

Evidence-Based Practice Guidance for Severe Traumatic Brain Injury: A Scan of Implementation Readiness and Translational Needs

Natalie Gilmore, PhD^{1,2,3}; Amy Shapiro-Rosenbaum, PhD^{4,5} ; Katherine Golden, OTD^{6,7} ; Lori Kennedy, PhD⁸ ; Jennifer MacDonald, MD, PhD⁹ ; Brooke Murtaugh, OTD¹⁰ ; Caroline Schnakers, PhD¹¹ ; Molly McNett, PhD¹²; Risa Nakase-Richardson, PhD^{1,2}

¹James A. Haley Veterans' Hospital, Tampa, FL;²University of South Florida, Tampa, FL;³Tampa VA Research and Education Foundation, Tampa, FL;⁴Park Terrace Care Center, Queens, NY;⁵Icahn School of Medicine at Mount Sinai, New York, NY;⁶MGH Institute of Health Professions, Boston, MA;⁷Spaulding Rehabilitation Hospital, Boston MA;⁸UC Davis Health, Sacramento, CA;⁹Nationwide Children's Hospital, Columbus, OH;¹⁰Madonna Rehabilitation Hospital, Lincoln, NE;¹¹Casa Colina Hospital and Centers for Healthcare, Pomona, CA; ¹²The Ohio State University, Columbus, OH



Introduction

- Severe TBI often leads to prolonged disorders of consciousness (DoC) in Service Members and Veterans (SM/V).¹
- DoC is clinically complex, contributing to barriers in accessing specialized care across DoD/VA systems.²
- There has been a surge in evidence-based clinical practice guidelines for DoC care over the past 30 years.³
- Yet, translation of evidence into practice is slow with inconsistent guideline adoption.⁴
- NASEM’s TBI Consensus Report underscores these gaps and calls for diversified study designs and implementation science approaches, directly relevant to DoC.⁵
- A first step addressing this quality care gap for SM/V with DoC is to determine the scope of existing recommendations and assess whether they are sufficiently described to be implemented in real-world VA/DoD settings.

Objective

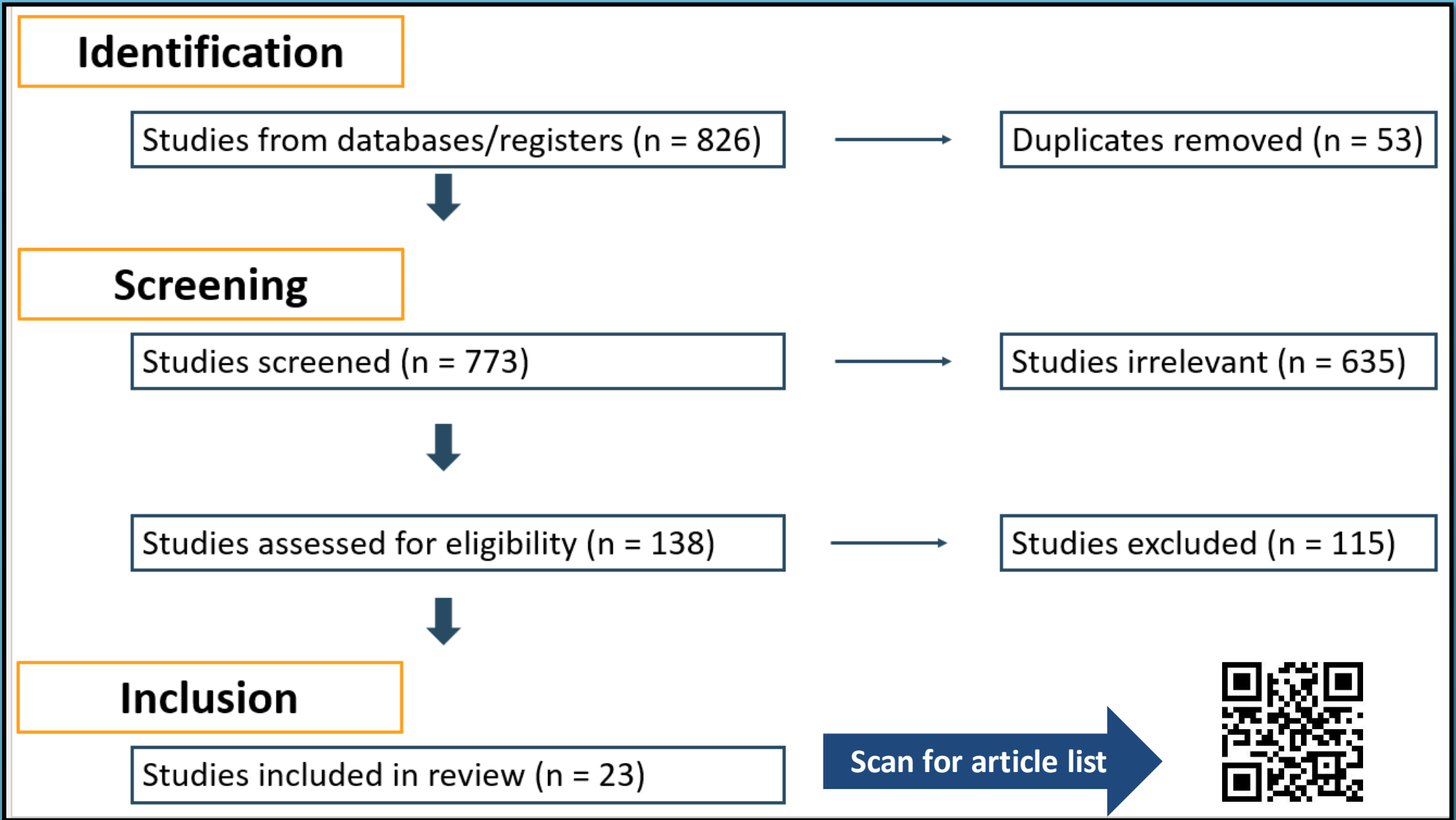
Identify existing peer-reviewed DoC care recommendations, the domains they cover, and the degree of detail provided for implementation in clinical practice.

