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NICoE
National Intrepid Center of Excellence

NICOE BRIEF TO THE RECOVERING WARRIOR TASK FORCE

27 January 2014

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Intro: NICoE Value Proposition

Mission: As the Military Health System institute dedicated to understanding complex, comorbid traumatic brain injury and psychological health conditions, we deliver comprehensive and holistic care, conduct focused research, and export knowledge to benefit service members, their families and society.

Value Proposition:

The NICoE is a clinical research institute dedicated to improving practice standards and patient outcomes through advancing the science of Traumatic Brain Injury and Psychological Health conditions.

The NICoE's research mission is to enhance understanding and influence care for TBI and PH through:

- Refining the diagnosis of this complex medical condition using the interdisciplinary care model and state of the art technologies;
- Identifying patterns of biological and clinical factors to guide diagnosis and individualized treatment; and
- Studying the longitudinal path of recovery and reintegration to inform treatment and prevention strategies.

In support of the research mission, the NICoE applies an intensive outpatient clinical care model aimed at improving functionality and quality of life. We:

- Partner with and provide consultation to referring providers;
- Provide comprehensive interdisciplinary evaluations; and
- Introduce treatments to develop and recommend personalized plans of care.

NICoE Value Proposition under review by ASD/HA at the time of preparing these slides.

Item 1: What are the new best/promising practices in evidence-based treatment of individuals with both PTSD and TBI?

- The NICoE continues to evaluate innovative therapeutic interventions to improve patient outcomes for those patients not responding to conventional therapies. Promising best practices for this population include:
  - An intensive outpatient program that utilizes a patient-centered interdisciplinary model of care
  - Sequencing of evaluation to include early assessment and treatment of sleep disturbance, pain and headache to build therapeutic alliance with the patient
  - Combining integrative medicine (including art therapy, acupuncture and animal-assisted therapy) and traditional therapies to enhance insight into symptoms and causes of suffering
  - Provide skills-based training to enhance self-regulation of autonomic balance for emotional stability (examples include Heart Math, yoga, and expressive writing)
- Recent proven practices that are being promulgated to broader TBI population:
  - Assessment of auditory processing and vestibular functions prior to neurocognitive testing (HCE)
  - Comprehensive vision/eye movement evaluation (VCE)
  - Neuroimaging of patients with TBI (DVBIC/DCOE)

Item 2: Please provide an overview of the size and composition of your clinical staff

- **Total FTEs:** 117 (DoD)

	Civilian (Authorized)	Military (Loaned)	PHS (MOA)	Contractor	Total
FTEs	89	16	4	8	117
Onboard	57	16	4	8	85
Percent Staffed	64%	100%	100%	100%	72%

