



NIA ADC Clinical Task Force

UDS Neuropsychology Work Group April 2011

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GOAL

Move to UDS-Specific
Non-Proprietary
Neuropsychological
Test Battery



UDS WORKGROUP OPERATING PRINCIPLES

- Reduce/contain costs
- Eliminate restrictions on dissemination
- Create the best possible battery for advances in the field-
 - Cover relevant domains and levels of impairment for tracking normal cognitive aging to MCI to AD
 - Maintain continuity of data
 - Non-interference with other measures used by ADCs
 - Move the field forward-new technologies, domains, constructs not being measured
 - Unique to the ADC's



HARD ISSUES

- Avoidance of IP issues (Licensing, copyright)
 - Easy for paper and pencil tests
 - Harder for computer measures
- What is required for computerized solutions?
 - Quality control
 - Data handling
 - Amount of data, processing, summarizing



UDS WORKGROUP PROCESS

- **Review current instruments to assess their utility:**
 1. Carried out data analysis to confirm domain choices - ROC's for each of the current tests showed good discrimination between NC and MCI on the group level
 2. Partnered with other investigators, NIA sponsored meetings, large test surveys
 3. Computer solutions: NIH Toolbox, Commercial products



UDS WORKGROUP PROCESS

- Review copyright and IP issues as they affect our decision-making
- Smaller Work Grouplets by Domain
 - Review alternatives
 - Criteria for decision-making
 - Consider pros and cons of alternatives
 - Work Group consensus on recommendations
 - Recommendations to the CTF



Domains

EXISTING

- Processing speed
- Attention
- Episodic Memory-
Story Recall
- Language
- Executive Function

MISSING

- Visual Processing
- Non Verbal Memory
- List Learning
- Premorbid Measure



WHY COMPUTERIZED TESTING?

- Permits greater stimulus control and measurement of reaction time
- Improve sensitivity to detect very early changes over time
- Ease of data handling, summaries
- Wave of the future



WHAT CAN WE KEEP/SWAP?

CURRENT UDS SUBDOMAINS	UDS Test Current Measure	PAPER AND PENCIL KEEP/SWAP?	PAPER AND PENCIL ALTERNATES
Processing Speed	Digit Symbol	NO	NA
	Trails A	YES	NA
Attention/Working Memory	Digit Span F/B	SWAP	New items
Episodic Memory-Learning Immed/Delay Recall	Logical Memory A	SWAP	Craft Stories
Executive Function-Inhibition/Shifting	Trails B	YES	NA
Language-naming	BNT	SWAP	MINT (Gollan) 30 item
Language- semantic word fluency	UDS Animals Vegetables	YES	NA
GENERAL COGNITIVE MEASURE	MMSE	SWAP	MOCA Blessed IMC



WHAT SHOULD WE ADD?

NEW DOMAINS	New Measure
Visual Processing	UDS FTLD Module Benson Complex Figure Copy
Visual Memory	UDS FTLD Module Benson Complex Figure Delayed
Language- Lexical word fluency	UDS FTLD MODULE "L" and "F"
Premorbid Measure	AMNART



COMPUTER INSTRUMENTS

Expanded DOMAINS	New Measure Options
Attention	UDS FTLD Module/NIHTB Flanker CogState Identification Task
Episodic Memory	NIHTB Picture Sequence Memory CogState International Shopping List
Executive Functions	NIHTB List Sorting (w'g memory) NIHTB Dimensional Change Card Sort NIHTB Flanker

TOOLBOX: <http://www.nihtoolbox.org/Lists/video%20files/AllItems.aspx>

COGSTATE: <http://www.cogstate.com/go/research>



WHAT REMAINS

- Discuss recommendations with CTF
- Plan feasibility study for new measures
- Consider computer options based on incoming information and make recommendations when available
- INVITE INPUT FROM ADC's: Your experience with recommended measures



Feasibility Study

- Compare new tests/items with current battery
- Gradually phase out current battery based on results
- Gradually introduce computer tests as indicated



THANK YOU