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# Veterans Affairs TBI Model System Newsletter

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Issue 1

## What is Traumatic Brain Injury Model Systems?

### “Development of a Traumatic Brain Injury Model System Within the Department of Veterans Affairs Polytrauma System of Care”

Greg Lamberty, Risa Nakase-Richardson, Leah Farrell-Carnahan, and colleagues (2014).

The VA Polytrauma Rehabilitation Center (PRC) Traumatic Brain Injury Model System (TBIMS) is a longitudinal multi-center research program that examines the recovery course and outcomes of veterans and active duty military with TBI following comprehensive inpatient rehabilitation. The goal of TBIMS is to conduct research that contributes to evidence-based rehabilitation interventions and practice guidelines that improve the lives of individuals with TBI.

Currently, there are five VA flagship hospitals designated as PRCs. As leaders of research innovation and clinical service in polytrauma (TBI and traumatic injuries to other bodily organs and systems), these five PRCs each participate in TBIMS. These flagship VA hospitals are located in Minneapolis, Minnesota, Palo Alto, California, Richmond, Virginia, San Antonio, Texas, and Tampa Florida. The work collaboratively to contribute to the knowledge base on TBI recovery and outcome.

Individuals who are seen at one of the PRCs for inpatient rehabilitation following a mild, moderate, or severe TBIs are eligible for study participation. The study includes individuals with combat and non-combat related TBIs. As a longitudinal study, we are

especially interested in the impact of TBI on individuals' lives across the lifespan. To better understand the medical, psychological, and social impact of TBI, we follow up with our participants every few years.

As of March 2014, there have been 541 individuals with TBI enrolled in the VA PRC TBIMS across all PRCs. We have reached 25% of our goal of enrolling 2000 in the study. During 2013, our researchers have expanded the research knowledge of TBI rehabilitation through numerous publications of scientific articles and presentations at national meetings. For more information on the research being conducted by TBIMS,



# Research Spotlight

## **“Functional Outcomes in Traumatic Disorders of Consciousness: 5-Year Outcomes From the National Institute on Disability and Rehabilitation Research Traumatic Brain Injury Model Systems”**

**John Whyte, Risa Nakase-Richardson, Flora Hammond, and colleagues (2013).**

The National Institute on Disability and Rehabilitation Research (NIDRR) TBI Model System Programs presents the Mitchell Rosenthal Award for the “Best Scientific Publication” using the NIDRR-funded TBI Model System National Database. This past year, 14 publications were reviewed and this highlighted study received the award. Among its authors was Principal Investigator, Risa Nakase-Richardson.

The study sought to characterize the 5-year outcomes of patients with TBI who were unable to follow commands at the time of admission to inpatient rehabilitation. The patients were divided into two groups, those who regained command-following during their acute inpatient rehabilitation and those who did not.

Over time, 7% to 21% of the patients who regained command-following during inpatient rehabilitation were independent in some areas of self care such as using a wheelchair, bed/chair transfers, and eating. This group saw gains at one, two, and five years after injury. By year five, independent functioning ranged from 56% to 85%. The greatest proportion of patients achieved bed/chair transfers independently; whereas, the smallest proportion of patients achieved bathing before hospital discharge.

Among the patients who did not regain command-following, none were independent in any functional domain before rehabilitation. After one year post-injury, the rate of independence increased to 20%. After five years, 19% to 36% of patients were independent; however, 31% to 69% participated in functional tasks to some degree.

Overall, those patients who began to improve during inpatient rehabilitation continued to recover for at least two more years. Patients who failed to show early improvements had a longer recovery and 30% to 70% remained completely dependent in specific areas of self care such as at five years post-injury.

## Inside this Issue

What is TBIMS?.....	pg 1
Research Spotlight.....	pg 2
What Are We Publishing?.....	pg 2
Researchers on the Move.....	pg 2
Meet the Staff.....	pg 3
From Research to Practice.....	pg 3
What can be done to improve sleep?.....	pg 3
Resources.....	pg 4
Contact Us.....	pg 4

## What Are We Publishing?

VA PRC TBIMS collaborators have recently published several articles in the 2013 volume of the journal *Archives of Physical Medicine and Rehabilitation*.

Highlights include:

### **“Disorders of consciousness: Outcomes, comorbidities, and care needs”**

John Whyte & Risa Nakase-Richardson

### **“Do rehospitalization rates differ among injury severity levels in the NIDRR TBI Model Systems Program?”**

Risa Nakase-Richardson, Mark Sherer, Scott Barnett, and colleagues.

### **“Descriptive Characteristics and Rehabilitation Outcomes in Active Duty Military Personnel and Veterans with Disorders of Consciousness With Combat- and Non-Combat- Related Brain Injury”**

Risa Naskase-Richardson, Shane McNamee, Laura L. S. Howe, and colleagues

## Researchers on the Move...

The researchers presented a number of oral talks and posters at the American Congress of Rehabilitation Medicine Annual Conference held in Orlando, FL, November 2013. Highlights include:

### **“The VA PRC Traumatic Brain Injury Model System Program”**

Suzanne McGarity, Risa Nakase-Richardson, Greg Lamberty, and colleagues

### **“Post-Deployment Polytrauma: What’s the problem and how should we treat it?”**

Rodney Vanderploeg, Joel Scholten, Nina Sayer, and colleagues

### **“Feasibility of Polysomnography Objective Sleep Assessment in the Acute Moderate to Severe Traumatic Brain Injury Patient”**

Risa Nakase-Richardson, Daniel Schwartz, Marissa McCarthy, Tracy Kretzmer, and colleagues

# From Research to Practice

## “Prospective Evaluation of the Nature, Course, and Impact of Acute Sleep Abnormality After Traumatic Brain Injury”

**Risa Nakase-Richardson, Mark Sherer, Scott Barnett, and colleagues (2013)**

This study sought to characterize the prevalence, course, and impact of acute sleep abnormality among TBI neurorehabilitation admissions. This topic is of importance because there is a high prevalence of sleep disturbance following TBI.

