

Issues of Neuropsychological Assessment in International Settings

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Neuroaids: Progress Through International Research

■ Issues to Address

- » Scientific Objectives: especially, what can international studies do to provide **incremental** knowledge
- » Approaches: e.g., cast a wide net? Drill deeper with more selected samples? these depend on scientific objectives
- » Method Standardization: to assure global relevance, comparability, generalization
- » Regulatory simplification/harmonization (bureaucrolysis)



NeuroAIDS: Progress Through International Research

- **Scientific:** contributions to HAND/DSPN of
 - » Virus, e.g., Clade
 - » Host, e.g., genotype, unique background vulnerability (history of abuse, malnutrition)
 - » Cofactors (e.g., coinfections - HCV, malaria, TB)
 - » ARV (regimen, timing, interaction with viral resistance, host genetics, coinfections - e.g., risk for IRIS)



NeuroAIDS: Progress Through International Research

- **Approaches:** need to be tailored to objectives
 - » For questions of epidemiology of neuroAIDS, changes in relation to treatment, clinical correlates, etc. we need to observe large numbers of cases, and methods need to be adapted to be appropriate to work in field or community clinic
 - » neuroAIDS relevant measures should be added to ongoing cohort studies, e.g., leDEA
 - » Advantages: representativeness, feasibility, low cost
 - » Limitations: lack of detailed, multimodal characterization, possible lack of sensitivity to early, less severe neuroAIDS



NeuroAIDS: Progress Through International Research

- **Approaches:** need to be tailored to objectives
 - » For questions on neuropathogenesis, mechanisms, we need in depth multimodal (e.g., NP, imaging, CSF, biomarker, neuropathologic) assessment; or for questions re global commonalities/differences in neuroAIDS
 - » Will require well trained multidisciplinary teams with appropriate infrastructure (e.g., regional center of excellence)
 - » Advantages: sensitivity, convergent validity, possibility of analyses for consistency with theories of injury; also, resource building permitting future local initiated research; development of common methodologies
 - » Disadvantages: less representative samples; higher up front investment; limited to urban settings with some existing infrastructure



