Longitudinal evaluation using the recently developed Defense Automated Neurobehavioral Assessment (DANA) tool of the cognitive impact of Electroconvulsive Therapy (ECT) in the treatment of Major Depressive Disorder (MDD)

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Major Depressive Disorder (MDD) has been a major source of morbidity and mortality, and is often associated with cognitive impairment. Little is understood about the cognitive effects of electroconvulsive therapy (ECT) during the treatment course among patients with MDD. The study represents a novel, automated assessment of the effect on cognitive functioning of patients receiving ECT treatment for MDD. The objectives of this study were to measure cognitive changes in MDD patients during their course of ECT treatment. We also correlated cognitive measures obtained by administering DANA with results of minimental status examinations (MMSE). DANA is a new neurocognitive assessment tool that includes a library of standardized cognitive and psychological assessments. A neurocognitive and psychological assessment battery was conducted on an electronic tablet with DANA software, throughout the course of ECT treatment. Results of DANA assessments were then correlated with standardized MMSE results employed for clinical purposes. Preliminary analyses of pilot data indicate that DANA performance correlated with MMSE in the majority of outcomes. The correlation between MMSE and aspects of the following tests gave an absolute correlation coefficient r>0.7, with p<0.0001: Code substitution, spatial processing, procedural reaction and simple reaction time. Correlation between MMSE and aspects of the stern berg memory search gave an even higher absolute correlation coefficient r>0.8, p<0.0001. The neurocognitive tests employed in the DANA mobile assessment were highly correlated with conventional MMSE measurements employed in the treatment of depressed patients undergoing ECT treatment. Results suggest that DANA is an effective tool for assessing cognition in patients with major depression.

Biography
Steven Royce Woods completed his MD at Howard University College of Medicine in Washington DC. He began his postdoctoral research experience at the Center for Autism and Related Disorders (CARD) at the Kennedy Krieger Institute in Baltimore MD, after which he completed 2 years of general pediatrics residency at the Children’s Hospital of Michigan in Detroit MI. He returned to Baltimore MD to continue his postdoctoral research at John’s Hopkins University School of Medicine in his current role as an e-health and psychiatry postdoctoral research fellow in the Department of Psychiatry and Behavioral Sciences. His research interests include studying cognition among patients with major depression, the use of technology to improve patient care, suicide prevention, and risk reduction among vulnerable groups.

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