



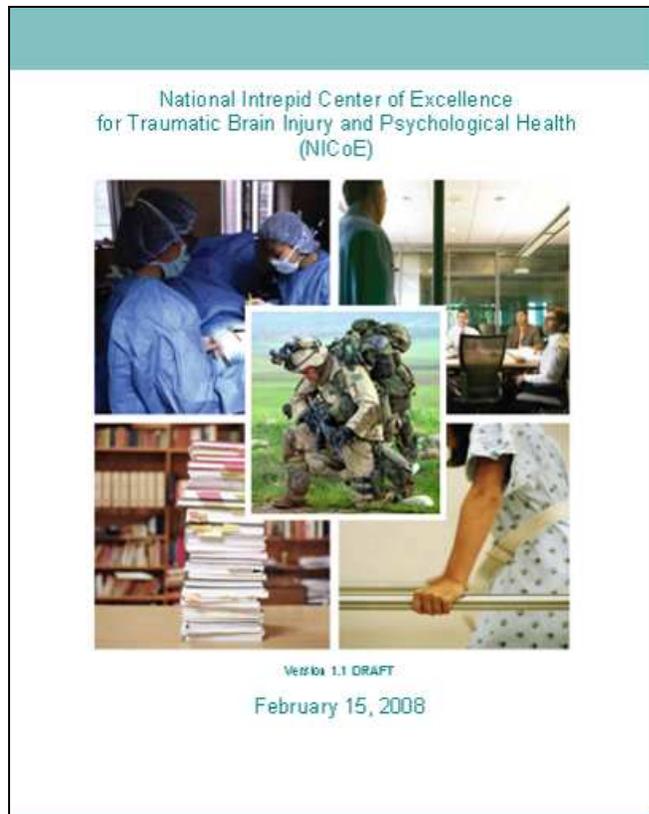
MHS Conference

26 January 2010

National Intrepid Center of Excellence
Defense Centers of Excellence
for PH and TBI



Our Commitment



“Our nation is truly blessed that so many talented and patriotic young people have stepped forward to serve. They deserve the very best facilities and care to recuperate from their injuries and ample assistance to navigate the next step in their lives, and that is what we intend to give them. Apart from the war itself, this department and I have no higher priority.”

-Robert Gates, Secretary of Defense

Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury

REAL WARRIORS.



REAL BATTLES.



REAL STRENGTH.



DEFENSE CENTERS
OF EXCELLENCE
For Psychological Health
& Traumatic Brain Injury

Resilience • Recovery • Reintegration

www.dcoe.health.mil





Mr. Arnold Fisher





AERIAL VIEW FROM PALMER ROAD SOUTH

NATIONAL INTREPID CENTER OF EXCELLENCE

INTREPID FALLEN HEROES FUNDS

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INTERIOR VIEW OF BREAK OUT AREA



INTERIOR VIEW OF LOBBY

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National Intrepid Center of Excellence (NICoE)



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NICoE Vision



- **Vision:** The NICoE is an instrument of Hope, Healing, Discovery, and Learning.
- **Mission:** To be the leader in advancing world-class psychological health and traumatic brain injury treatment, research, and education for Service Members, their Families and Veterans. It will also provide advanced education and training for healthcare professionals as well as bridge to US Military Treatment Facilities.



National Intrepid Center of Excellence



- Offers a forum for all component centers the Defense Centers of Excellence (DCoE) to share and test new ideas
- Collaborates with MTFs around the nation to provide individualized care for Service Members
- Provides state of the art holistic evaluation and diagnosis, testing of treatment modalities, creation of treatment plans, tele-health and long term care case management
- Conducts clinical research, tests new evaluation and treatment tools and provides training and education patients, families, providers and leaders



National Intrepid Center of Excellence



Guiding Principles and Assumptions:

- The hub for psychological health and traumatic brain injury best practices
- The referral center for patients with complex care needs
- The model of interdisciplinary diagnostic and treatment planning in a family focused, collaborative environment
- The exemplar of hospitality in support of physical, mental, and spiritual healing
- The knowledge source that applies evidence-based medicine and approaches which elevate the highest level of care on a global scale
- The education platform for the dissemination of next generation standards of care
- The repository for neuro-cognitive military and civilian academic research
- Committed to long-term follow-up and family contact



Facility Amenities

- *Healing Environment*
- *Platform for interdisciplinary clinical care and integrated research*
- *Optimization of education opportunities*

Evaluation and Treatment Facilities:

