

Scaling Alzheimer's Trials Globally: Speech-based Cognitive Assessments Prove Feasible Across Diverse Populations

The Challenge

- Most trials to date have recruited primarily in Western regions, creating a need for broader inclusion.
- Limited internet connectivity and unreliable local infrastructure can hinder remote deployments, particularly in rural or low-resource settings.
- Sites need culturally tailored tools that account for both language and dialect nuances.
- Varying degrees of digital literacy pose a hurdle for digital assessments.



The Solution

A global initiative by the Davos Alzheimer's Collaborative (DAC) shows the Speech Biomarker for Cognition (SB-C) is easy to deploy in remote clinical trials. In *over 1,500 participants* across Egypt, Kenya, Chile, and India, SB-C proved to be:

- **Scalable and Accessible:** Adapted to Arabic, English, Swahili, Spanish, and Hindi for diverse populations.
- **Fast and Efficient:** Sites onboarded up to 1,169 participants quickly, with assessments completed in as little as 5 minutes.
- **Highly Usable:** Achieved success rates of 86–95%, even with spotty internet and varying digital literacy.

The Impact

- **Feasibility Across Settings:** SB-C has proven viable in sophisticated urban research centers and remote rural clinics alike.
- **Flexible Integration:** SB-C can be used as a prescreening tool, monitoring device, or for supporting protocol enrichment in multi-country Alzheimer's clinical trials.
- **Robust Data Handling:** The platform handled extreme outliers and logging errors robustly, with adaptive cohort and education-matched controls ensuring valid data across diverse settings.

This scalable solution combines classic cognitive paradigms with innovative digital and AI-driven solutions to advance dementia care in limited resource settings.

Dr. Karen Blackmon
(Nairobi, Kenya)

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This partnership has transformed how we approach cognitive assessments in our global studies, redefining what's possible in remote clinical research across diverse populations. It has been instrumental in demonstrating that cutting-edge speech biomarkers can work seamlessly from urban research centers to rural clinics worldwide.

About ki:elements

ki:elements, a spin-off of the German Research Center for AI (DFKI), has been *pioneering speech-based assessments* since 2017. Our interdisciplinary team of clinical researchers, psychologists, clinicians, and data scientists transforms speech into validated digital biomarkers and clinical outcome assessments, *delivering trusted insights* across disease areas.

This case study was adapted from the poster "Challenges and best practices for adopting and implementing digital cognitive assessments in LMICs" presented by Alexandra König, Janna Herrmann, Brett Veitch, Johannes Tröger, Nicklas Linz, Karen Blackmon, Mohamed Salama, Rashmin Gandhi, Sandra Cortés, Javiera Leniz, Irene B. Meier, Vaibhav Narayan at AAIC 2025.