- **FTEs onboard categorized by functions:**

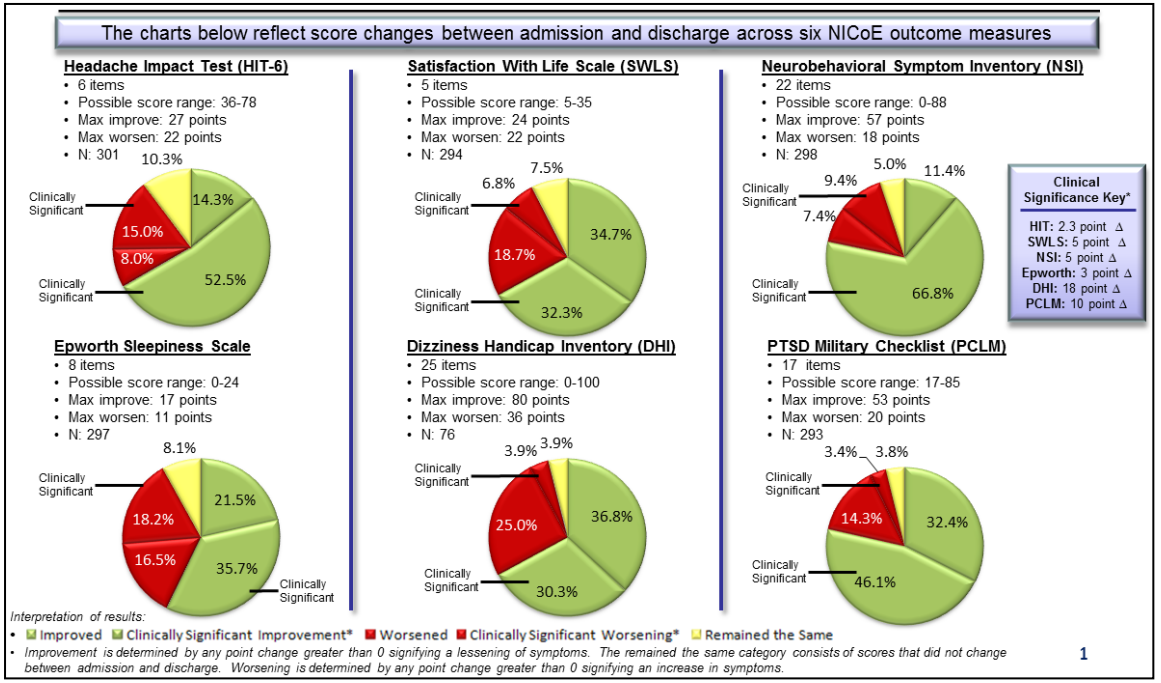
Function	Total FTEs	CIV (Onb)	CIV (Vac)	CIV % Staffed	MIL	PHS	CTR	Total (Onb)	Total Onboard %	Positions
Executive Office	10	4	1	80%	5	0	0	9	90%	Deputy Commander, Director, Deputy Director, Senior Enlisted Advisor, PAO, Department Chiefs
Admin	11	5	6	45%	0	0	0	5	45%	IT Manager, Resource Manager, Office Managers
Clinical Operations	59	36	8	82%	10	3	2	51	88%	Service Chiefs, Clinical Pharmacist, Arts Therapist, Primary Care, Neurologists, Neurologist, Psychiatrists, Neuropsychologists, Psychometric Technicians, EEG Tech, Medical Technician, Physical Therapists, Assistive Technologist, Training Simulator, Speech Pathologists, Audiologists, Recreation Therapist, CAM, Psychiatric Nurses, Continuity Managers, Social Workers, CFS-Prep, Music Therapist, Medic/HM, Occupational Therapist
Research	32	11	14	44%	1	0	6	18	56%	Scientific Advisor, Clinical Trial Coordinators, Service Chiefs, Research Psychologist, CAREN Operator, MRI Physicist, Medical Imaging Scientists, MRI Tech, PET Tech, NUC Tech, MEG Scientists, MEG Tech
Education & Training	5	1	3	25%	0	1	0	2	40%	Education Support, Clinical Education and Outreach
Total	117	57	32	64%	16	4	8	85	72%	

Item 3: What is NICoE's assessment of the availability of evidence-based treatment for TBI across DoD?

- Guidance and training regarding evidence-based treatment for PTSD and TBI has had good penetration across the DoD
- Defer to DCoE regarding effective utilization across the DoD
- Challenges remain in the following areas:
  - Standardizing collection of robust assessment and outcomes metrics to facilitate Comparative Effectiveness Research
    - Recommend continued work with DCoE/DVBIC Concussion Outcomes Working Group to accomplish this task
    - Recommend continued coordination with the Federal Interagency Traumatic Injury Research database and Common Data Elements working group
  - While there is a compendium of options for caring for patients with comorbid TBI/PH conditions, there is no clinical practice guideline
    - Much remains to be learned about why some patients respond and others do not. Support for clinical research must continue with particular focus on research done in the MHS, on our patients and by our experts

Item 4: What metrics do you have regarding NICoE's patients' outcomes after they leave the NICoE?

- The NICoE collects the following outcome measures at both admit and discharge:
  - Headache Impact Test
  - Satisfaction with Life Scale
  - Neurobehavioral Symptom Inventory
  - Epworth Sleepiness Scale
  - Dizziness Handicap Inventory
  - PTSD Military Checklist



- Preliminary assessment in reduction of healthcare utilization showed NICoE patients had a 13% reduction in patient/provider encounters compared with the year pre and post NICoE stay
- A sub-cohort of 147 patients discharged from the NICoE by SEP2012 showed a one-year rate of retention in the military at 78%
- The NICoE participated in a RAND-sponsored longitudinal study to survey referring providers and past patients on care availability and patient experience (report forthcoming)

Item 5: What changes are needed outside NICoE to enable NICoE to better fulfill its mission?