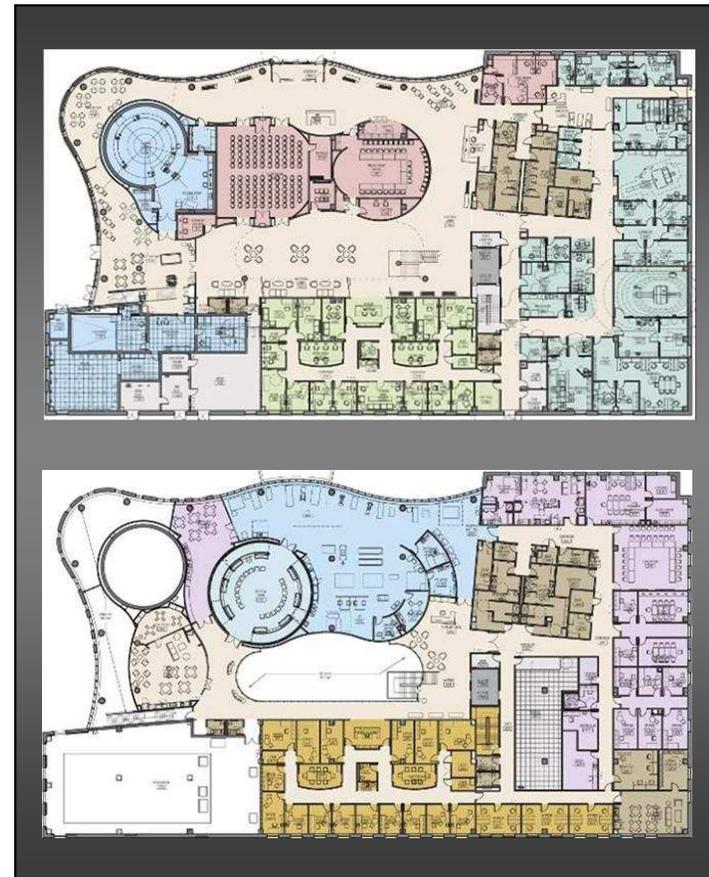
- Occupational / Physical Therapy
- Vocational Rehabilitation
- Vehicle Simulator
- Virtual Reality Lab
- Activities of Daily Living Lab
- Assistive Technologies Lab
- Speech, Hearing, and Sight

Patient & Family Amenities:

- Family Lounge
- Café
- Activity Center
- Business Center

Conference Facilities:

- Auditorium
- Media DIVE Room





National Intrepid Center of Excellence (NICoE)



Location: NNMC campus, Bethesda, MD

Lot Size: ~3 AC

Building Size: ~72,000 SF

Number of Stories: 2

Number of Personnel: ~90

Major Diagnostic / Rehabilitation Equipment:

- Magnetic Resonance Imaging (3-T) / Functional MRI / Diffusion Tensor Imaging
- Positron Emission Tomography with Computed Tomography (PET/CT)
- Magnetoencephalography (MEG) Scanner
- Trans-Cranial Doppler Ultrasound
- Fluoroscopy
- CAREN (Computer Assisted Rehabilitation Environment) system



EXCITE: GE platform for Parallel MRI



- 8 independent high-bandwidth receiver channels
- Dual-processor Pentium III Xeon
- Version 11 software (DICOM format)
- Short bore/ small form factor
- 4 G/cm gradients

- 8-element phased array head coil
- Average 40% better SNR
- SNR: peripheral > central
- Small form factor



