

## Supplementary Material

**Article Title:** Primary Care Management of Sleep Disturbances Associated with Concussion/Mild Traumatic Brain Injury in Service Members and Veterans

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### **DISCLAIMER**

This Supplementary Material has been provided by the author(s) as an enhancement to the published article. It has been approved by peer review; however, it has undergone neither editing nor formatting by in-house editorial staff. The material is presented in the manner supplied by the author.

**Supplementary Table 1. EWG Members**

| <b>Name</b>              | <b>Service</b>     | <b>Specialty</b>                                  | <b>EWG Small Group</b> |
|--------------------------|--------------------|---|------------------------|
| LTC Vince Capaldi        | Army               | MD, Board Certified Psychiatry/Sleep              | Diagnostics & Outcomes |
| Dr. Michael Jaffee       | CIV                | MD, Board Certified Neurology/Sleep               | Diagnostics & Outcomes |
| Dr. Christine Macdonald  | CIV                | PhD, Professor of Neurological Surgery U Wash     | Diagnostics & Outcomes |
| Dr. Una McCann           | CIV                | MD, Board Certified Psychiatry                    | Diagnostics & Outcomes |
| Dr. Risa Richardson      | VA                 | PhD, Neuropsychology                              | Diagnostics & Outcomes |
| Dr. Laura Bajor          | VA                 | MD, Board Certified Psychiatry                    | Interventions          |
| Dr. Megan Ehret          | CIV                | PharmD, Board Certified Psychiatric Pharmacist    | Interventions          |
| Dr. Gena Glickman        | CIV                | PhD, Professor of Psychiatry & Neuroscience USUHS | Interventions          |
| Daniel Kim               | CTR (serving Navy) | LCSW, CBT specialist                              | Interventions          |
| Dr. Christopher Lettieri | Army (ret)         | MD, Board Certified Pulmonology/Sleep             | Interventions          |
| Maj Matthew Puderbaugh   | AF                 | DO, Primary Care (end user)                       | Interventions          |
| LCDR Kent Werner         | Navy               | MD, Board Certified Neurology/Sleep               | Interventions          |
| Jesse Dedrick            | Army (ret)         | FNP-BC, Primary Care (end user)                   | Management             |
| Dr. Robert Koffman       | Navy (ret)         | MD, Board Certified Psychiatry, CAM specialist    | Management             |
| Miriam Roth              | CTR (TBICoE)       | PA-C, Primary Care, (end user)                    | Management             |
| Dr. Emerson Wickwire     | CIV                | PhD, Professor of Psychiatry and Medicine at UMD  | Management             |
| Dr. Jennifer Bell        | CIV                | MD, Psychological Health Center of Excellence     | Military Specific      |
| CPT Kristopher Hasenauer | Army NG, USSOCOM   | PA-C, Primary Care (end user)                     | Military Specific      |
| Dr. William Highlander   | CIV (serving Navy) | MD, Board Certified Neurology/Sleep               | Military Specific      |
| LCDR Rebecca Rausa       | Navy               | PA-C, Primary Care (end user)                     | Military Specific      |
| COL Brian Robertson      | Army               | MD, Board Certified Pediatrics/Sleep              | Military Specific      |
| Dr. Marc Silva           | VA                 | PhD, Neuropsychology                              | Military Specific      |
| COL Vincent Mysliweic    | Army               | MD, Board certified Pulmonology/Sleep             | N/A                    |
| Dr. Christopher Spevak   | CIV                | MD, Pain Management                               | N/A                    |

## Supplementary Table 2. EWG Questions

The EWG members were asked to answer the following questions in preparation for the EWG meeting. Instructions included to consider the scope of the clinical recommendation in their responses (practical primary care management of common sleep disturbances and disorders in active-duty service members and veterans post mTBI) and to synthesize the available evidence and their clinical experience into a consolidated conclusion.

| <b>EWG</b>                              | <b>Questions</b>  |
|---|---|
| <b>All</b>                              | 1. What Sleep domains are important to address in managing mTBI?  |
| <b>Diagnostics &amp; Outcomes</b>       | <ol style="list-style-type: none"> <li>1. What are the recommended screening, evaluation and diagnostic measures? (Consider predictive value, sensitivity and specificity)</li> <li>2. Identify effective subjective measures/diagnostic tools for sleep disturbances post mTBI</li> <li>3. Identify effective objective measures/diagnostic tools for sleep disturbances post mTBI (e.g., biomarkers)</li> <li>4. Do you see discrepancies in objective vs. subjective measures (e.g., actigraphy vs. self-report)? If so, how would you describe the relationship and underlying cause? How do you manage this?</li> <li>5. What ISI cut off do you use for the diagnosis of insomnia in your practice?</li> <li>6. What are the recommended outcome measures? (e.g., functional, physical, social, QOL, satisfaction with life); (consider predictive value, sensitivity and specificity)</li> <li>7. At what time points should these outcome measures be assessed?</li> <li>8. What are the most meaningful/impactful outcomes to you and to your patients?</li> </ol> |
| <b>Interventions</b>                    | <ol style="list-style-type: none"> <li>1. Are there any updates and/or new effective non-pharmacological strategies/interventions for the various sleep disturbances/disorders?</li> <li>2. Are there any updates and/or new effective pharmacological strategies/interventions? (Consider supplements, updates to medication warnings, implications for the active-duty population)</li> <li>3. Are there any updates and/or new effective CAM strategies/interventions?</li> <li>4. Are there any updates and/or new effective combination strategies/interventions?</li> <li>5. Are there any updates and/or new effective Assistive Technology/Applications strategies/interventions?</li> <li>6. Is there evidence to support the order of interventions? (e.g., non-pharm prior to pharm).</li> </ol>   |
| <b>Management</b>                       | <ol style="list-style-type: none"> <li>1. Identify the most significant contributing factors to sleep disruption/poor sleep outcomes/prolonged recovery trajectory/development of chronicity (Consider history, co-morbidities (including other sleep disorder diagnoses), point of injury factors, mechanism of injury, demographics, bidirectional relationships (e.g., sleep and PTSD))</li> <li>2. How does the presence of contributing factors impact management of sleep disturbances? (e.g., timing, diagnostics, interventions, methods, duration, frequency, intensity)</li> <li>3. What is the recommended patient education? (Consider timing, methods)</li> <li>4. How does management of sleep disturbances differ based on phase of recovery/time of presentation? (acute, sub-acute, chronic)</li> <li>5. What criteria determine when a patient receiving PCM sleep care should be referred to a specialist? (e.g., red flags (to include immediate command notification))</li> </ol>  |
| <b>Military Specific Considerations</b> | <ol style="list-style-type: none"> <li>1. What specific factors need to be considered in managing sleep disturbances in active-duty service members and veterans? (Consider cultural, operational, training, etc.)</li> <li>2. What specific factors need to be considered in managing sleep disturbances in Female service members and veterans?</li> <li>3. What factors need to be considered for delivery of care in deployed vs. non-deployed settings, combat vs. non-combat settings?</li> <li>4. What driving precautions do you recommend, under which circumstances? (e.g., caution against the operation of heavy machinery)</li> <li>5. What adaptations in diagnostic and/or treatment delivery need to be made for management of sleep disturbances by tele-health?</li> </ol>  |