- In order for the organization to achieve its mission as a clinical research institute, the NICoE would benefit from:
  - Defined measures of success endorsed by senior military medical leadership to enable the NICoE to proceed with unity of direction to fulfill its mission
  - Determination of alignment of the NICoE to maximize support for mission success and allowing for stability of operations
  - Validation of a manning document that is synchronized with clarified mission and performance measures and then authorized and filled.
  - Institution of robust, standardized TBI/PH patient assessment metrics and outcome measures to be used and collected across the entire MHS to facilitate Comparative Effectiveness Research
  - Sustainment of TBI/PH research funding and streamlined processes for the NICoE to receive and execute research funding without creation of a redundant research infrastructure
  - Accelerated identification and implementation of an IT solution accessible by all DoD-endorsed researchers to meet the National Research Action Plan requirement to promote collaboration, meta-analysis and sharing of de-identified TBI/PHI study data

Item 6: What is the status of the NICoE satellites?

- Intrepid Spirit Fort Belvoir – ribbon cutting 11SEP2013
  - Admitted 215 patients total, and reported over 4,000 patient encounters
  - Currently, only seeing active duty service members due to only being 75% staffed
  - Once fully staffed, will be open to dependents and retirees
- Intrepid Spirit Camp Lejeune – ribbon cutting 2OCT2013
  - Admitted 247 patients total (14 new patients on a weekly basis)
  - Returned 86.3% to fully mission capable status
  - 1,072 service members enrolled in the program from inception to 30DEC2013
  - In FY11, 21% referred to civilian network; currently, less than 1% referred to civilian network
- Intrepid Spirit Fort Bragg ground breaking ceremony is scheduled for 24JAN2014
- Intrepid Spirit Fort Campbell is scheduled to open during summer 2014
- Remaining five Intrepid Spirits construction dates yet to be determined

Item 7: What is the target population of the satellites and the referral process?

- The intended target population for Intrepid Spirits are active-duty service members with TBI with or without PTSD or other co-morbid conditions not responding to conventional care
  - For Intrepid Spirit Fort Belvoir, active duty with TBI (mild/mod/severe) and suspected TBI
  - For Intrepid Spirit Camp Lejeune, the mechanism of injury may be combat or non-combat related
- The referral process:
  - At the Intrepid Spirit Fort Belvoir, the referral process can be completed by any provider with CHCS access
  - At the Intrepid Spirit Camp Lejeune, patients are referred by their Medical Officer or Primary Care Manager following 90 days of initial treatment
    - Patients may also self refer by calling or presenting themselves to the Center

Item 8: What services will the satellites offer?

- Services provided at the Intrepid Spirits include the following:
  - Interdisciplinary Evaluation and Treatment
  - Neurology
  - Psychiatry
  - Physical Therapy
  - Occupational Therapy
  - Speech Language Therapy
  - Spiritual Counseling
  - Comprehensive Case Management
  - Acupuncture
  - Integrative Medicine
  - Neuropsychological testing
  - Creative Arts Program

- Future services planned at Intrepid Spirit Camp Lejeune include:
  - Return to Duty Program anticipated in APR2014

Item 9: Will the satellites provide consultation and education services as well as treatment?

- Leveraging video teleconference technology, each Intrepid Spirit and its clinical providers participate in a quarterly TBI/PH educational forum based on the University of New Mexico's ECHO (Extension for Community Healthcare Outcomes)
  - Each session includes case and didactic presentations; CEUs/CMEs awarded.

- Intrepid Spirit Fort Belvoir has the following educational offerings:
  - A 5 Week Educational Series provided by Brain Injury Medicine professionals
  - Education Coordinators who are available to provide additional education/education resources for the patient/family members

- Intrepid Spirit Camp Lejeune has the following educational offerings:
  - Concussion Recovery Orientation, Relationship Resiliency, Anger/Anxiety Management, Restorative Sleep, Mindfulness-Based Stress Reduction
  - Education Coordinators who are available to provide additional education/education resources for the patient/family members

Item 10: How will the satellites monitor post-discharge outcomes?

- Currently, the Intrepid Spirit Camp Lejeune, Intrepid Spirit Fort Belvoir and NICoE all collect measures from the list of current assessment tools below:
  - Headache: Headache Impact Test (HIT 6)
  - Alcohol: Alcohol Use Disorders Identification Test: AUDIT-C
  - Mood: Personal Health Questionnaire Depression Scale (PHQ-9)
  - PTSD: PTSD Checklist Military PCL-M
  - Sleep Disorders: Pittsburgh Sleep Quality Index
  - Complaints frequently seen after TBI: Neurobehavioral Symptoms Inventory (NSI) and Mayo-Portland Adaptability Inventory (MPAI)
  - Memory: Repeatable Battery for Assessment of Neuropsychological Status (RBANs)
  - Balance/Vestibular: Sensory Organization Test (SOT) and Vestibular Rehabilitation Benefit Questionnaire (VBRQ) :
  - Intake questionnaires: Fort Belvoir Intrepid Spirit is using intake questionnaires to look for improved scores for outcome measures (quality of life, sleep, pain, mood, retention)
- Intrepid Spirit Camp Lejeune, Intrepid Spirit Fort Belvoir, and the NICoE research team will be meeting 30JAN2014 to discuss common data elements to be used to monitor common post discharge outcomes