Equipment



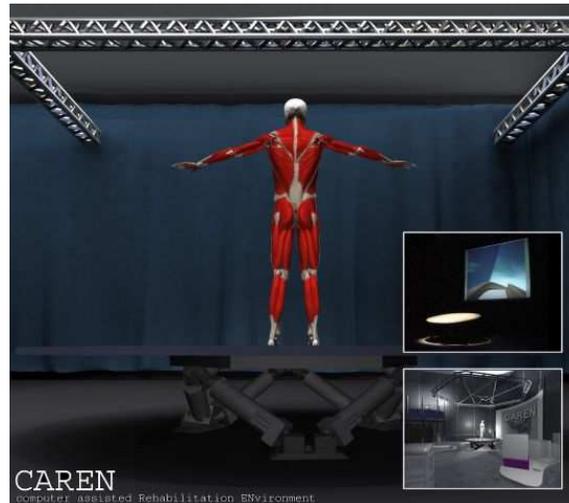
MEG



Fluoroscopy



Virtual Reality



CAREN



Dive Room



Palm ANAM Field trials



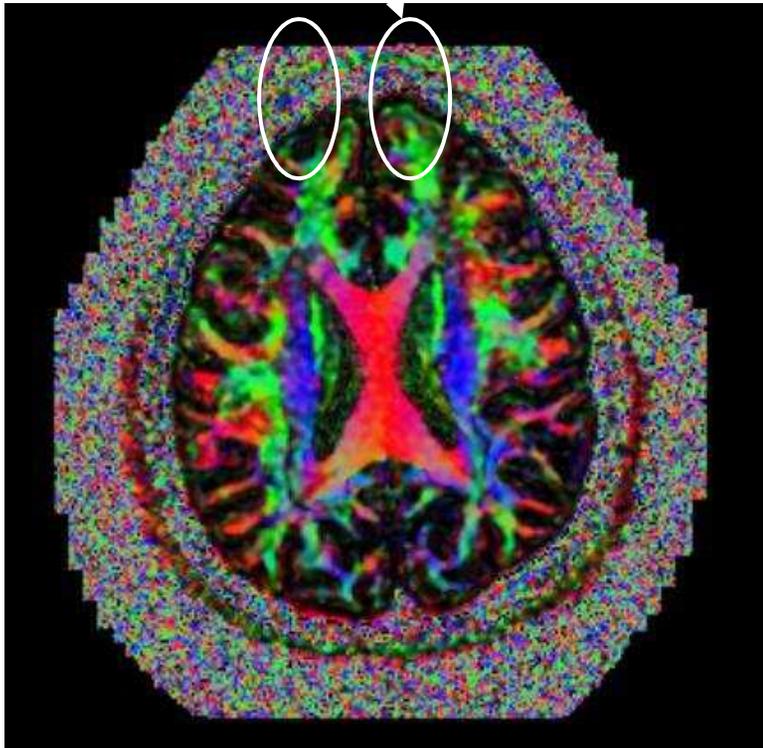


IED: Improvised Explosive Device



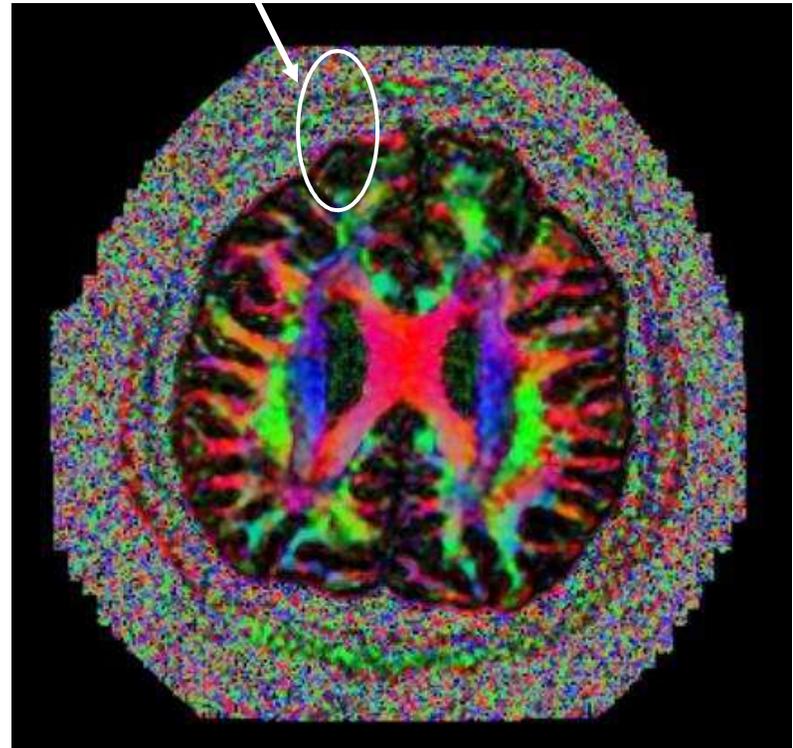


Healthy right and left hemisphere ACR of a Normal Adult



Normal Adult

Disruption to the right hemisphere ACR in mTBI patient (left hemisphere normal). Evident that there is loss of FA (decreased intensity) and loss of organization of the tract (non-uniform hue).



