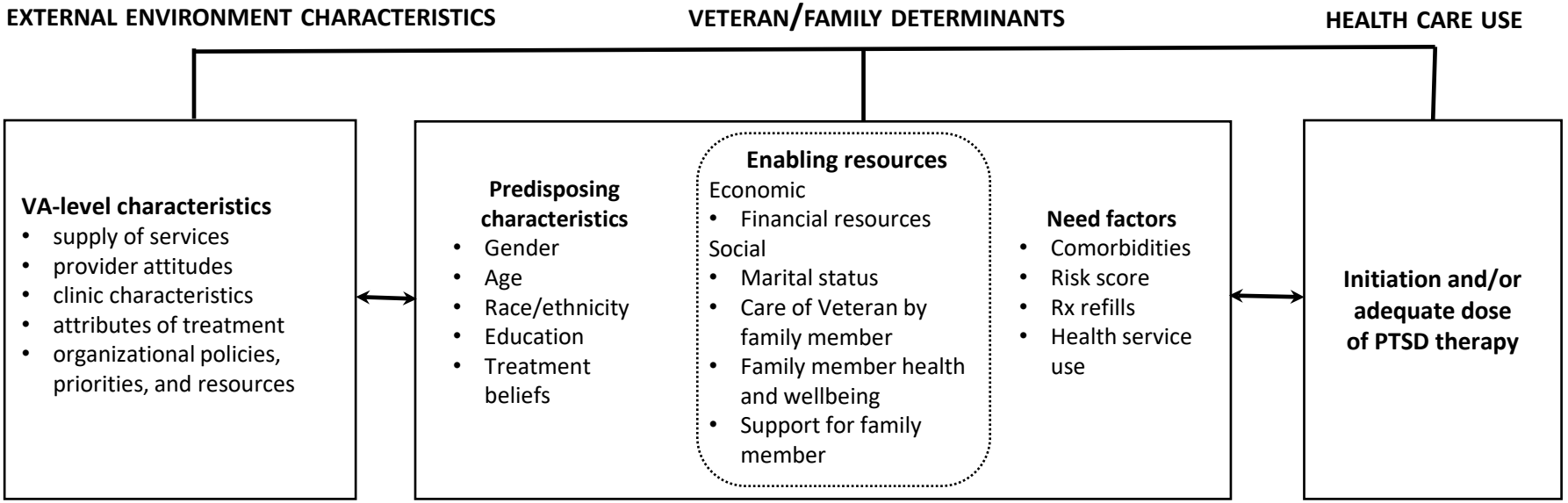

PTSD is prevalent and impedes function

Low use EBPs

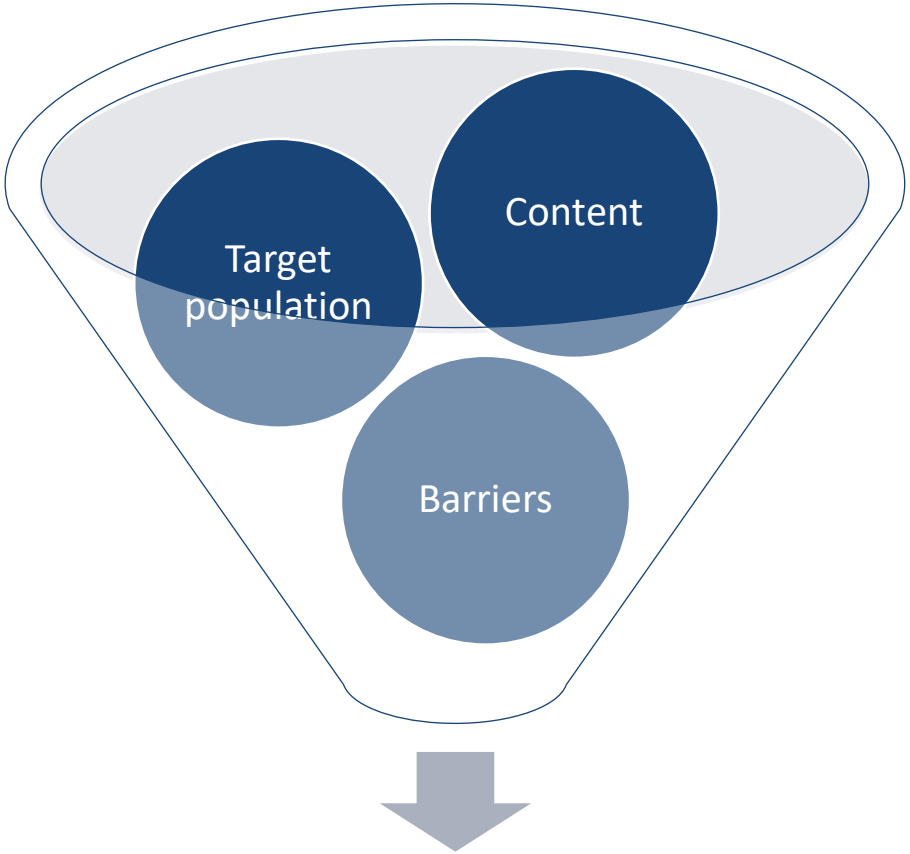
Outcomes

Family-involved, adjunct intervention to improve veteran and family treatment attitudes, knowledge and expectations about treatment

