

# **Service Utilization among Iraq and Afghanistan Veterans Screening Positive for Traumatic Brain Injury**

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# **SERVICE UTILIZATION AMONG IRAQ AND AFGHANISTAN VETERANS SCREENING POSITIVE FOR TRAUMATIC BRAIN INJURY**

# Poll Question

- What is your primary role in VA?
  - Clinician
  - Researcher
  - Student, trainee, or fellow
  - Manager or policy-maker
  - Other



# Traumatic Brain Injury

- Traumatic brain injury (TBI) is the leading injury among US OEF/OIF troops
  - Mild TBI (mTBI) injuries comprise vast majority
- Up to 1/3 of patients may experience persistent cognitive, emotional, behavioral, and physical symptoms



# Service Utilization



- Few studies examine service utilization among patients with TBI
  - 40-81% of civilians with TBI utilize medical services
- Only one VA study examining outpatient health service for TBI
- Veterans with mTBI:
  - More visits compared to those with moderate or severe TBI (sTBI)
  - More overall visits

# The Present Study

- Gap in literature: specific postconcussive symptoms driving patterns of healthcare use
- Goals
  - Compare mental health outpatient, primary care, and emergency care service utilization
  - Describe associations between particular TBI-related symptoms and health service utilization



# Methods

- VA administrative data
  - VA Corporate Data Warehouse: responses to VA TBI screen
  - Veterans Health Information Systems and Technology Architecture: Iraq and Afghanistan Post-Deployment Screen
  - VA OEF/OIF Roster Database: demographic information, military service information



# Participants

- 1,746 OEF/OIF Veterans
  - Screened for TBI at one VA medical center and/or five affiliated VA community-based outpatient clinics between 4/1/2007 – 6/1/2010
  - Follow-up appointment data extracted from the date of TBI screen through 2/17/2011



# Measures

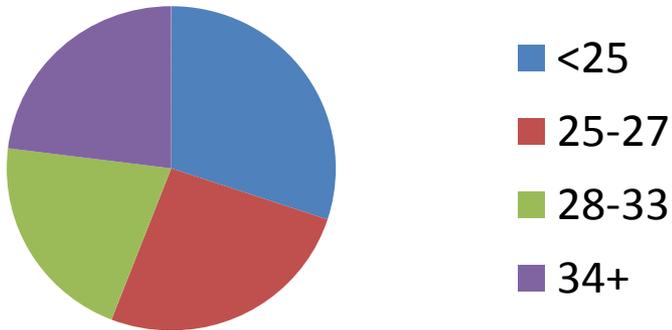
- **VA clinic codes:** service utilization
- **VA TBI screen:** five-section tool modified from Brief TBI screen
- **Primary Care Posttraumatic Stress Disorder Screen:** four-item screen designed to detect a PTSD diagnosis
- **Patient Health Questionnaire-2 (PHQ-2):** two-item depression screen
- **Alcohol Use Disorders Identification Test Consumption (AUDIT-C):** alcohol misuse



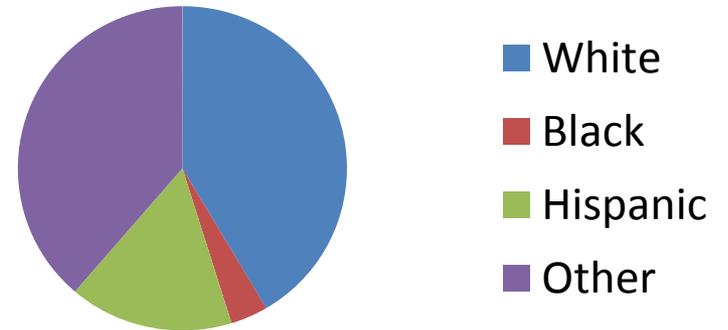
# Demographics

S-TBI+: 27% ( $n=465$ )