Mild TBI patient

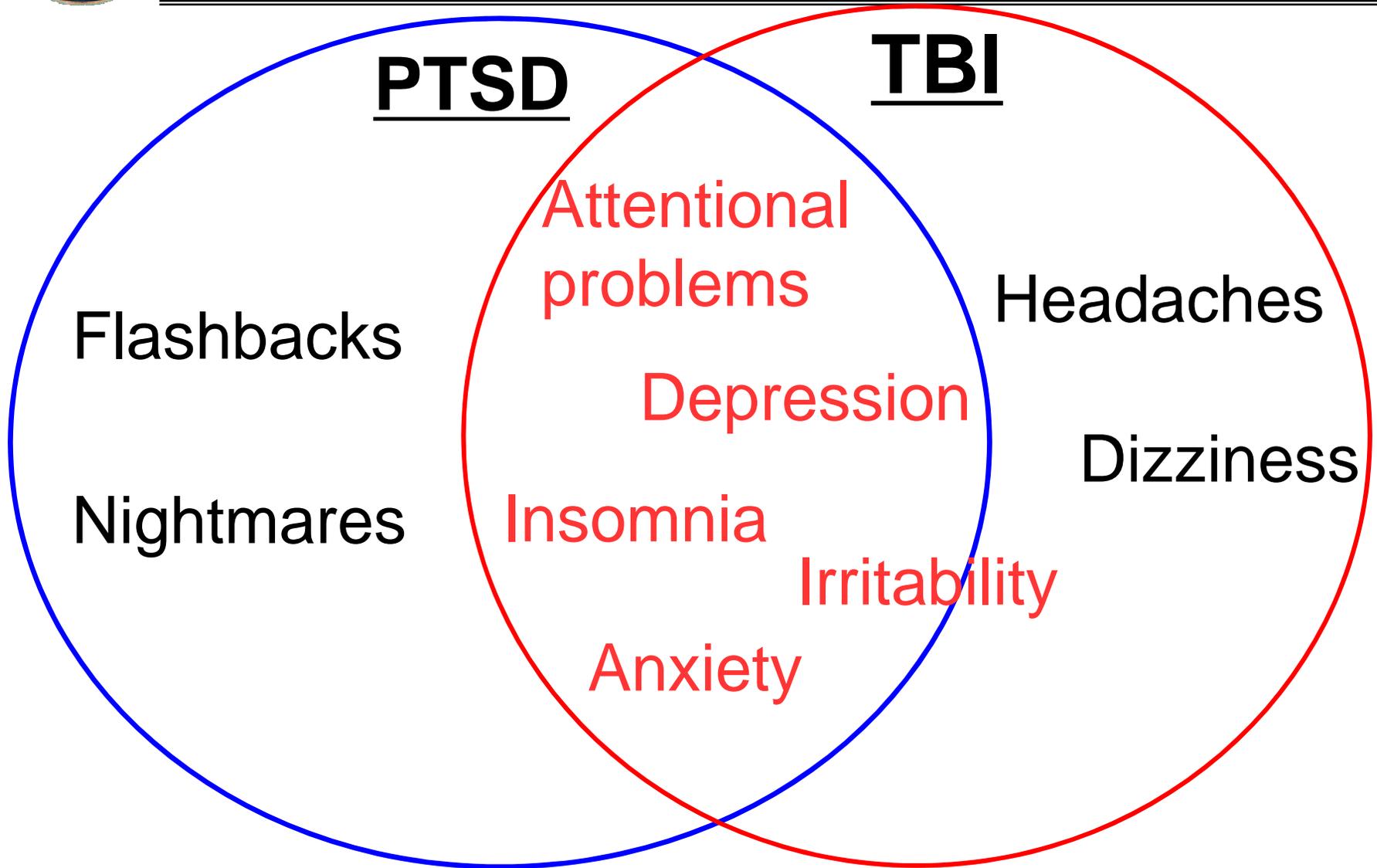


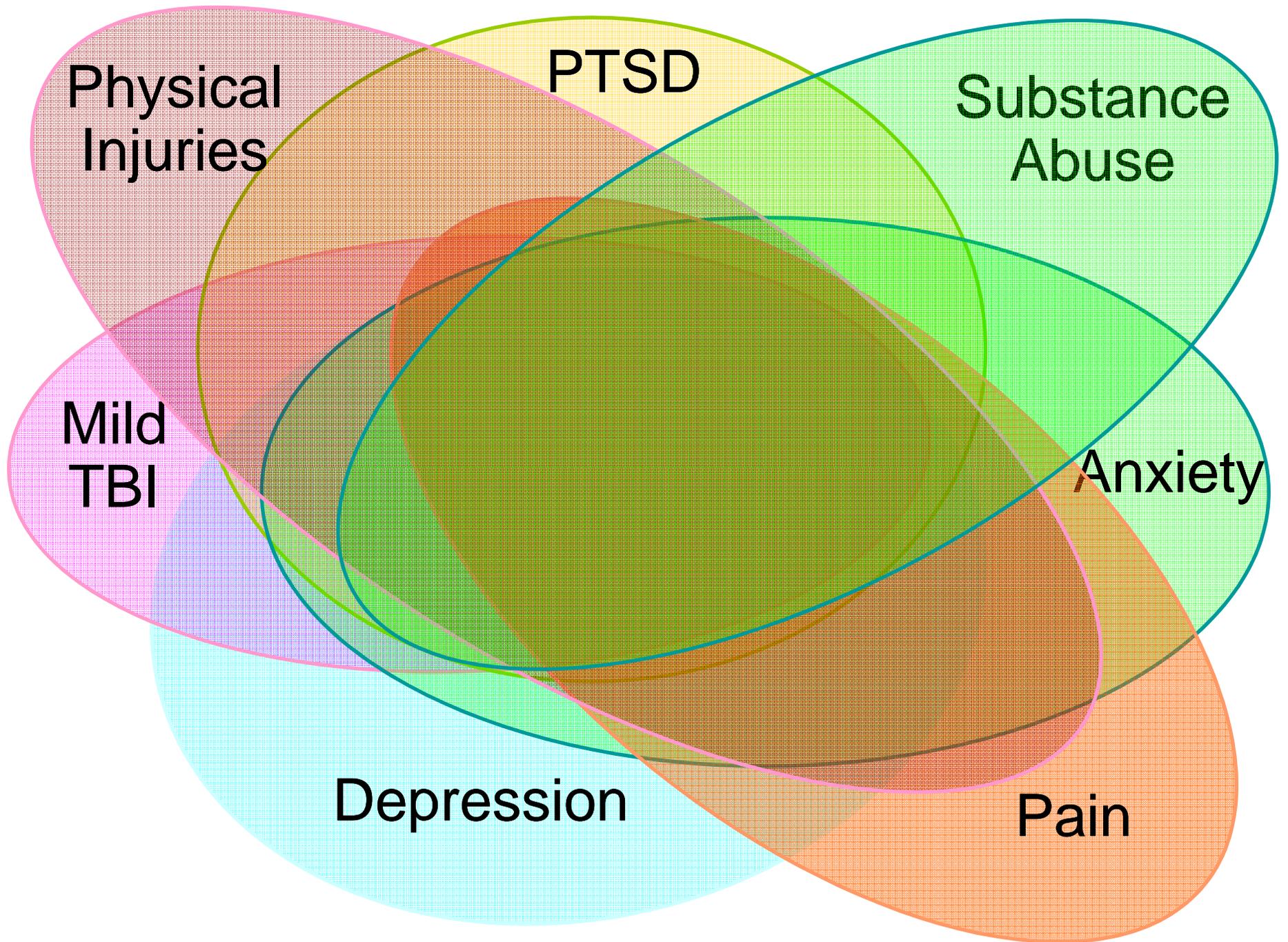
Rocket lands in counseling room





Potential Clinical Presentation







NICoE Populations



Evaluation and Treatment

- Evaluate ~ 20 Warriors and families every two weeks
- Provide individualized treatment planning
- Provide specialized rehab / therapy
- Leverage novel approaches for diagnosis and treatment
- Provide lifelong follow up

Research

- Cohort study of patients with TBI and PH conditions
- Leverage advanced technical and clinical resources via a collaborative research hub
- Design and implement next generation pilot studies promoting medical science in mTBI and PH prevention, care and treatment planning