# Conceptual model—adaptation of Andersen behavioral model of health service use



# Building knowledge—mixed methods formative research

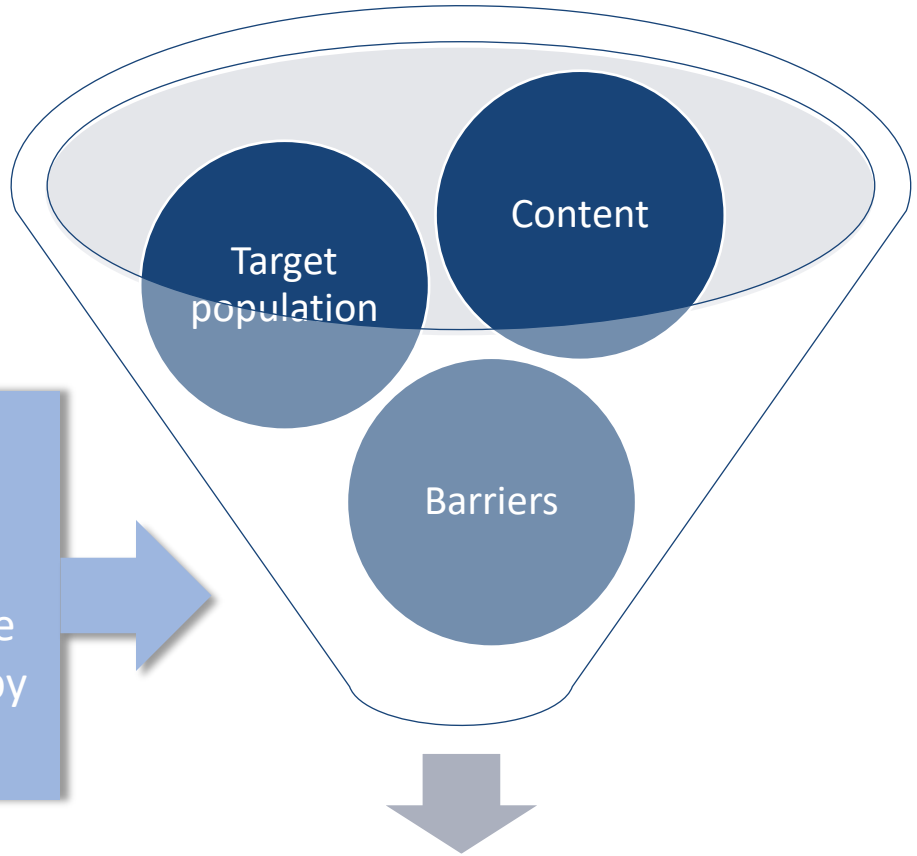



Intervention development

# Building knowledge—mixed methods formative research

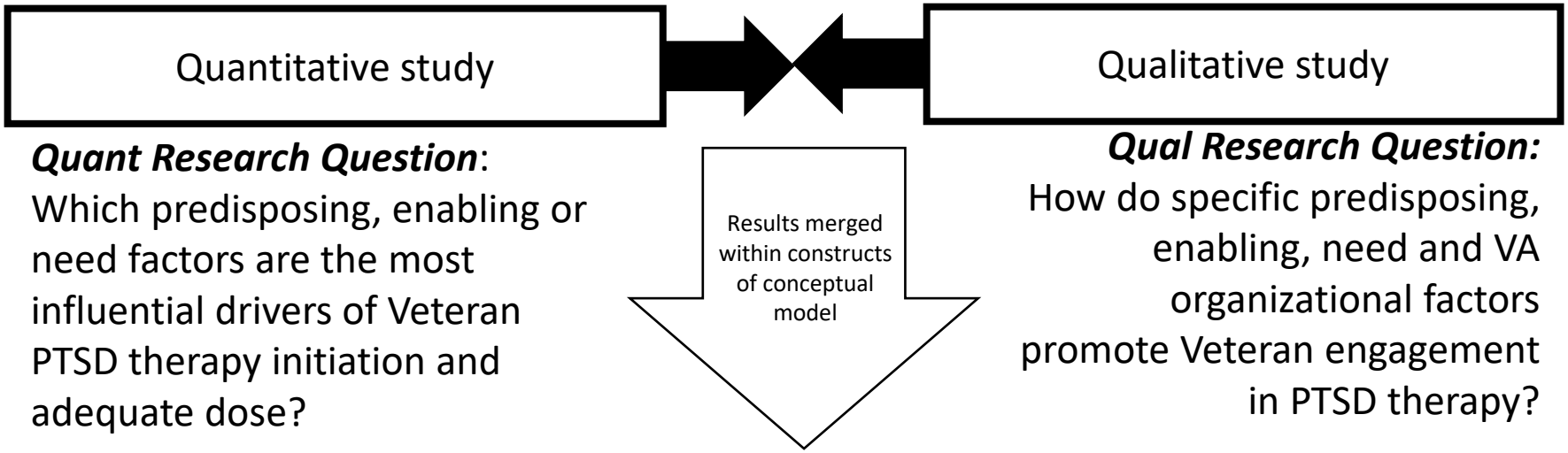
**Research question**

Which Veteran and family-level determinants most influence Veteran use of PTSD psychotherapy and why?