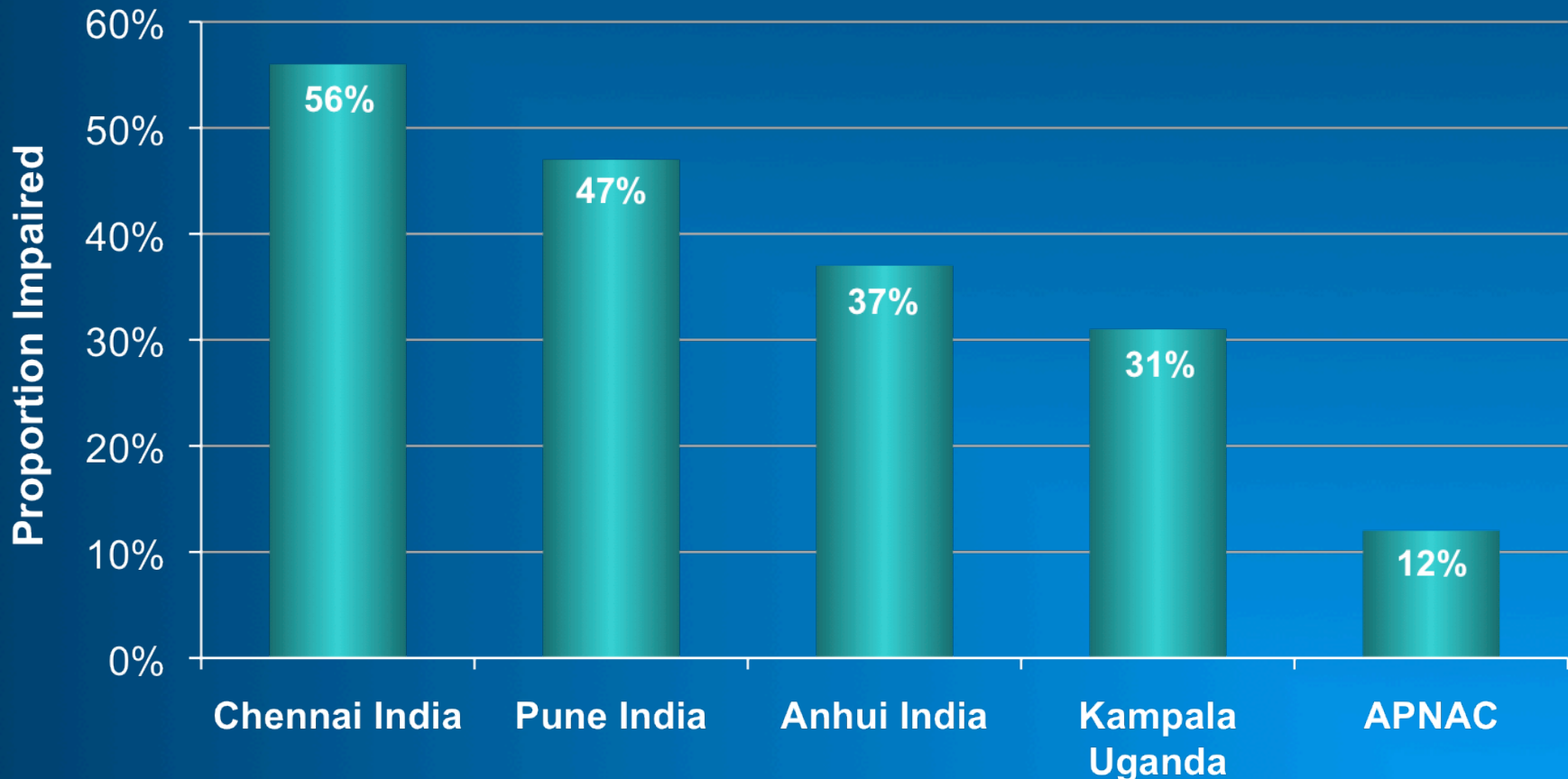
NeuroAIDS: Progress Through International Research

Standardization in case ascertainment, diagnosis, laboratory methods, data management is essential to avoid apparently contradictory, non-replicable findings

Example of challenges in neurocognitive assessments in international settings



Lack of Comparable, Reliable Diagnostic Methods Impedes International NeuroAIDS Research and Treatment



Yeptomi, J., International Neuropsychological Society, 2006; Unpublished Data, NARI-UCSD Collaboration, 2006; Unpublished Data, China CDC-UCSD Collaboration, 2007; Wong et al, Neurology, 2007; Wright et al, XVI International AIDS Conference, 2006



HNRC Core International NP Battery

- **Verbal Fluency**
 - » Letter Fluency
 - » Category Fluency
- **Information Processing Speed**
 - » WAIS-III Symbol Search
 - » WAIS-III Digit Symbol
 - » Trail Making Test Part A /
 - » Color Trails Test part 1
- **Attention/Working Memory**
 - » Paced Auditory Serial Addition Test
 - » WMS-III Spatial Span
- **Learning and Memory**
 - » Hopkins Verbal Learning Test
 - » Brief Visuospatial Memory Test
- **Abstraction/Executive**
 - » Category Test
 - » Wisconsin Card Sorting Test
 - » Color Trails Test part 2
 - » Stroop Color-Word Test
- **Motor**
 - » Grooved Pegboard

