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**MILD TRAUMATIC BRAIN INJURY REHABILITATION TOOLKIT**

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# Foreword

I am pleased to present this volume, entitled *Mild Traumatic Brain Injury Toolkit*, published by the Army Medical Department's Borden Institute. The Borden Institute is the primary outlet for scholarly and peer-reviewed publications by the healthcare providers who take care of our nation's Service Members and Veterans. The Institute's publications do not necessarily represent Army doctrine or the opinion of the Department of Defense (DoD) or the Army; nevertheless, they represent the best work of our providers as they seek to inform future policy and decision-making.

More than a decade of war has underscored the incidence of a common injury that can occur both on and off the battlefield—mild traumatic brain injury (mTBI), also known as concussion. Concussions can occur due to blast events, motor vehicle crashes, training accidents, falls, sports, and general mishaps. Through research, policy, widespread education, and provider training, the Army is working diligently to ensure that those diagnosed with concussion are promptly identified and treated to maximize their recovery.

Rehabilitation professionals provide significant contributions to the recovery, rehabilitation, and reintegration of Service Members who are symptomatic after sustaining an mTBI. In September 2007, the Proponency Office for Rehabilitation and Reintegration (now the Rehabilitation and Reintegration Division) and the Army TBI program lead within the Office of The Surgeon General charged a team of occupational therapists (OTs) and physical therapists (PTs) to develop clinical guidance for state-of-the-art rehabilitative care for post-concussive Service Members.

Civilian and military OTs and PTs collaborated with speech language pathologists to perform a critical review of research and clinical rehabilitation practices in the assessment, treatment, and management of concussions from point of injury to extended rehabilitative care. Rehabilitation subject matter experts from DoD, the Department of Veterans Affairs, and the civilian sector fully support the resultant Clinical Management Guidance and Toolkit for Rehabilitation Professionals.

In parallel, the rehabilitation community has developed and begun testing a new tool, the Combat Readiness Check (CRC). This tool provides additional objective and reliable data about Service Members' safety and readiness to return to duty after a concussion. The CRC is a compilation of existing instruments and a dual-task test that has undergone clinical applicability testing.

Research is still needed in every area of practice—presenting opportunities to advance outcomes—for Service Members and civilians alike. We invite your comments so future initiatives can meet the greatest need for the largest number of Service Members.

Army Medicine heartily thanks all those involved in this project for their outstanding and tireless commitment to excellence and is proud to add this publication to the scientific body of knowledge. And we are, as ever, Serving to Heal . . . Honored to Serve!

Patricia D. Horoho  
Lieutenant General, US Army  
The Surgeon General and  
Commanding General,  
US Army Medical Command

Washington, DC  
December 2014



# Preface

The wars in Iraq and Afghanistan—Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF)—have mobilized the military and civilian medical and rehabilitation communities to identify best practices in the care of service members with mild traumatic brain injury (mTBI)/ concussion. In September 2007, leaders in the Rehabilitation and Reintegration Division at the Army Office of the Surgeon General charged a team of two occupational therapists and three physical therapists (two military and three civilians) to develop occupational therapy (OT) and physical therapy (PT) clinical practice guidance for mTBI in order to help establish, “...state-of-the-art rehabilitative care for Soldiers with mild traumatic brain injuries...[by] completing a critical review of current research and clinical rehabilitative care practices in the assessment, treatment and management of mild TBI at all levels of care (from acute theater to long term life care).” An mTBI guidance document for speech language pathologists (SLPs) was subsequently developed by a team of Department of Defense (DoD), Veterans Affairs (VA), and civilian clinicians. These foundational guidance documents and the contributions of many DoD, VA, and civilian PTs, OTs, and SLPs resulted in this *Mild Traumatic Brain Injury Rehabilitation Toolkit*. As authors and editors who contributed to the guidance documents and Toolkit, we envision that this will be a “work in progress,” given the extraordinary advancement in the research and rehabilitation arenas since our work began. The explosion of new research will continue to enhance our recognition and understanding of the effects of single or multiple concussions on service members and civilians alike, and the important contribution of rehabilitation clinicians in treating and measuring progress as service members recover from mTBI.

Margaret Weightman



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Many people provided critical assistance and guidance for the development of the Rehabilitation Toolkit. LTC(Ret) Lynne Lowe, COL(Ret) Barbara Springer, COL(Ret) Mary Erickson, LTC Sarah Goldman, COL Nikki Butler of the Rehabilitation and Reintegration (R2D) Division (Office of The Surgeon General) identified the need for the Toolkit, consulted on its contents, and offered essential feedback throughout the development process. Ms Diane Flynn crafted the content of the initial version 1 of the OT/PT Toolkit into a format that is readable and consistent and we appreciate this contribution to the project.

Additionally, we gratefully recognize the experts who provided either in-process feedback or who reviewed the final draft of Toolkit sections, including the following individuals: Eleanor Avery, MD (Brooke Army Medical Center, San Antonio, TX); Micaela Cornis-Pop, PhD, CCC-SLP (VA Medical Center, Richmond, VA); Kim Gottshall PhD, PT, ATC (Naval Medical Center, San Diego, CA); Mary RT Kennedy, PhD, CCC-SLP (University of Minnesota, Twin Cities, MN); Lisa Leininger, PT (Courage Kenny Rehabilitation Institute—Abbott Northwestern Hospital, Minneapolis, MN); Imelda Llanos, OTR/L (James A Haley VAMC, Tampa, FL); Nan Musson, MA, CCC-SLP (VA Medical Center, Gainesville, FL); Michelle D Peterson PT, DPT, NCS (VA Medical Center, Minneapolis, MN); MAJ Matthew Scherer, PhD, PT, NCS (Andrew Rader US Army Health Clinic, Ft Myer, VA); McKay Moore Sohlberg, PhD, CCC-SLP (University of Oregon, Eugene, OR); Lyn Turkstra, PhD, CCC-SLP (University of Wisconsin-Madison); Megan Vaught, PT, ScD OCS (Sister Kenny Sports and Physical Therapy Center, Minneapolis, MN); Deborah Voydetich OTR/L (VA Medical Center, Minneapolis, MN); and Orli Weisser-Pike, OTR/L, CLVT, SCLV (Hamilton Eye Institute, Memphis, TN).

We also gratefully acknowledge the individuals who contributed to the development and review of the Clinical Management Guidance: Occupational Therapy and Physical Therapy for Mild Traumatic Brain Injury (Appendix A) and the SLP Clinical Management Guidance for Cognitive-Communication Rehabilitation for Service Members and Veterans with Concussion/Mild Traumatic Brain Injury (Appendix B).

We greatly appreciate the critical assistance of our partners at the Courage Kenny Research Center, especially Roberta Jordan; Jenica Domanico, MAOT; and Michelle Pose, MAOT. We also recognize the important contributions of the team at the Borden Institute to this effort, especially Ronda Lindsay.

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We are grateful for the opportunity to help advance physical and occupational therapy and speech-language pathology practices and outcomes for Service members with c/mTBI.

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