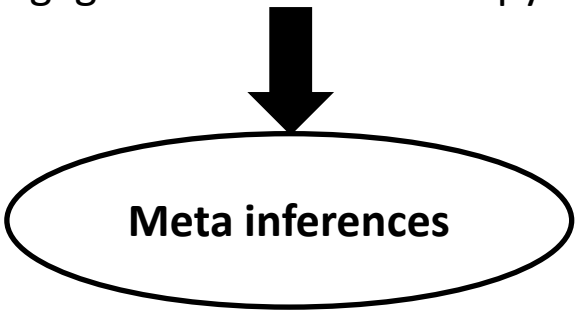


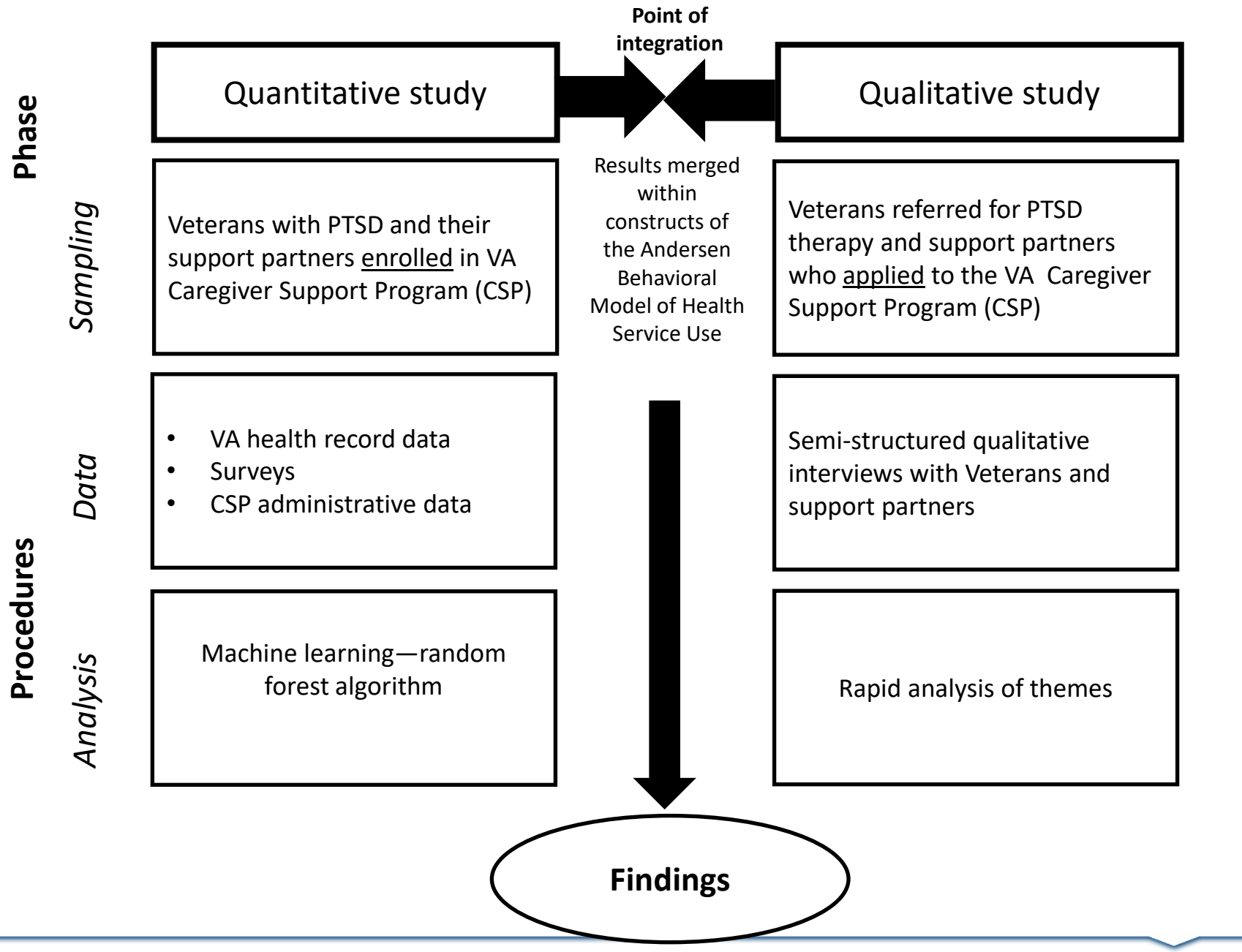

Intervention development

# Convergent mixed methods design




***Mixed Methods Research Question***: In what ways do the qualitative findings agree or disagree with the most influential factors identified in the quantitative models and how do they provide additional context for understanding how these factors promote engagement in PTSD therapy?




Point of integration
Phase
Quantitative study
Qualitative study
Sampling
Veterans with PTSD and their support partners enrolled in VA Caregiver Support Program (CSP)
Results merged within constructs of the Andersen Behavioral Model of Health Service Use
Veterans referred for PTSD therapy and support partners who applied to the VA Caregiver Support Program (CSP)
Procedures
Data
• VA health record data
• Surveys
• CSP administrative data
Semi-structured qualitative interviews with Veterans and support partners
Analysis
Machine learning—random forest algorithm
Rapid analysis of themes
Findings

***Quant Research Question***: Which predisposing, enabling or need factors are the most influential drivers of Veteran PTSD therapy initiation and adequate dose?

**Procedures**

*Sample*

OEF/OIF Veterans with PTSD diagnosis and their family caregivers enrolled in Caregiver Support Program (May 1, 2011-Sept 1, 2015), family member completed survey (Sept/Oct, 2015) (n=1,237)

*Data*

- **VA health record data**: Veteran demographics, medical diagnoses, health service use (including outcomes), risk scores, pharmacy use
- **Surveys of support partners**: Support partner demographics, distress and burden, relationship satisfaction, financial strain, Veteran health (per support partner reports)
- **Administrative data from Caregiver Support Program**: Linking family members to Veterans, relationship, application dates
- Note that we did not have data about key organizational level factors, such as provider attitudes, clinic factors, or treatment type

*Analysis*

Machine learning—random forest algorithm (more to follow)

# Outcomes

Initiation of PTSD-related mental health therapy

- 2 qualifying visits occurring on different days, 21 days apart

AND

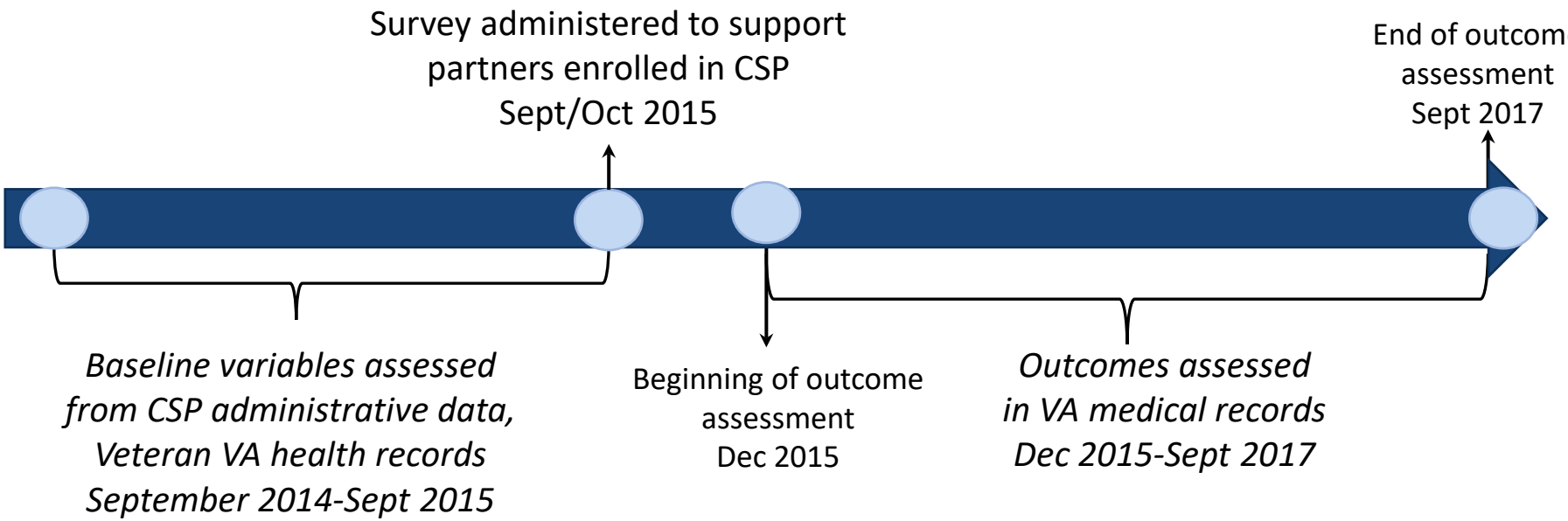
Adequate dose of PTSD-related mental health therapy