Methods

Environmental Scan Scoping review (Joanna Briggs Institute, PRISMA-ScR) ⁷ with initial input on seminal papers from DoC experts.	Selection Two independent reviewers screened titles, abstracts, and full text.
Inclusion Criteria Peer-reviewed publications with DoC care recs.	Data Extraction Publication characteristics, verbatim recommendations.
Search Strategy Searched EMBASE, Ovid MEDLINE, SCOPUS and Cochrane (May 2023, repeated May 2024).	Data Analysis - Domains/subtopics based on extracted recommendations. - Operational specificity evaluated across domains.

Results

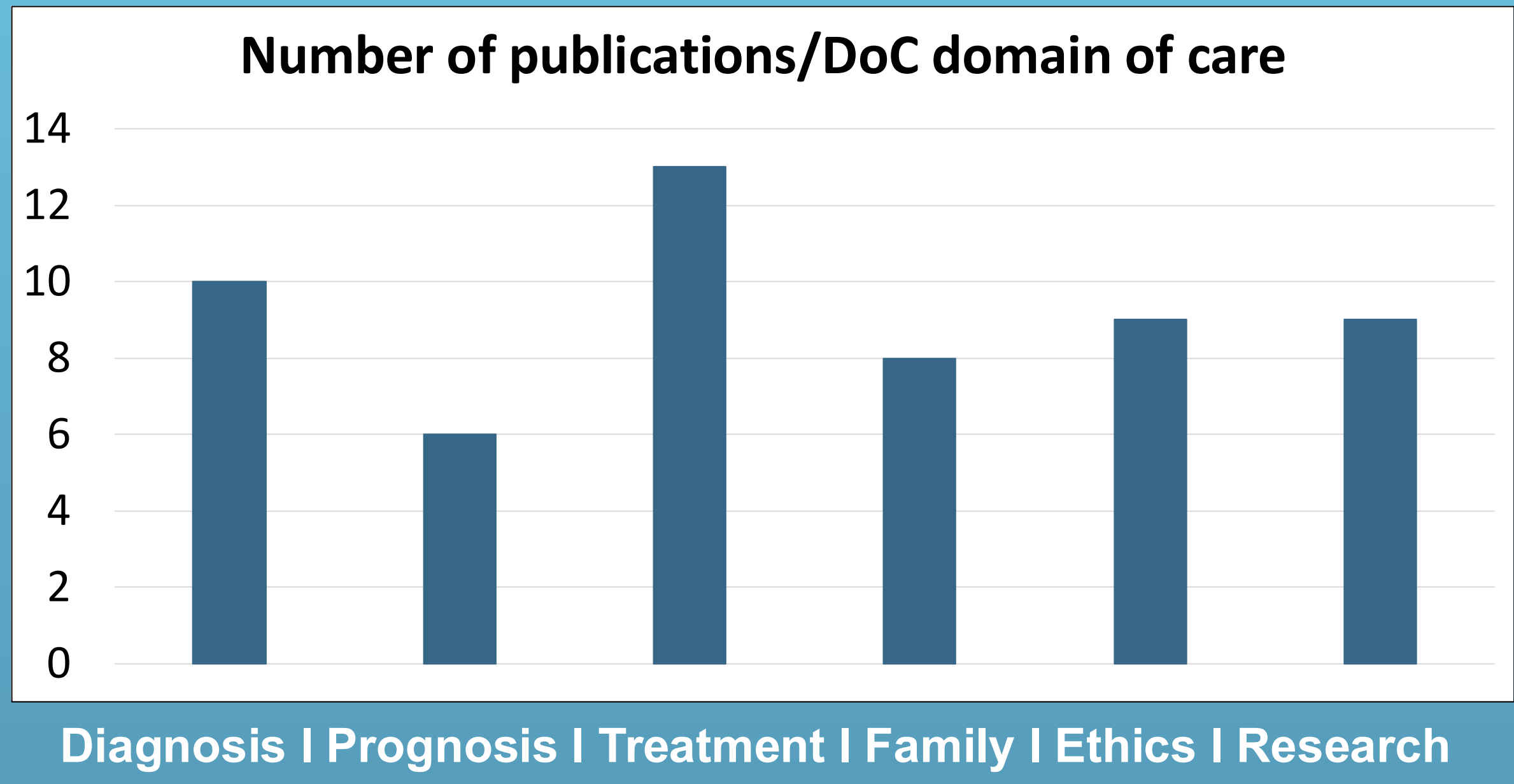
Study Flow Diagram



Key Publication Characteristics

Publication Method	Publication Country	Publication Etiology	Care Settings
- Grading of evidence, recommendations, and consensus process (n = 12) - Consensus process without grading of evidence or recommendations (n = 7) - Structured approach/framework for translating existing guidelines (n = 3)	- US (n = 10) - Multinational (n = 9) - UK (n = 2) - Canada (n = 1) - China (n = 1)	- TBI & nonTBI (n = 17) - TBI only (n = 3) - nonTBI only (n = 3)	- Across care continuum (n = 14) - Acute care only (n = 6) - Acute care, Inpatient rehab only (n = 2) - Acute Care, Inpatient rehab, Skilled nursing only (n = 1) - Pre-hospital only (n = 1)

Six domains of DoC care covered across 23 publications



Degree of detail provided for implementation in clinical practice

Domain	Sufficient Detail	Insufficient Detail
Diagnosis	- Standardized behavioral assessments - Optimizing diagnostic accuracy - Communication with families/care teams	- Patient selection and referral criteria for advanced neurodiagnostic testing - Cost, feasibility, and access pathways for neurodiagnostics outside research
Prognosis	- General prognostic formulation - Inclusion of multimodal data - Prognostic counseling guidance	- Long-term functional outcomes - Approaches for long-term prognostic tracking, risk stratification, surveillance - Prognoses impact on family decision-making