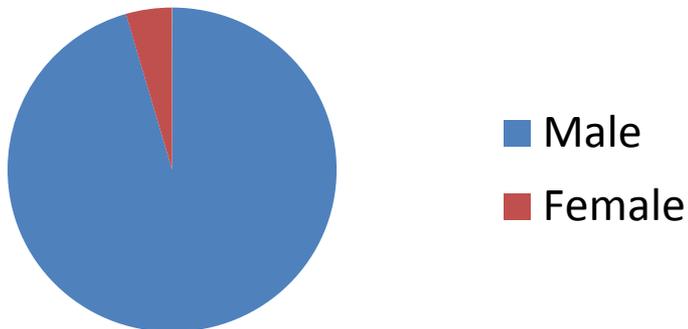
## Age



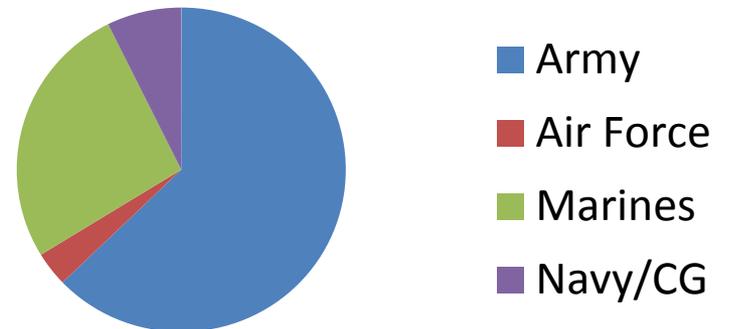
## Race



## Sex



## Branch

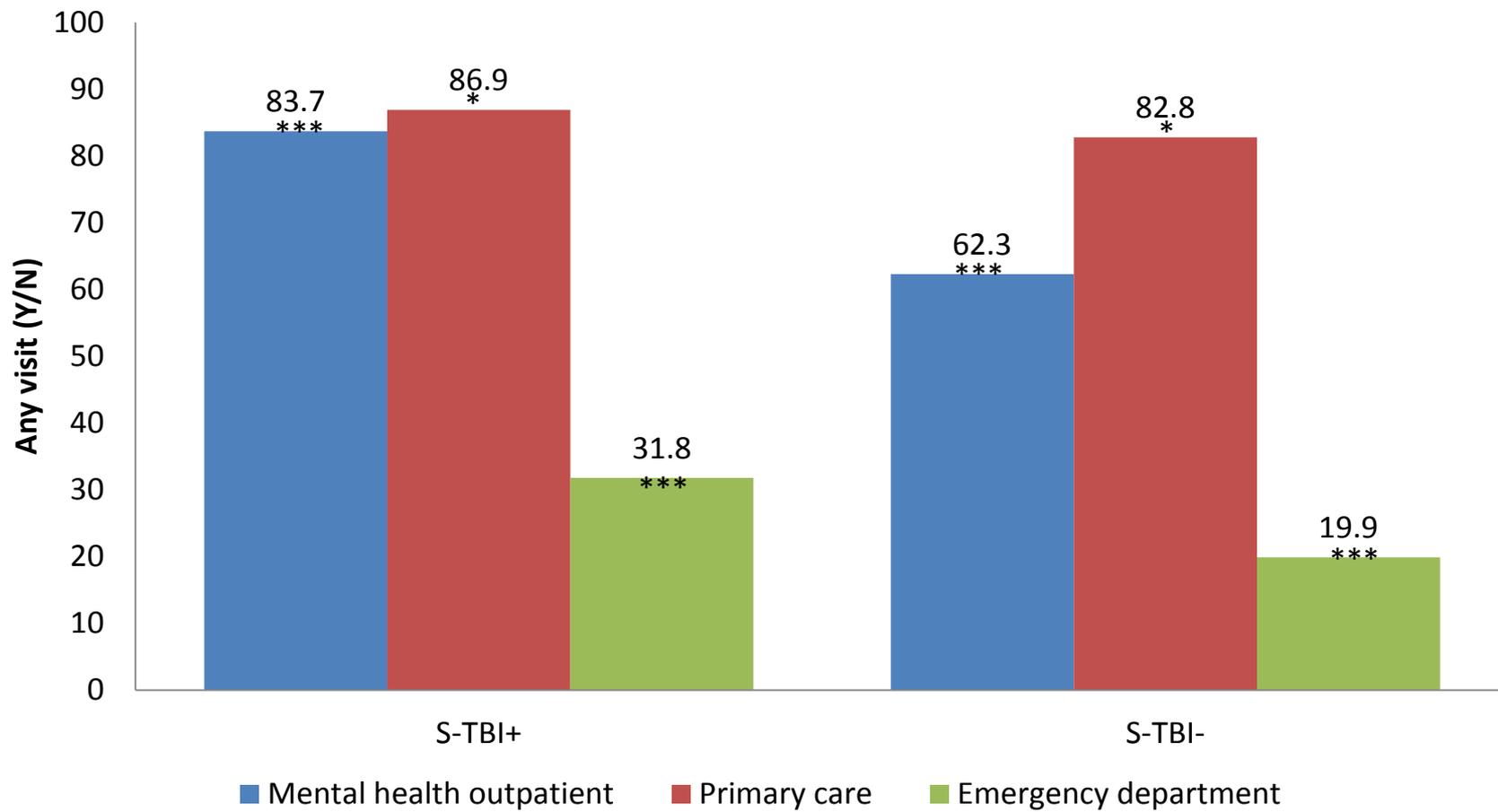


# Results

- 27% S-TBI<sup>+</sup>
- Veterans who screened positive for TBI were more likely to be
  - Younger than 25
  - Male
  - Of active duty service
  - Of enlisted rank
  - In the Army
  - Have served multiple deployments