Training and Education

- Serve as a center of learning for clinicians, researchers, service members, their families, and the public
- Develop and host collaborative training and education programs within a premier learning environment
- Serve as a platform for dissemination of novel diagnostic and treatment approaches
- Create programs to conceptualize and launch pilot studies

External Stakeholder Relations

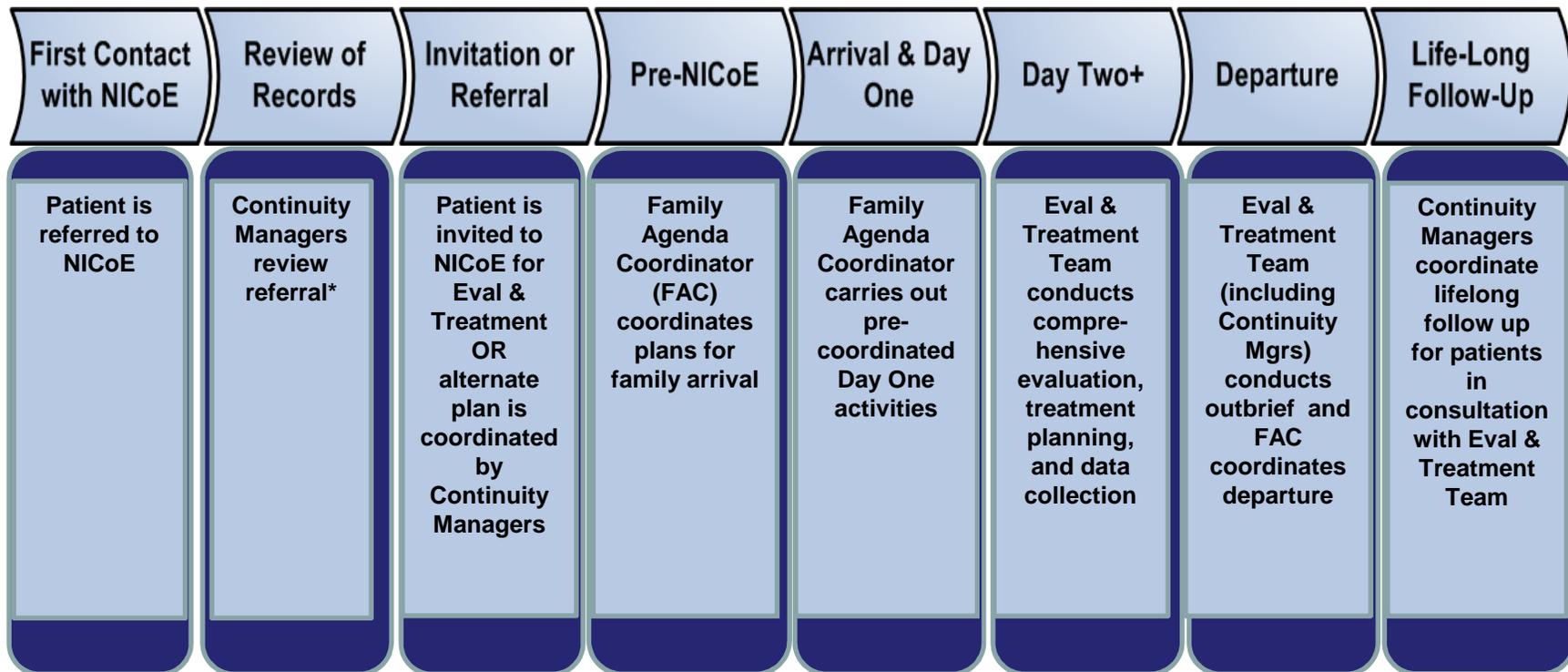
- Showcase unique capabilities and model of care to interested parties (e.g tours, VIP visits, collaborative relationships)
- Host arts and entertainment performances
- National and international consultation for Center of Excellence development