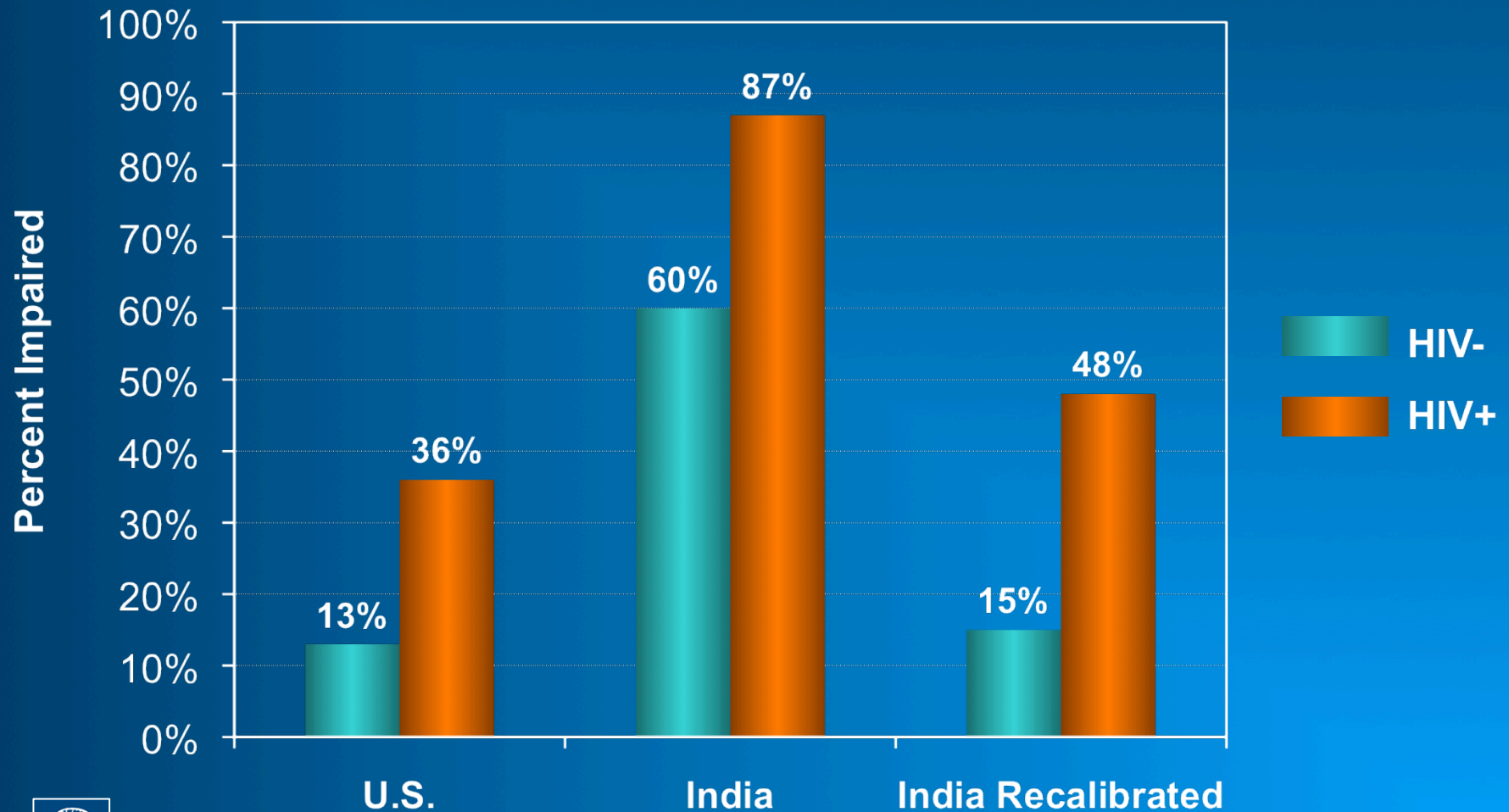
Screening for Effort: Hiscock Memory Test

Everyday Functioning: Patient's Assessment of Own Functioning, Activities of Daily Living Scale