# Service utilization among 1,746 OEF/OIF Veterans screened for TBI between 4/1/2007 – 6/1/2010

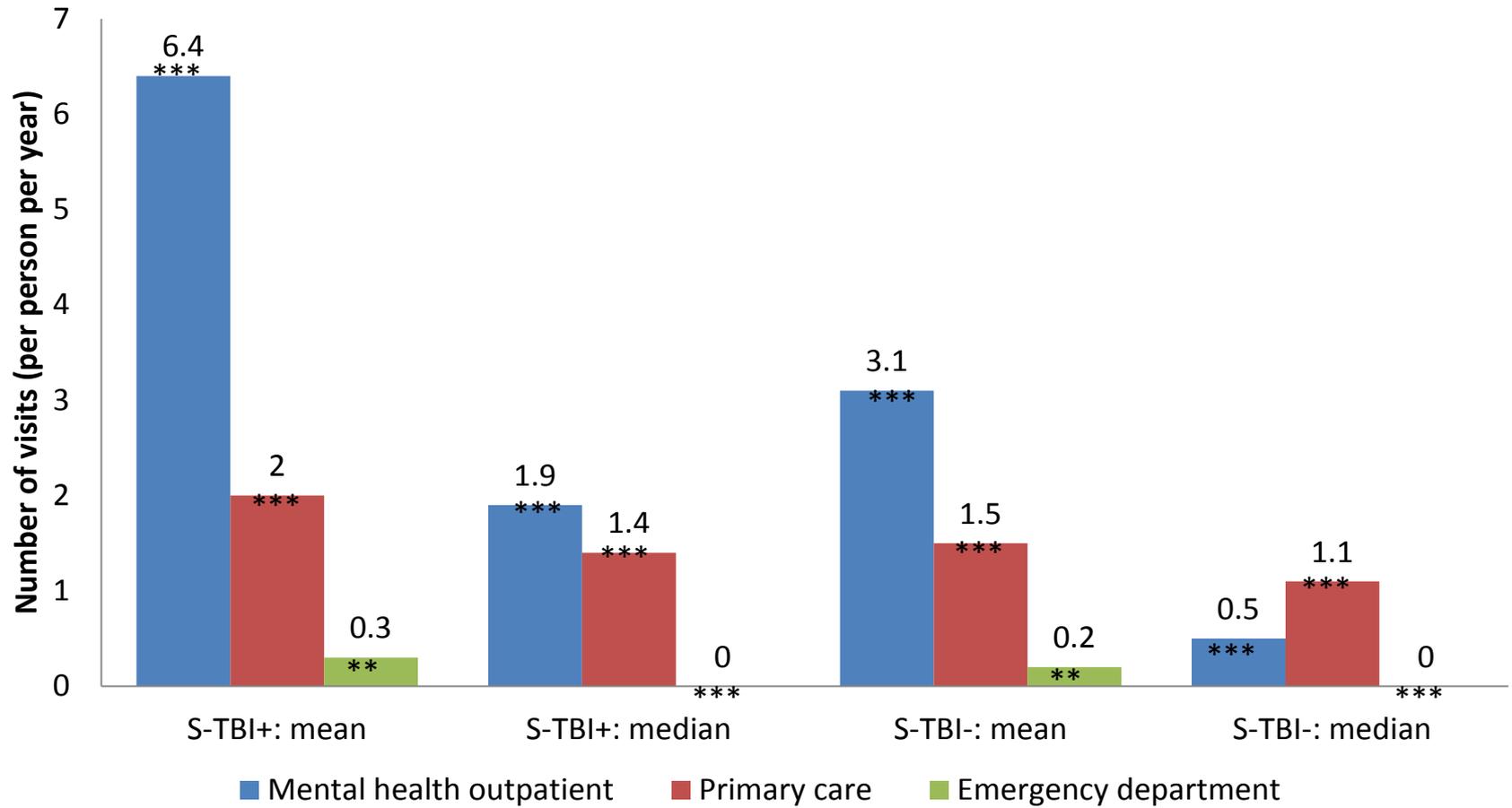


\*  $p < 0.05$

\*\*  $p < 0.001$

\*\*\*  $p < 0.0001$

# Service utilization among 1,746 OEF/OIF Veterans screened for TBI between 4/1/2007 – 6/1/2010

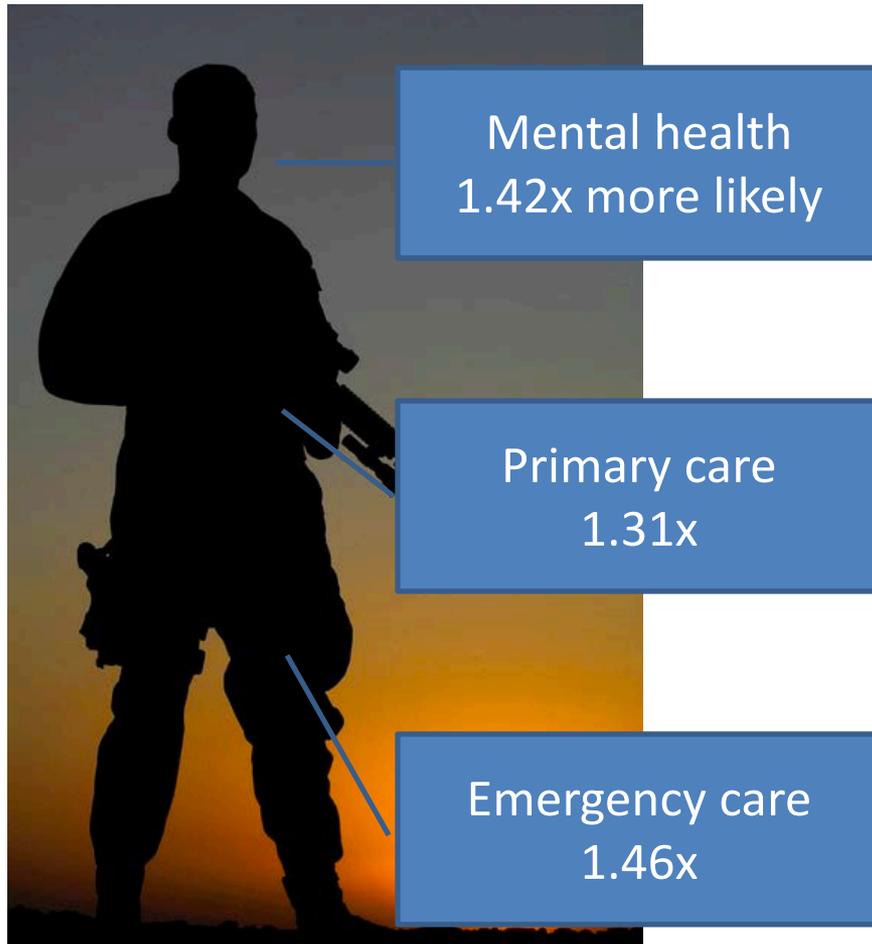


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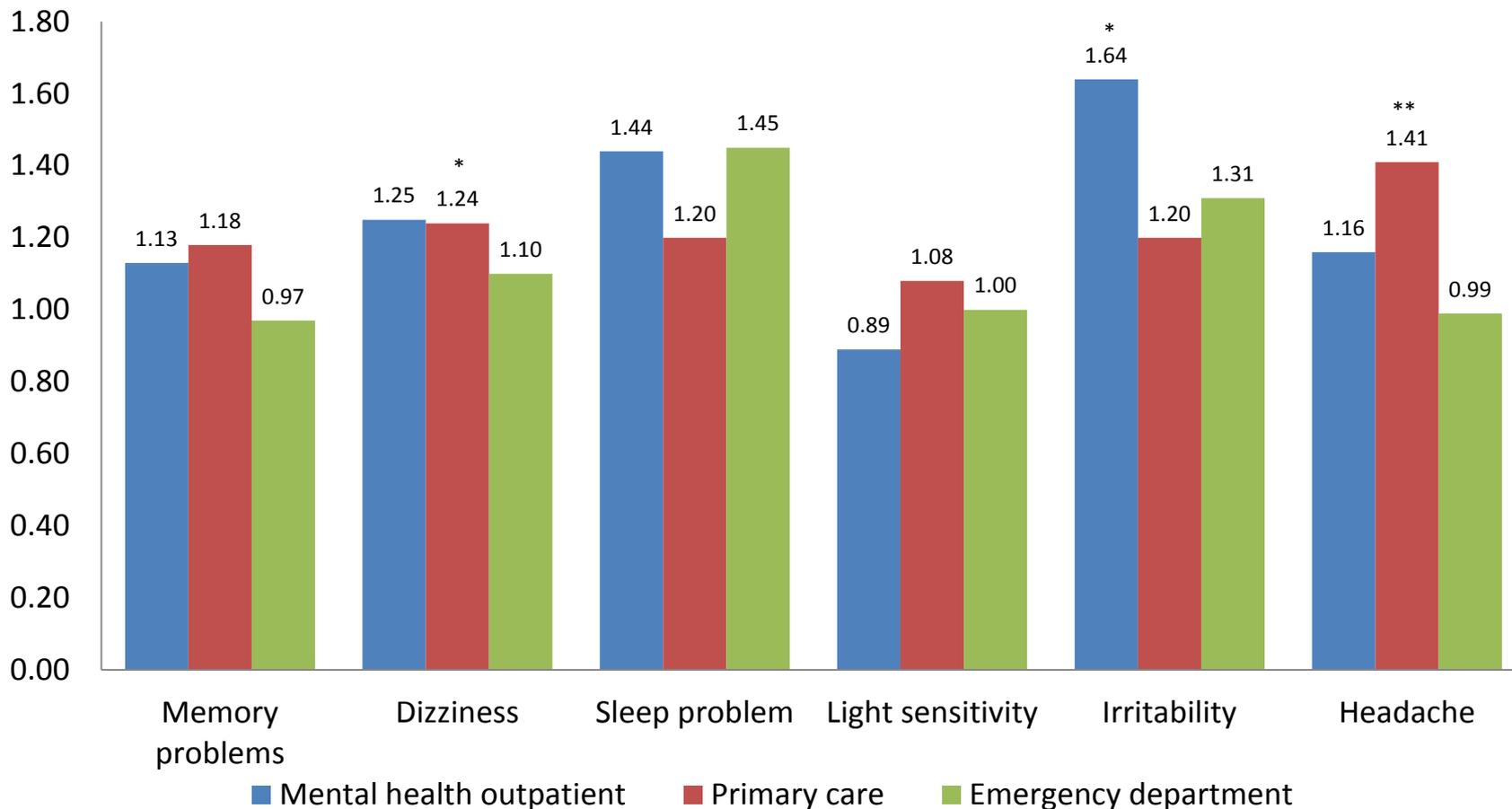
# Results



Compared to S-TBI<sup>-</sup>, S-TBI<sup>+</sup> more likely to have

- At least one VA outpatient visit
- Greater number of visits/person across all three service categories

# Rate ratios of service utilization by current symptoms among 465 S-TBI<sup>+</sup> Veterans



\*  $p < 0.05$       \*\*  $p < 0.001$

*Incidence rate ratios, adjusted for gender, age, race, marital status, component type, rank, service branch, multiple deployment, closest VA facility type, time between last