Conceptual Patient Flow Process



Evaluation and Treatment



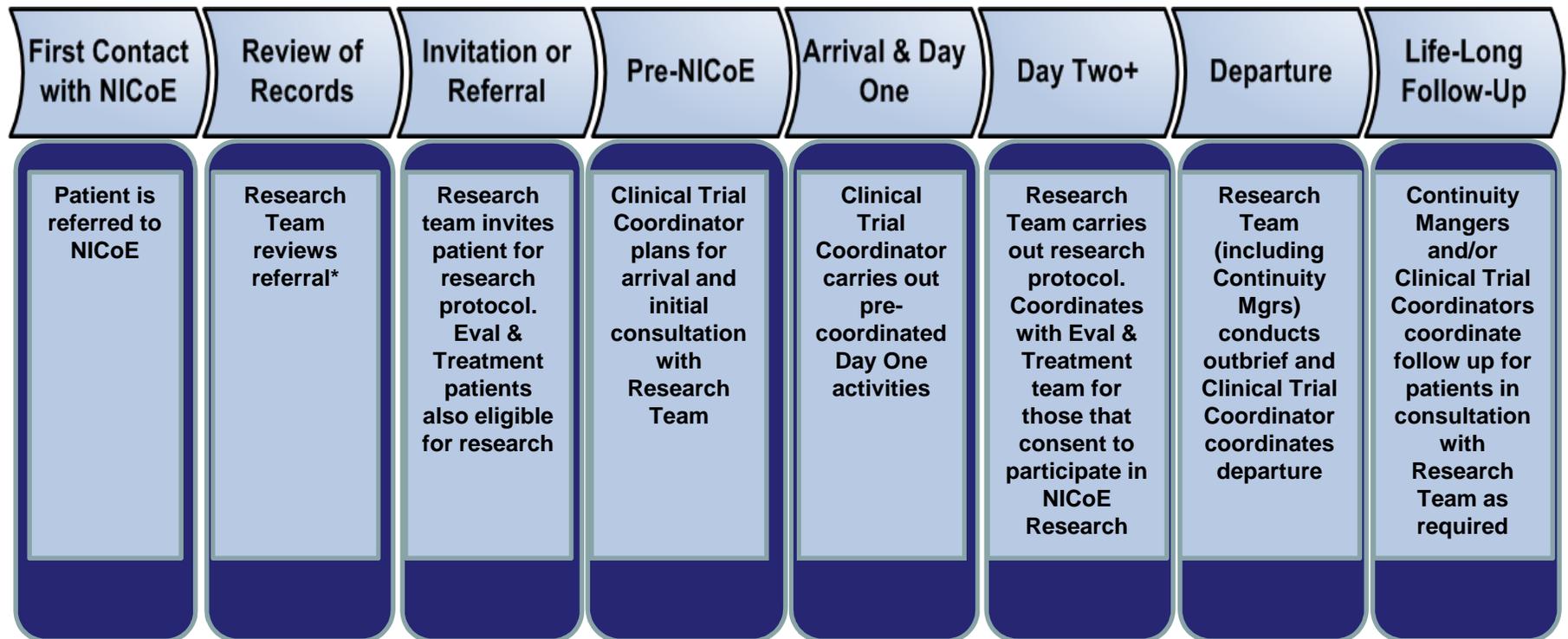
* **Note:** Patients referred to NICOE who do not meet referral criteria for Evaluation and Treatment may be considered for research protocol. Participation in research is elective