Treatment & Care Management	- Medical management - Pharmacologic guidance to promote recovery (e.g., amantadine, Zolpidem) - Non-pharmacologic rehabilitation	- Staff education and training - Palliative care - Care transitions - Long-term care in home/community
Family Caregiver Needs	- Informational needs and education - Prognostic counseling	- Hands-on caregiver training - Emotional support and decision-making assistance
Ethics & Decision-Making	- Access to multidisciplinary rehab, DoC experts, and palliative/hospice care - Patient dignity, potential for pain - WOLST procedures and considerations	- Staffing models and team composition - Decision-support tools for families - Ethics consultation execution - Broader application of palliative care
Research	Measurement science and common data elements (CDEs)	Integrating CDEs into clinical/research workflows

Discussion

- Recommendations for DoC care were found across six domains: **diagnosis, prognosis, treatment and care management, family caregiver needs, ethics and decision-making, and research.**
- Operational detail varies; Many recommendations specify “what” but not “how.”
- Guidance concentrated in acute care; lacking for rehab, chronic care, community management, and care transitions.
- Scant pediatric DoC guidance; **None focused solely on SM/V.**
- Research gaps remain (e.g., implementation of guidelines)



Limitations

- Subtopics reflect published content, may over-represent coverage.
- Excluded grey literature.
- No formal quality appraisal – outside scope.
- Some publications missed (e.g., China, Spain, Italy guidelines)

Conclusion

Current recommendations span all major domains of DoC care, with relatively well-defined guidance for diagnostic and prognostic practices. However, actionable detail remains limited in rehabilitation, caregiver support, ethics, staff training, and long-term management. Persistent gaps highlighted by NASEM underscore the need for implementation science to promote high-quality, evidence-based care for SM/V with severe TBI.

Acknowledgements and References

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