- 8 qualifying visits occurring within 180 days

*between December 2015 and September 2017*

Maguen et al, 2019; Spoont et al, 2010

# Study timeline

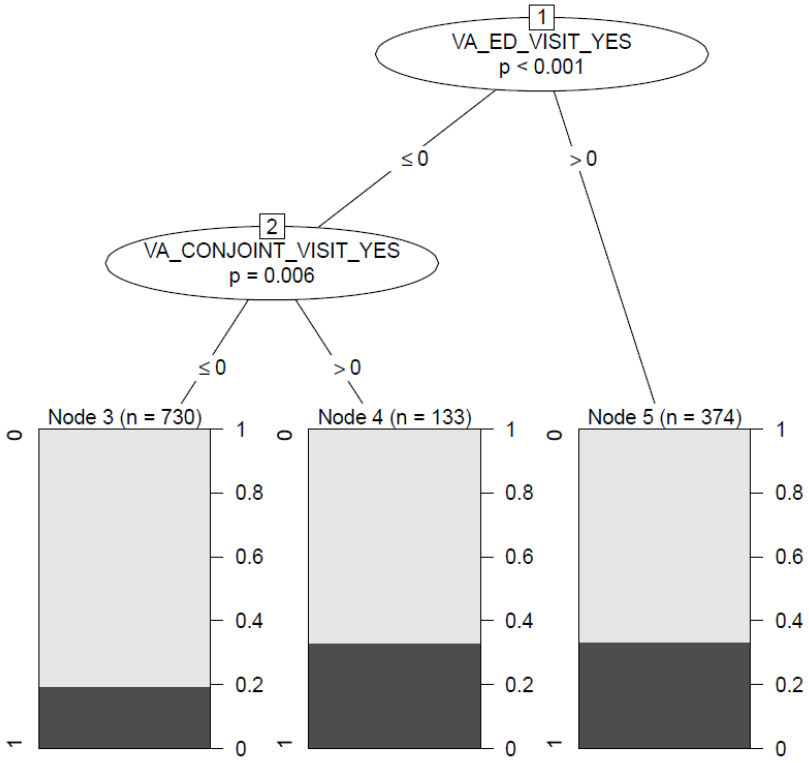


# Analytical approach—random forests

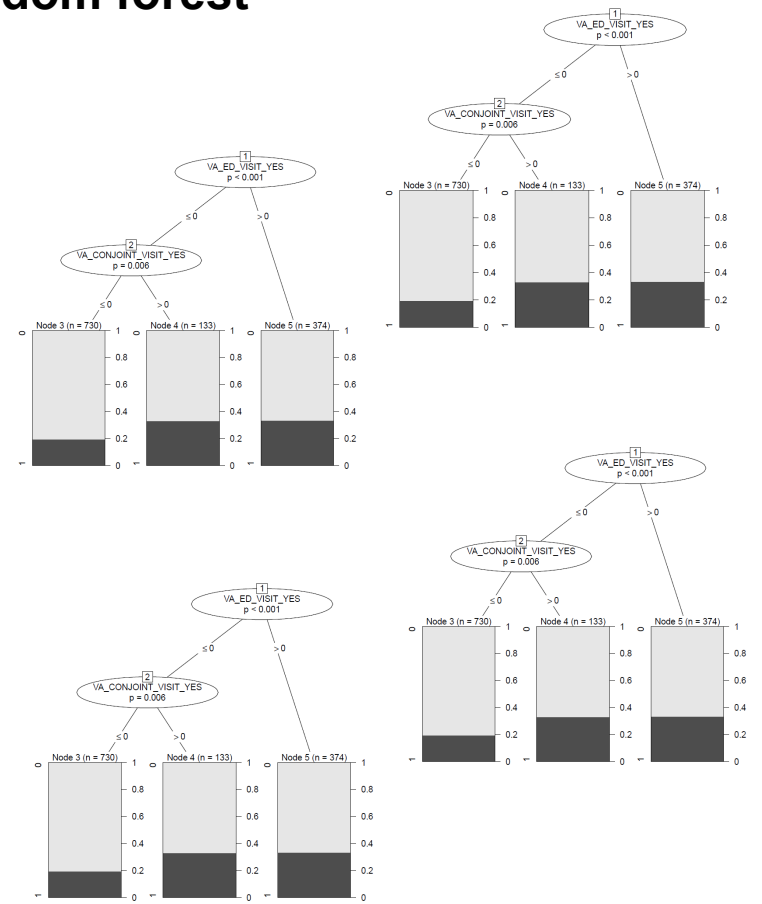
- Identify patterns in the data
- No a-priori theory or prior work in area/exploratory
- Decision-tree algorithm and draw repeated trees to identify strongest drivers of outcomes
  - Included 55 predictors
  - Ran 1000 trees
  - Other ML-related stuff: tuned parameters, rebalanced data, calculated predictive fit statistics