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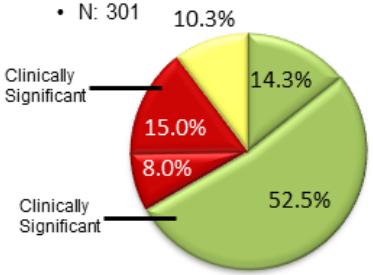
BACKUP

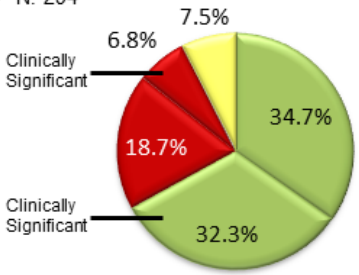
Outcome Measures

The charts below reflect score changes between admission and discharge across six NICoE outcome measures

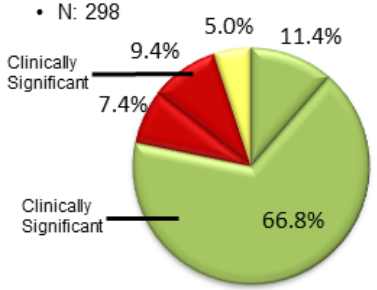
Headache Impact Test (HIT-6)
- 6 items
- Possible score range: 36-78
- Max improve: 27 points
- Max worsen: 22 points
- N: 301



Satisfaction With Life Scale (SWLS)
- 5 items
- Possible score range: 5-35
- Max improve: 24 points
- Max worsen: 22 points
- N: 294



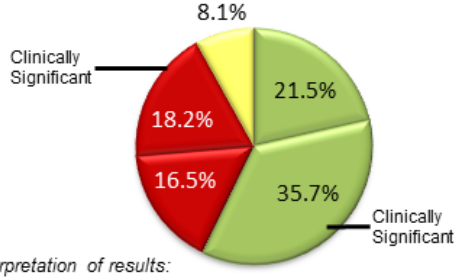
Neurobehavioral Symptom Inventory (NSI)
- 22 items
- Possible score range: 0-88
- Max improve: 57 points
- Max worsen: 18 points
- N: 298



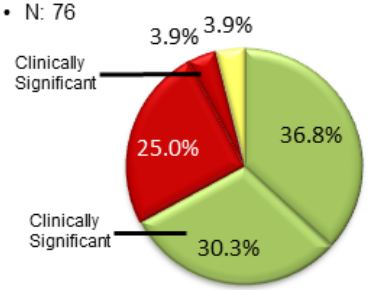
Clinical Significance Key*

HIT: 2.3 point Δ
SWLS: 5 point Δ
NSI: 5 point Δ
Epworth: 3 point Δ
DHI: 18 point Δ
PCLM: 10 point Δ

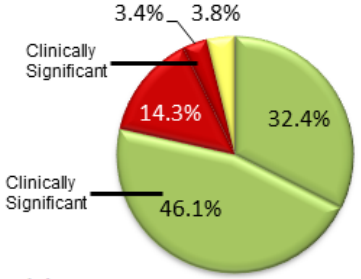
Epworth Sleepiness Scale
- 8 items
- Possible score range: 0-24
- Max improve: 17 points
- Max worsen: 11 points
- N: 297



Dizziness Handicap Inventory (DHI)
- 25 items
- Possible score range: 0-100
- Max improve: 80 points
- Max worsen: 36 points
- N: 76



PTSD Military Checklist (PCLM)
- 17 items
- Possible score range: 17-85
- Max improve: 53 points
- Max worsen: 20 points
- N: 293



Interpretation of results:
- Improved | Clinically Significant Improvement* | Worsened | Clinically Significant Worsening* | Remained the Same
- *Improvement is determined by any point change greater than 0 signifying a lessening of symptoms. The remained the same category consists of scores that did not change between admission and discharge. Worsening is determined by any point change greater than 0 signifying an increase in symptoms.*

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