



## **A retrospective cohort study of comorbidity trajectories associated with traumatic brain injury in veterans of the Iraq and Afghanistan wars**

### **Purpose**

To identify and validate trajectories of comorbidity associated with traumatic brain injury in male and female Iraq and Afghanistan war Veterans (IAV)

### **Participants**

Derivation and validation cohorts were compiled of Iraq and Afghanistan war Veterans who entered the Department of Veterans Affairs (VA) care and received 3 years of VA care between 2002–2011.

### **How was the study conducted?**

Chronic disease and comorbidities associated with deployment including TBI were identified using diagnosis codes. A latent class analysis (LCA) of longitudinal comorbidity data was used to identify trajectories of comorbidity.

### **Findings**

LCA revealed five trajectories that were similar for women and men: (1) Healthy, (2) Chronic Disease, (3) Mental Health, (4) Pain and (5) Polytrauma Clinical Triad (PCT: pain, mental health and TBI). Two additional classes found in men were 6) Minor Chronic and 7) PCT with chronic disease. Among these gender-stratified trajectories, it was found that women were more likely to experience headache (Pain trajectory) and depression (Mental Health trajectory), while men were more likely to experience lower back pain (Pain trajectory) and substance use disorder (Mental Health trajectory). TBI was most common in PCT-related trajectories, indicating that TBI is commonly comorbid with pain and mental health conditions for both men and women. Additional 'big data' methods and a longer observation period may allow the development of predictive models to identify individuals with TBI that are at-risk for adverse outcomes.

### **Military Impact**

The relatively young age of this cohort raises important questions regarding how disease burden, including the possibility of neurodegenerative sequelae, will accrue alongside normal age-related decline in individuals with TBI.

*Pugh MJ, Finley EP, Wang CP, Copeland LA, Jaramillo CA, Swan AA, Elnitsky CA, Leykum LK, Mortensen EM, Eapen BA, Noel PH. A retrospective cohort study of comorbidity trajectories associated with traumatic brain injury in veterans of the Iraq and Afghanistan wars. Brain injury. 2016 Oct 14;30(12):1481-90.*