Conceptual Patient Flow Process



Research

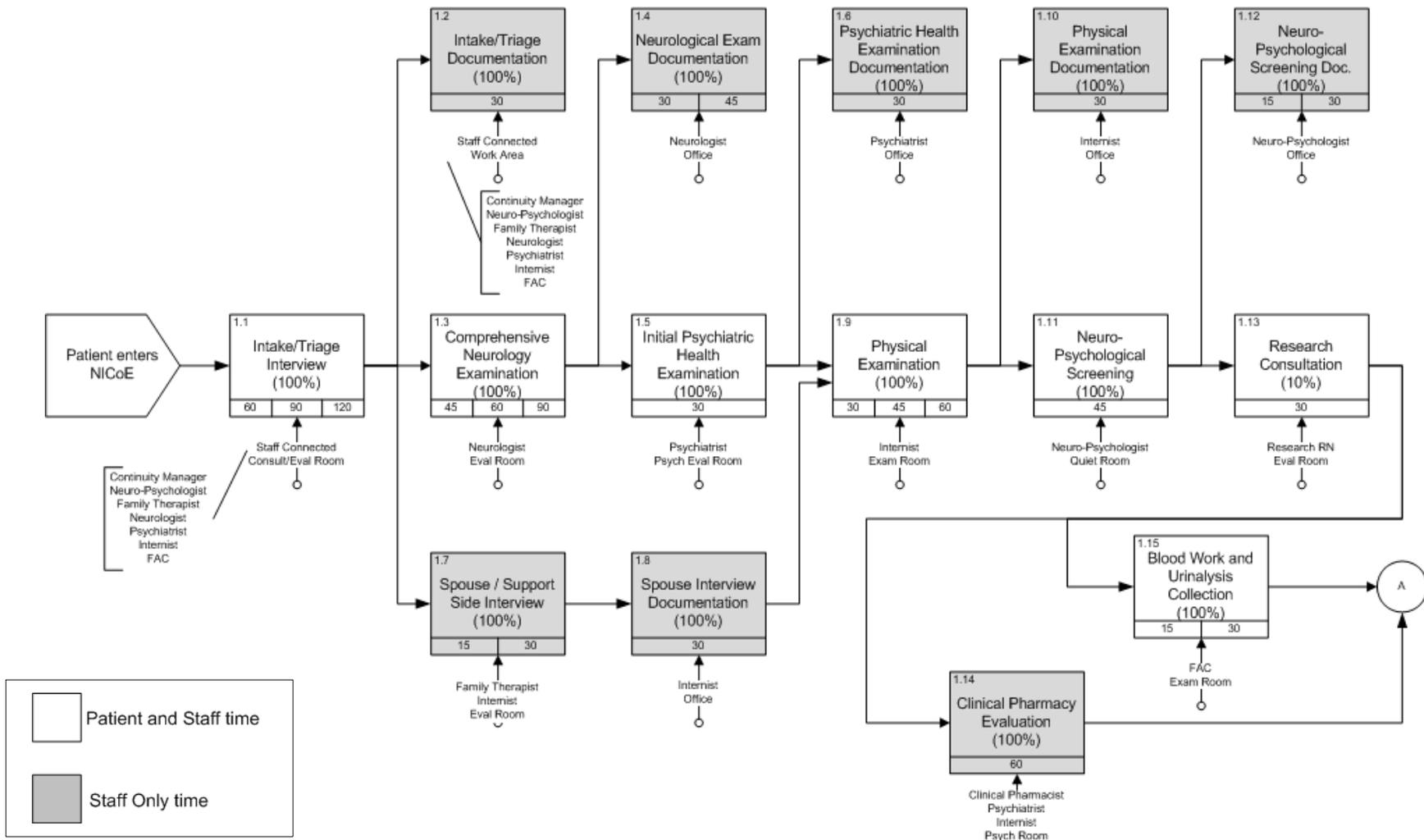


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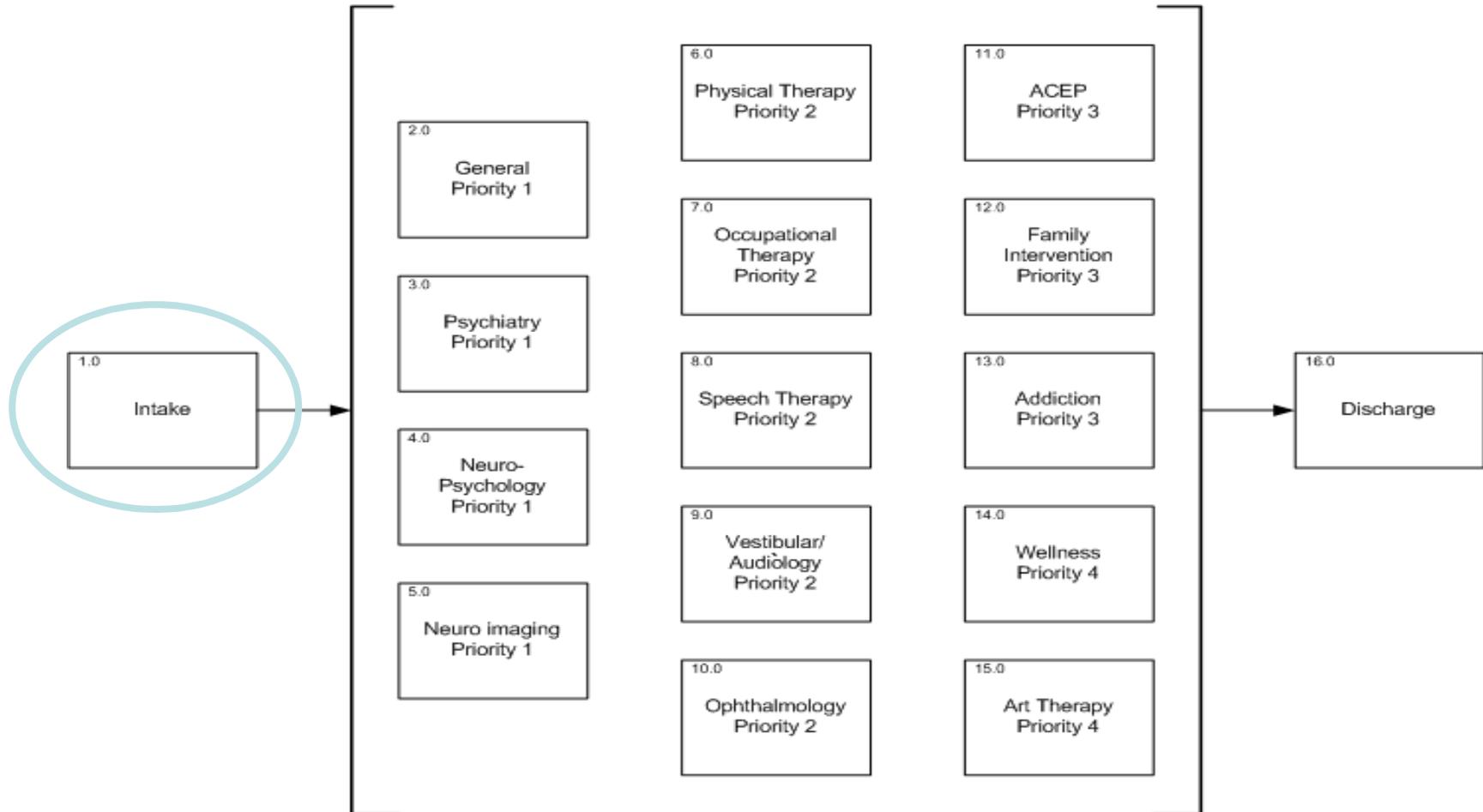
NICoE Process Map – Intake

Patients complete the listed activities on the first day they show up to NICoE.





Model Overview





Evaluations

- Physical / Neurological Examination
- Psychiatric / NeuroPsychological Evaluation
- Physical Medicine / Rehabilitation Evaluation
- Clinical Pharmacy Evaluation
- Neuroimaging Evaluation (MRI/fMRI/PET/CT/MEG)
- Vestibular / Audiology / Speech Assessment
- Neuro-Ophthalmology Testing
- Physiology (including Sleep Evaluation, Transcranial Doppler)
- Assistive Technology Lab / Virtual Reality
- Family Therapy / Wellness
- Art & Music Therapy
- Vocational Testing/Screening
- Complimentary and Alternative Medicine (CAM) Nutritional Evaluation
- Spirituality Assessment
- Substance Use Assessment



10 Core TBI Outcome Measures



- Glasgow Outcome Scale – Extended (GOS-E)
- Rey Auditory Verbal Learning Test (RAVLT)
- Trail Making Test (TMT)
- Processing Speed Index (from WAIS-III)
- Rivermead PCS Questionnaire (RPQ)
- Brief Symptom Inventory – 18 Item (BSI-18)
- Functional Independence Measure (FIM)
- Craig Handicap Asses & Rep Tech (CHART-SF)
- Satisfaction With Life Scale (SWLS)
- JFK Coma Recovery Scale – Revised (CRS-R)



NIGHT VIEW FROM PALMER ROAD SOUTH

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