deployment and TBI screen, results on the post-traumatic stress disorder, depression, and alcohol misuse screens, and time in VA system since initial TBI screen.*

# Discussion

- S-TBI<sup>+</sup> utilize health care services to a greater extent
  - Preparation for higher rates of utilization among S-TBI<sup>+</sup> on a national level
  - Understanding of particular clinical presentations





# Discussion: symptoms

## Irritability

- Linked to mental health services
- Persists over time
- Shared symptom with PTSD among OEF/OIF veterans
- Better management of irritability within integrated care may reduce MH service utilization
  - E.g. brief, anger self-management treatment for TBI

## Dizziness and Headaches

- Linked to primary care services
- Most frequently reported post-injury symptoms
- Distinguishing symptoms that do not overlap with other MH problems

Can symptoms of TBI be ameliorated by implementing EBTs in integrated care?

# Discussion

- Within the VA, TBI+ veterans receive a second-level comprehensive TBI evaluation
  - Can be used to determine appropriateness for TBI symptom management within integrated care



# Limitations



- TBI and MH screen results, used in this study, are different than confirmed diagnoses
- Not all screens were necessarily done at the same time
  - Done within year of each other
  - May have occurred several years post-deployment
- Results from one VA and associated CBOCs
- Positive TBI screens do not trigger referral to other service clinics

# Conclusions

- Future studies should replicate these findings among national samples
- Certain symptoms' association with increased utilization will help better plan for care of veterans who screen positive for TBI



Questions? Comments?

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## **Thank you**

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