# Random forest approach

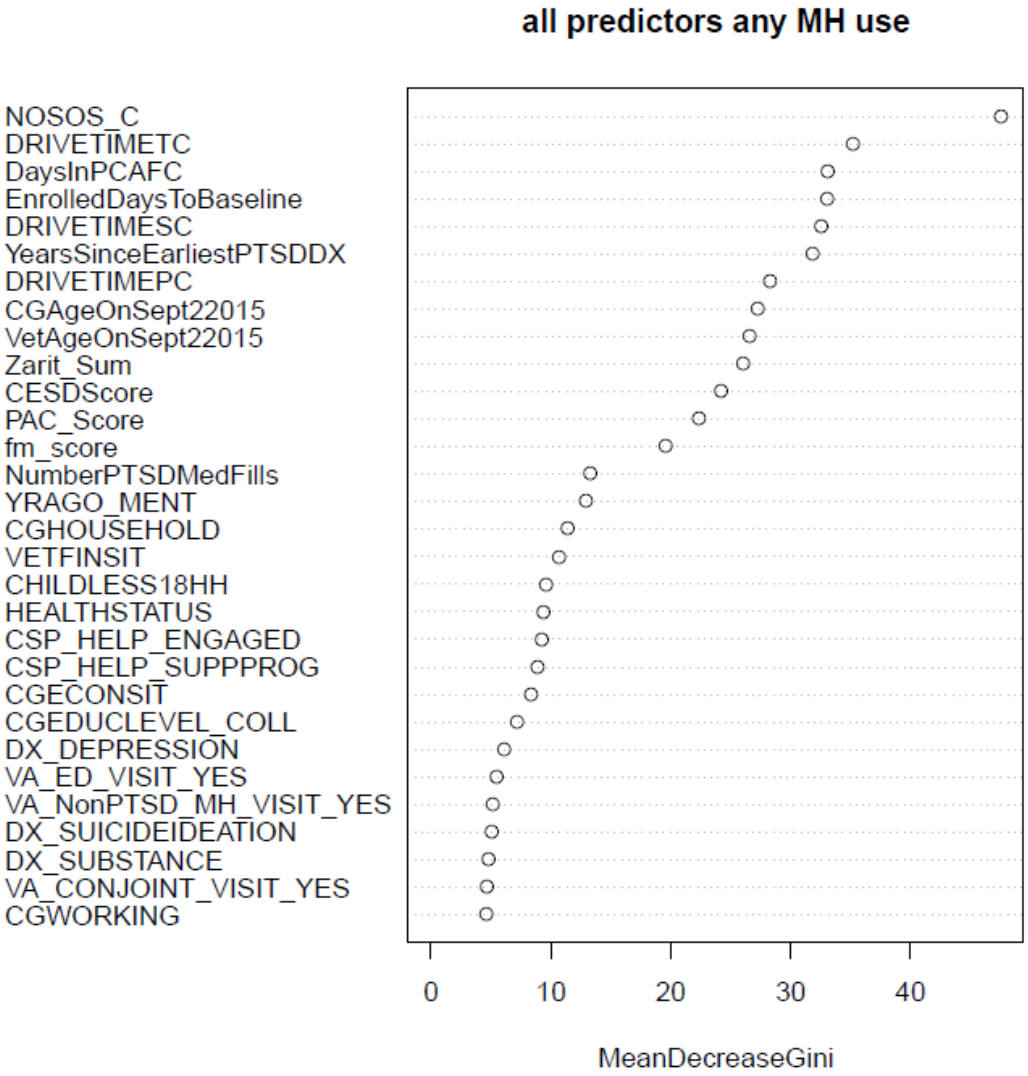
## Single decision tree




## Random forest



# Variable importance plot



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# Drivers of engagement in mental health therapy for PTSD from machine learning models

## Initiation

Higher risk for incurring healthcare costs (Nosos score)

