Federal Optometric Residency in Brain Injury Rehabilitation – Core Curriculum

USU Uniformed Services University

MHS Military Health System
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Mission Statement - To provide clinical education and training of graduate optometrists that enables them to perform advanced clinical competencies in the diagnosis, management, and rehabilitation of patients with vision dysfunctions and other vision sequelae due to brain injury, with an emphasis on return to duty, and/or resumption of normal activities of daily living.

Introduction and Purpose - Brain injuries are common in patients cared for within the Federal Health Care Systems of the Department of Defense (DoD), the Department of Veterans Affairs (VA) and the United States Public Health Service (USPHS). It is important to encourage specialized clinical training of federal optometrists in appropriate assessment and management of visual dysfunctions associated with traumatic brain injuries. This consensus-derived document provides a content outline, which can be applied to any Federal clinical training program focused on the care of brain injured patients regardless of the length. For example, it would be appropriate in support of a residency, fellowship, or other type of clinical experience to ensure the appropriate topics are covered as part of such education and training. It is further understood that these content topics would be applied as clinical experiential, didactic and/or research experiences provided by each program according to their curricular planning and resources.

Educational Goals:

1. Acquire and develop knowledge and skills specific to the evaluation, management, and rehabilitation of brain injury patients.
2. Develop expertise in management of brain injury patients in a DoD and VA specific environment.
3. Develop inter-personal and communication skills, to work effectively with others as a member of a healthcare team or professional group.
4. Engage in practice-based learning and improvement, by applying evidence-based optometric skills, and ensuring a system-based approach to patient care.
5. Develop skills in a broad array of vision rehabilitation techniques to allow customization to the needs of the brain injured patient.
6. Cultivate academic abilities to facilitate contributions to the brain injury care community.

Standard Curriculum:

I. Clinical Care

A. Brain Injury Basic Optometric Skills (Refer to Vision Center of Excellence Guidelines[1] and VHA Directive[2] for full list of history items)
   1. Brain injury-Specific Case History
      a. Co-Morbidities
      b. Medications
   2. Baseline Brain injury questionnaires and assessment tools (e.g. Convergence Insufficiency Symptom Survey (CISS), Military Acute Concussion Evaluation 2 (MACE-2), Rivermead Post Concussion Symptom Questionnaire, Neurobehavioral Symptom Inventory (NSI))
   3. Visual acuity testing with central fixation
   4. Brain injury-specific refraction (free-space)
   5. Color vision testing (monocular)
   6. Visual field screening

B. Oculomotor-Based Testing (Refer to Vision Center of Excellence Guidelines[1] and VHA Directive[2] for full list of procedures)
   1. Eye Alignment
   2. Accommodation (free-space) monocular and binocular with facility assessment
   3. Convergence Amplitude
   4. Vergence (free-space) with facility assessment
   5. Phoria Testing (free-space) horizontal and vertical

6. Eye Movements
7. Fixation and Nystagmus
8. Suppression Check
9. Extraocular Muscle Motility
10. Vestibulo-ocular Reflex

C. Non-oculomotor Based Testing
1. Balance/ Dizziness / Visual Motor Sensitivity
2. Gait Evaluation
3. Visual Field / Neglect
4. Photosensitivity

D. Specialty/Auxiliary Testing
1. Functional outcome surveys to assess for improvement or normalization of symptoms[1]
   a. Brain Injury Visual Symptom Survey (BIVSS)
   b. CISS
   c. National Eye Institute Visual Functioning Questionnaire (NEI-VFQ-25)
2. Cognitive Assessment (Automated Neuropsychological Assessment Metrics (ANAM), Stroop Color and Word Test, Brief Visuo-spatial Memory Test)
3. Neuroimaging

E. Plan of Care and Rehabilitation
1. Perform Vision Rehabilitation and Develop Plan of Care
2. Optical Treatments, Tint evaluation, and Use of Prisms
3. Assessment for Return to Duty/Return to Activities of Daily Living (RTD/RTA)
4. Medical Evaluation Board (MEB)/ Disability/ Discharge

II. Interdisciplinary Care

A. Consultations / Referrals/ Care Collaboration
B. Participation in Multi-Disciplinary Care Management Meetings
C. Rotations with different specialties to augment the residency program in areas of need (e.g., Rehabilitation Specialists, Neurologists, Audiologists, etc…)

III. Scholarship

A. Scholarship of Teaching and Learning
1. Attending (Clinical Teaching)
2. Mentoring
3. Participating and leading Journal Clubs, Grand Rounds, and Morbidity and Mortality Section
4. Preparing and Teaching Continuing Education

B. Scholarship of Integration, Application, and Discovery
1. Poster Preparation and Submission to a national conference
2. Performing Literature Review
3. Participate in ongoing research, learning research, and data analysis, with the possibility of authorship in a manuscript of publishable quality

References:

1. VCE Clinical Recommendation for the eye care provider: Assessment and management of oculomotor dysfunctions associated with traumatic brain injury.
   https://vce.health.mil/-/media/Files/VCE/Clinical-Recommendations/Oculomotor/Assessment-and-Management-of-Oculomotor-Dysfunctions-Associated-with-Traumatic-Brain-Injury.ashx?la=en&hash=1B51D0703ED7F18A3586B69AE1D31F09E24C972DC98F1CEA8079A6D10645FE72

2. Performance of traumatic brain injury-specific ocular health and visual functioning examinations for polytrauma rehabilitation center patients.nDepartment of Veterans Affairs VHA DIRECTIVE 2008-065.
   https://www.va.gov/optometry/docs/VHA_Directive_2008-065_TBI_Ocular_Vision_Exams_for_PRCs.pdf