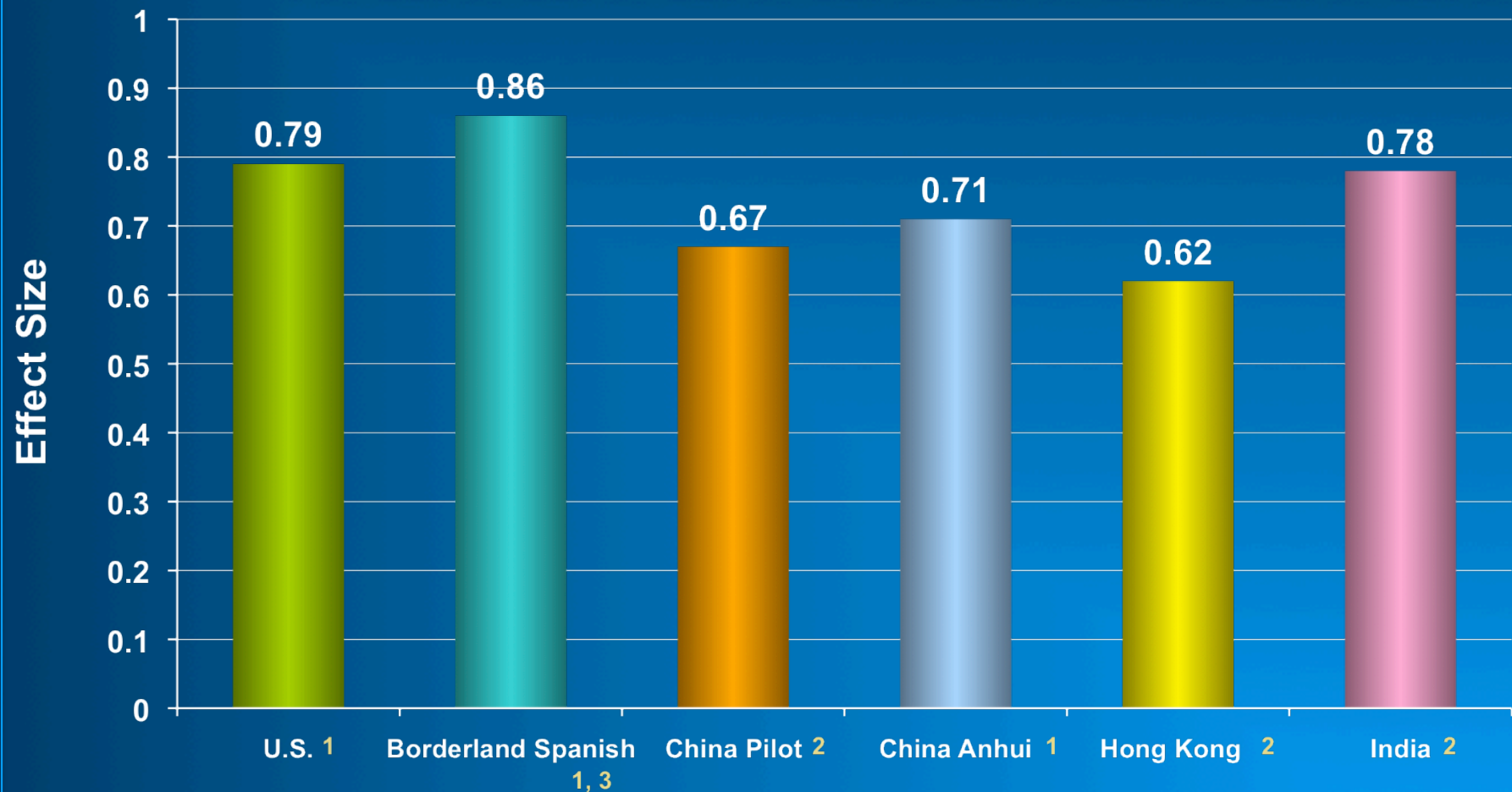
Versions currently available: French, Hausa, Mandarin, Marathi, Portuguese, Romanian, Spanish, Afrikaans



Neuropsychological Impairment Rates in India and the U.S.



HIV Effect Size Across Countries



¹ Population-specific mean T-scores; ² Based on U.S. mean T-scores; ³ HIV- = 180; HIV+ = 155

HNRC Data



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