Center for Research and Innovation – Transforming Traumatic Brain Injury Care Across the Lifespan (CRITTICAL): Meeting the Needs of Athletes, Military Personnel, Health Care Consumers, and Their Families

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Submitting Department: Physical Medicine & Rehabilitation (PM&R)

Scientific Focus: Traumatic brain injury (TBI), particularly mild TBI (mTBI) and its co-morbidities are prevalent among athletes, military personnel, and members of the general population. Conservative estimates suggest that 2.5 million TBI’s occur in the United States (US) each year.\(^1\) Moreover, in 2010 the total combined rates of TBI-related hospitalizations, emergency department visits, and deaths was 823.7 per 100,000. These numbers do not include TBIs sustained by US military personnel. Estimates suggest a 15%-22% incidence rate of mTBI among the 2 million US troops deployed to Afghanistan and Iraq since 2001.\(^2-5\) TBI, mild, moderate, and severe, can result in a host of neurological, psychological, sensory, movement, pain-related, cognitive, and neuroendocrine-related sequelae.\(^6\) In addition, understanding regarding the influence of TBI and associated sequelae on inflammatory and neurodegenerative processes are only just emerging. As such, the scientific focus area of TBI represents both a significant public health problem, as well as a gap in current University of Colorado (CU), Anschutz School of Medicine research capabilities. The overarching goal of the proposed Center for Research and Innovation – Transforming Traumatic Brain Injury Care Across the Lifespan (CRITTICAL) will be to integrate and expand the work of experts from diverse backgrounds to evaluate the impact of TBI over the lifespan, with a specific emphasis on distinguishing between the paths from TBI to impairment versus recovery. In specific, work will focus on identifying models, mechanisms, and diagnostic and prognostic indicators of both rehabilitation/recovery and pathogenesis, and using this information to develop novel assessment and treatments strategies. Inherent to this process will be “innovative scholarship”, “multidisciplinary collaboration”, “faculty teamwork”, and “training opportunities”. Potential CRITTICAL PIs include:

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References