## Adequate dose

SUD dx

ED visit past 12 mo

Medication for PTSD

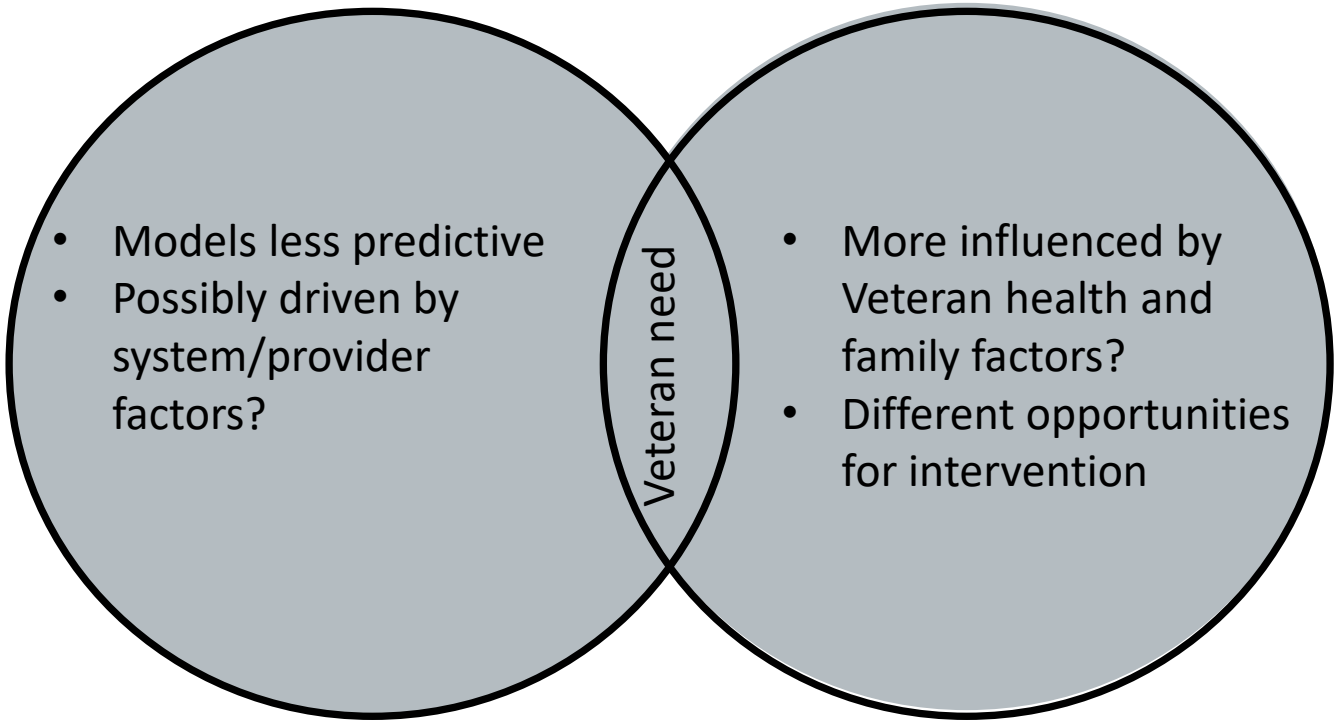
Conjoint therapy

Veteran not married

# Conclusions

**Any** PTSD-related mental health treatment over 2 years

**Adequate** PTSD-related mental health treatment over 2 years



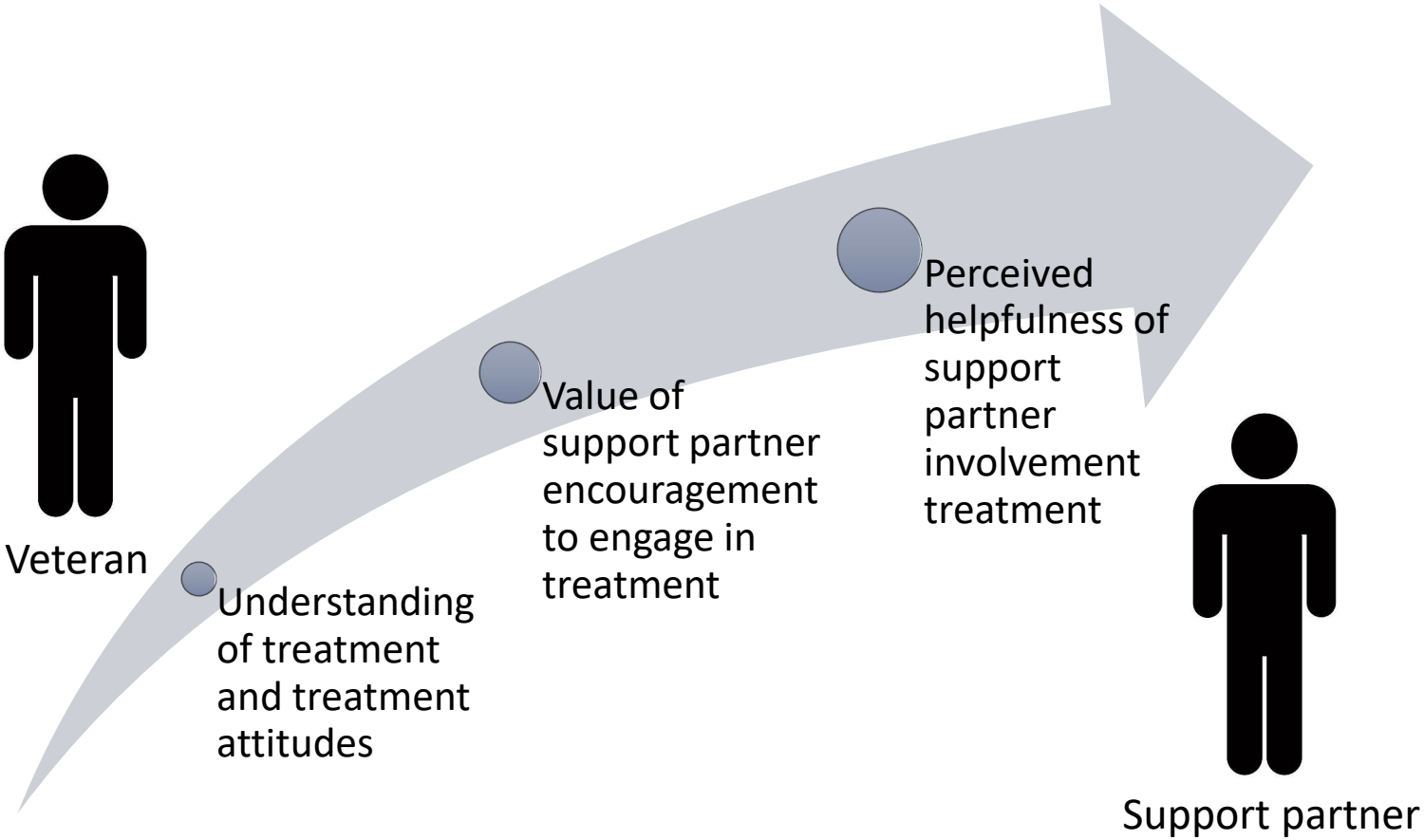
***Qual Research Question***: How do specific predisposing, enabling, need and VA organizational factors promote Veteran engagement in PTSD therapy?

**Procedures**

| | |
|---|---|
| *Sample* | OEF/OIF Veterans referred for PTSD therapy and support partners who applied to the VA Caregiver Support Program PCAFC |
| *Data* | Semi-structured, 30 to 45-minute telephone based interviews with Veterans and support partners (n=18 Veterans; n=13 support partners; 11 complete dyads) |
| *Analysis* | Rapid analysis of themes using Andersen model constructs as structural codes |

Hamilton, 2013

# Interview content & parallel structure



# Participant demographics (n=31)

| | Veteran (n=18) | Support partner (n=13) |
|---|---|---|
| Age | Range 31-57<br>Median=46 | Range: 28-72<br>Median=41 |
| Gender | Female: 50% | Female: 61.5% |
| Race | Caucasian: 27.8%<br>African American: 27.8%<br>Other/mixed: 33.4%<br>No Answer: 5.6% | Caucasian: 30.8%<br>African American: 38.5%<br>Other/mixed: 23:1% |
| Ethnicity | Hispanic: 16.7% | Hispanic: 38.5% |

