



Automated Neuropsychological Assessment Metrics

Background

The Defense Department requires all service members to undergo a pre-deployment baseline neurocognitive assessment within 12 months of deployment. Establishing a neurocognitive baseline on all service members facilitates the ability to measure potential cognitive changes in individuals who are exposed to a concussive event. Automated Neuropsychological Assessment Metrics (ANAM) is one such measure that can be used to assess cognitive changes post-concussion and is the neurocognitive assessment tool the Defense Department is currently employing for use by all services.

Pre-Deployment

ANAM is a computer-based tool designed to detect both the speed and accuracy of attention, memory and thinking ability. Service members can complete the ANAM in an estimated 20 minutes on laptops using specialized software. The tests measure cognitive functions that are most likely to be affected by a concussion. ANAM provides a personal cognitive baseline for each service member so that after an injury, an individual's test performance can be compared to his or her own baseline. The assessment results are considered protected health information and become part of a service member's permanent medical record.

During Deployment

The completion of ANAM in theater can give front-line providers critical information for the evaluation and management of injured service members. If a service member experiences a traumatic brain injury (TBI), his or her ANAM test can be compared to their baseline score to assess for changes in cognitive function and to help inform return to duty decisions. ANAM baselines can be requested by a provider by contacting anam.baselines@amedd.army.mil. The test scores are stored on a master database, available with a rapid turnaround to any clinician who needs them via phone, fax or e-mail. There are ANAM test stations operating throughout Iraq and Afghanistan.

Post-Deployment

All service members receive the Post-Deployment Health Assessment (PDHA) immediately upon returning home and the Post-Deployment Health Reassessment (PDHRA) 90 days later with a health care provider. These questions identify service members who may be having persistent symptoms from their deployment. ANAM testing is an assessment tool that could be used by providers for anyone screening positive for TBI exposure on either of these screening instruments.

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Limitations

Current scientific evidence does not support the routine use of ANAM for assessment of all post-deployed service members. Rather, it is meant to assess a service member's neurocognitive function after a TBI by comparing his or her baseline scores prior to deployment. Furthermore, ANAM does not provide a medical diagnosis of TBI.

Cognitive tests provide information about cognition but by themselves do not diagnose the various factors and conditions that might bring about changes in test performance. Performance on cognitive tests including ANAM can be affected by factors other than brain injury, such as fatigue, anxiety and medications. Hence, cognitive tests such as ANAM are not effective methods for post-deployment screening of undetected concussions. While this prevents ANAM from being used as a TBI screening tool for all service members post-deployment, the Defense Department is conducting research

on methods of detecting concussion not dependent on past history. Additionally, the Army and Defense Department continue studies to further improve the assessment of cognition post injury.

Results

As of September 30, 2011, over one million baseline ANAM tests have been administered, and testing during the third quarter of 2011 was conducted at a rate of 20,000 service members per month.

Resources

- **Psychologists deploying with ANAM**—A two-page brochure providing guidance to deploying military psychologists on how ANAM tests the cognitive function of service members after experiencing a TBI
- **ANAM Brochure** — A guide on how ANAM is used

“Until ongoing studies to obtain evidence-based outcomes of various neurocognitive assessment tools are completed, the Services will use the Automated Neuropsychological Assessment Metrics to fulfill this requirement.”

—S. Ward Casscells, MD; Assistant Secretary of Defense (Health Affairs), Memorandum, May 28, 2008.