The researchers found that there was a steady decline in the percent of patients with moderate to severe sleep disorganization with the passage of time. At one month postinjury, 67% of patients rated various levels of sleep abnormality, with 39% reporting moderate to severe sleep disorganization/absence of sleep.

Sleep disturbance affects a variety of areas of the patient's life. Those patients with moderate/severe sleep disturbance tended to stay in the hospital longer than patients with mild/no sleep disturbance. Additionally, patients with moderate/severe sleep disturbance also had longer posttraumatic amnesia (i.e., confusion and disorientation following a TBI) compared to patients with mild/no sleep disturbance.

## What can be done to improve sleep?

### Daytime Suggestions

- Try to wake up at the same time every day.
- Have meaningful activities in your daily schedule.
- Get outdoors for sunlight during the daytime.
- Don't nap more than 20 minutes during the day.

### Nighttime Suggestions

- Go to bed at the same time every night.
- Follow a bedtime routine. For example, put out your clothes for morning, brush your teeth and then read or listen to relaxing music for 10 minutes before turning out the light.
- Avoid caffeine, nicotine, alcohol and sugar for 5 hours before bedtime.
- Avoid eating prior to sleep to allow time to digest, but also do not go to bed hungry
- Do not exercise within two hours of bedtime but stretching or meditation may help with sleep.
- Do not eat, read or watch TV while in bed.
- Create a restful atmosphere in the bedroom, protected from distractions, noise, extreme temperatures and light.



## Meet the Staff

### Dr. Marc A. Silva

#### 1. What inspired you to become a part of the TBI Model System?

The TBI Model System program is unique in its longitudinal multi center design and exceptional scientific rigor. The information we learn about individuals with TBI will help doctors and scientists better treat the medical, psychological, and social complications that impact the lives of those living with TBI.

#### 2. How do you think your background has helped you contribute to the TBI Model System?

My predoctoral and postdoctoral training in neuropsychology emphasized brain injury rehabilitation. Though my training, I assisted veterans and active duty service members at various stages of recovery, through our inpatient, transitional, and outpatient rehabilitation programs. I have focused my clinical and research training to better understand the consequences of brain injury on cognition to better assist individuals with brain injury during their recovery.

#### 3. What do you hope to accomplish with the TBI Model System in the future?

By reaching out to individuals with TBI, hearing their stories, gathering information on their symptoms, life circumstances, and aspects of their rehabilitation, my hope and belief is that this data will be used to improve their quality of life.

# Resources

## External Resources

### Brain Injury Association of America

Phone: 703-761-0750

Brain Injury Information Only: 1-800-444-6443

Website: [www.biausa.org](http://www.biausa.org)

### Brain Injury Association of Florida

Toll-Free: 800-992-3442

Phone: 850-410-0103

Email: [biaftalla@biaf.org](mailto:biaftalla@biaf.org)

Website: [www.biaf.org](http://www.biaf.org)

### Brainline.org

Phone: 703-998-220

Email: [info@brainline.org](mailto:info@brainline.org)

Website: [www.brainline.org](http://www.brainline.org)

### Family Caregiver Alliance

Phone: 1-800-445-8106

Website: [www.caregiver.org](http://www.caregiver.org)

### Defense and Veterans Brain Injury Center

Crisis Intervention: 1-800-273-8255

National Headquarters: 1-800-870-9244

DVBIC Information and Referral: 1-866-966-1020

Website: [www.dvbic.dcoe.mil](http://www.dvbic.dcoe.mil)

## Educational Resources

### Facts about Concussion and Brain Injury:

#### Where to get Help

[http://www.cdc.gov/concussion/pdf/Facts\\_about\\_Concussion\\_TBI-a.pdf](http://www.cdc.gov/concussion/pdf/Facts_about_Concussion_TBI-a.pdf)

### National Institute of Neurological Disorders and Stroke Traumatic Brain Injury Information Page

<http://www.ninds.nih.gov/disorders/tbi/tbi.htm>



## Who's Who in VA PRC TBI Model System?

### Minneapolis Polytrauma Rehabilitation Center

Gregory Lamberty, Ph.D.  
Principal Investigator

### Richmond Polytrauma Rehabilitation Center

Leah Farrell-Carnahan, Ph.D.  
Principal Investigator

### Tampa Polytrauma Rehabilitation Center

Risa Nakase-Richardson, Ph.D.  
Principal Investigator

### Palo Alto Polytrauma Rehabilitation Center

Laura Howe J.D., Ph.D.  
Principal Investigator

### San Antonio Polytrauma Rehabilitation Center

Mary Jo Pugh, Ph.D.  
Principle Investigator

## Contact Information

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### Veteran's Crisis Hotline:

1-800-273-8255 (Press 1)

### Risa Nakase-Richardson, Ph.D.

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