Predisposing

Positive treatment beliefs of Veteran and family member

Less distinction about impact of traditional predisposing factors

Enabling

Family encouragement and support were key treatment enablers

Martial therapy helped participants to understand PTSD

Economic enabling factors were not salient


Need

PTSD symptoms both promoted and inhibited treatment engagement

Organizational

Negative experiences with VA deterred seeking care at VA

Treatment modalities influenced engagement

Support partners struggled to navigate VA system; CSP helped

Images created by Freepik and the Noun Project

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# PREDISPOSING

## Positive treatment beliefs of Veteran and family member promoted treatment engagement (quote)

- Some family members felt that treatment was needed for Veteran to improve
- Motivation underpinning care seeking also related to Veteran's desire to improve interactions with family (quote)
- Negative treatment attitudes related to negative experiences with treatment in past

"I loved that [10-week evidence-based therapy program]. … I really worked on doing my homework. I learned how to cope with a lot and what to do and realizing that like it's never really going to go away. I just have to learn how to cope better." (Veteran, female)

"My marriage was on the brink, my family, my children. It improved that, and that was important to me." (Veteran, male)

# ENABLING

Family encouragement and support were key treatment enablers (quote)

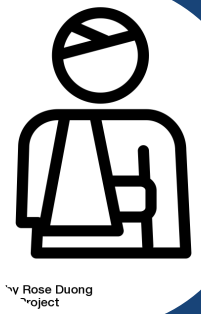
Marital therapy helped Veteran and partner to understand impact of PTSD sx (quote)

Economic enabling factors were not salient

"have someone that I can confide in, trust and actually to assist me with… everything, actually." (Veteran, male)

"We got a good therapist for our marriage counseling … It's helped her to identify where the issue is, rather than just sitting there like—Okay, yeah, I'm mad. But why am I mad—kind of thing." (Spouse, male)

# NEED




PTSD symptoms both promoted and inhibited treatment engagement

"I don't care to socialize with others—I mean, even friends. So to do [PTSD therapy] in a group setting with people that I don't even know was just out of my comfort zone. It gave me a lot of anxiety." (Veteran, female)

# ORGANIZATIONAL

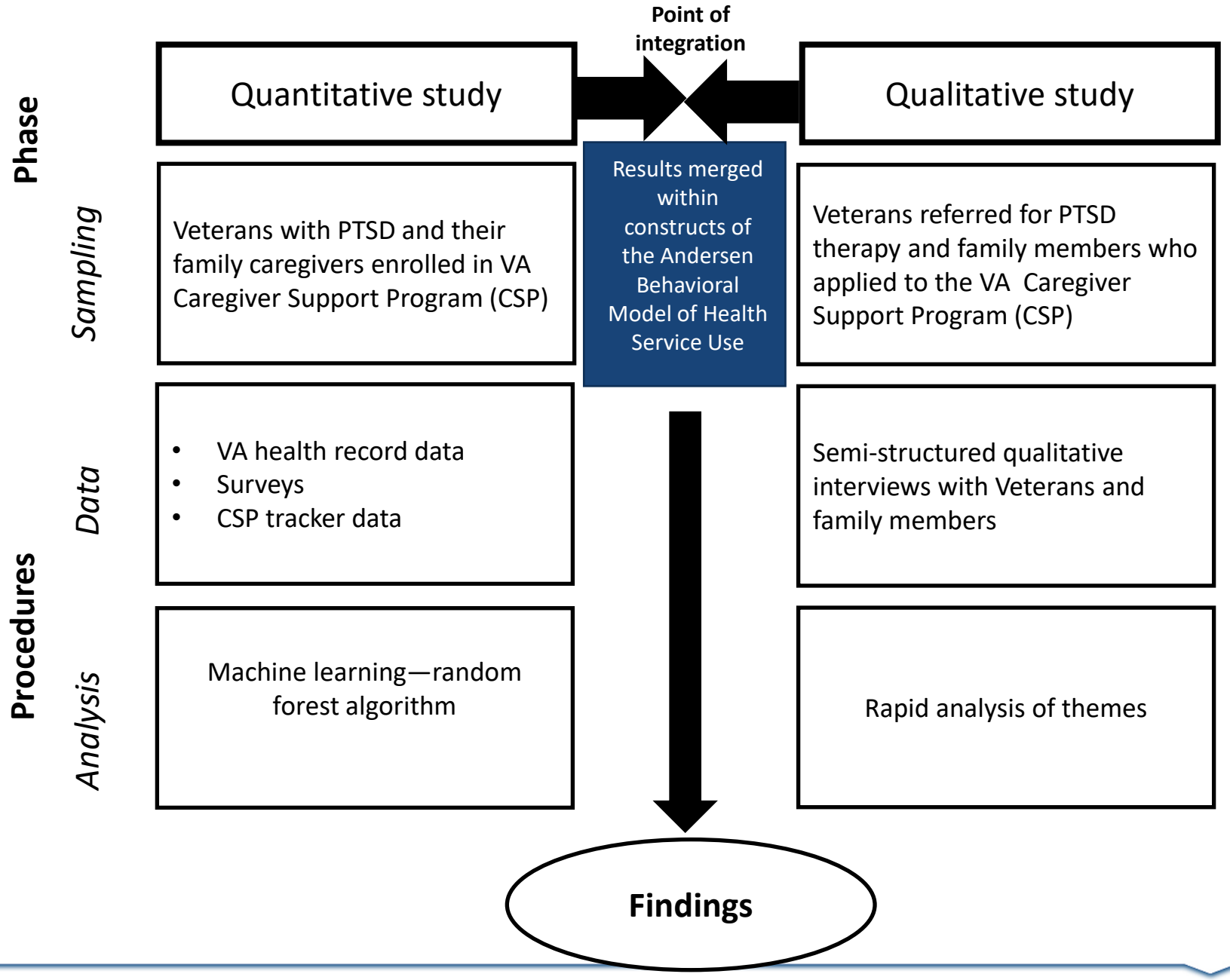
Negative experiences deterred mental health care use; sought care in other settings (quote)

Treatment modality influenced treatment attitudes (CPT vs. PE, individual vs. group, in-person vs. virtual care)

Barriers to navigate VHA; Caregiver Support Program helped support partners to be more involved in Veteran's care (quote)

"There's no continuity of care. So it's like having to constantly start from the beginning, and never really get established with somebody, that is what makes it hard." (Veteran, female)

""I try to be very, very involved in her care because I am her caregiver, because the VA hospital is giving me a stipend. So I like to treat it as a job." (Spouse, male)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# Mixed Methods Research Question

In what ways do the qualitative findings agree or disagree with the most influential factors identified in the quantitative models and how do they provide additional context for understanding how these factors promote engagement in PTSD therapy?

| Theme | Quantitative support? | | Direct qualitative support? |
|---|---|---|---|
| | ***Initiation*** | ***Adequate dose*** | ***Treatment engagement*** |
| **Predisposing** | No | No | Yes<br>Treatment attitudes (positive and negative) |
| **Enabling** | No | Yes<br>-Not married<br>-Ever had marital therapy in VA | Yes, Social<br>-Family encouragement and positive social norms around mental health treatment generally and PTSD therapy specifically<br>No, Economic |
| **Need** | Yes<br>-Higher risk score | Yes<br>-Substance use diagnosis<br>-VA ED visit<br>-Count of PTSD medication refills<br>-Higher risk score | Yes<br>-PTSD symptoms drive initiation; may interfere with adequate dose<br>-Other physical, emotional and cognitive health conditions inhibit treatment engagement |
| **Organizational** | Not assessed | Not assessed | Yes<br>-Veteran perceptions of VA care (positive and negative)<br>-Veteran opinions about specific treatment protocols and delivery and modalities (positive and negative)<br>-Structural barriers for family members |

| Theme | Quantitative support? | | Direct qualitative support? |
|---|---|---|---|
| | *Initiation* | *Adequate dose* | *Treatment engagement* |
| **Predisposing** | No | No | Yes<br>Treatment attitudes (positive and negative) |
| **Enabling** | | | |
| **Need** | | | |
| **Structural** | | | |
| | | | |

Conclusions:

Treatment attitudes were critical, but did not have data to assess in quantitative models. Minimal quantitative support for Veteran demographics factors. However, qualitative data suggests that gender and age may have impacted engagement through life stage (i.e., kids) and negative care experiences related to gender

| Theme | Quantitative support? | | Direct qualitative support? |
|---|---|---|---|
| | ***Initiation*** | ***Adequate dose*** | ***Treatment engagement*** |
| **Predisposing** | | | |
| **Enabling** | No | Yes<br>-Not married<br>-Ever had marital therapy in VA | Yes, Social<br>-Family encouragement and positive social norms around mental health treatment generally and PTSD therapy specifically<br>No, Economic |
| **Need** | | | |

Conclusions:

Qualitative data highlighted the importance of family support for treatment in creating positive social norms. These positive social norms could be associated with participating in marital therapy

| Theme | Quantitative support? | | Direct qualitative support? |
|---|---|---|---|
| | ***Initiation*** | ***Adequate dose*** | ***Treatment engagement*** |
| **Predisposing** | | | |
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Conclusions:

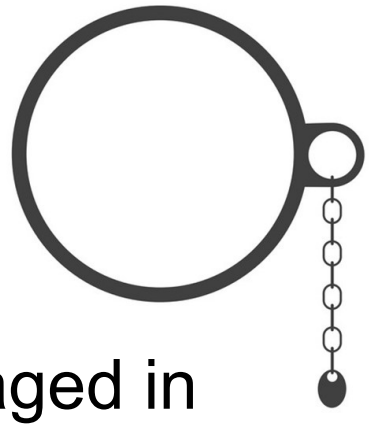
Need was a clear driver within findings from both data sources. Per qualitative data, respondents talked about the importance of mental health vs. physical health. Though quantitative findings show that engagement in the system might promote access.

| Theme | Quantitative support? | | Direct qualitative support? |
|---|---|---|---|
| | *Initiation* | *Adequate* | *Treatment engagement* |
| **Organizational** | Not assessed | Not assessed | Yes<br>-Veteran perceptions of VA care (positive and negative)<br>-Veteran opinions about specific treatment protocols and delivery and modalities (positive and negative)<br>-Structural barriers for family members |

## Conclusions

We did not have the data to assess organizational factors in quantitative models, but in qualitative identified organizational barriers and facilitators for both the Veteran and family member

# Considerations and conclusions



- Diverse qualitative sample, but all had engaged in treatment previously
- Drivers of starting and adhering to therapy are not the same—need to address both!
- Important drivers may not be captured by administrative data, mixed methods approach useful
- Family support and social norms matter!
  - More work needed on how family therapy or family-involved interventions might operate as a gateway to improving Veteran engagement in mental health services

Shout out to Laura Meis & Johanna Thomson-Hollands for their work on family and PTSD therapy

# Next steps

| | |
|---|---|
| Dec 2021 | • Submit paper with results December 2021 |
| Mar 2022 | • Complete intervention pilot<br>  • New intervention called FAMILIAR<br>  • Adapted from REORDER<br>  • Currently piloting with 15 dyads at the Durham VA |
| Jun 2022 | • Finalize intervention protocol |
| | • Write up results |

# Thank you to the team

## Mentors

- Courtney Van Houtven
- Shirley Glynn
- Patrick Calhoun
- Barbara Bokhour
- David Edelman
- Princess Ackland
- Valerie Smith
- Jennifer Wisdom
- Advisory Board

## Study team

- Hollis Weidenbacher
- Madeleine Eldridge
- Abigail Shapiro
- Margaret Falkovic
- Karen Stechuchak
- John Pura
- Kate Sheahan

## Intervention development team

- Margaret Falkovic
- Eric Dedert
- Cindy Swinkels
- Stephanie Wells
- Princess Ackland

*Coding support from Ted Berkowitz

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# Acknowledgements

**VA HSR&D *CDA 17-006***

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# Thank you

For additional questions/slides, please send me an email:
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