

Beyond Accuracy: Participant-Centered Value and Feasibility of Two-Stage Alzheimer’s Screening

Carla VandeWeerd, PhD¹; David Wilson, PhD²; James E. Galvin, MD, MPH³; Mitchell Roberts, PhD¹; Lindsey Mette, MS, MPH, CGC²; Catherine Tallmadge³; Erica Sappington, PhD¹; Zachary Fernandes, MBA²; Heather M. Harris³; Roma Tremblay, APRN, DNP¹; Jorge Marques Signes, PhD²; Paul W. Estes³; Kylee Corneliussen¹; Michael Jaffee, MD⁴

¹UF Precision Health Research Center, University of Florida, The Villages², FL, USA; ²Quanterix³, Billerica, MA, USA; ³Cognivue⁴, Victor, NY, USA; ⁴Department of Neurology, University of Florida, Gainesville, FL, USA



Among 520 community-based older adults, two-stage cognitive and blood-based biomarker AD screening was feasible, rapidly completed, and highly valued — with value extending to perceived utility, willingness to pay, trust, and potential behavioral change and clinical engagement.



Background

- Early detection of Alzheimer’s disease (AD) remains limited by access to scalable, acceptable, and cost-efficient screening approaches.
- Two-stage models that combine digital cognitive assessment with blood-based biomarkers may improve population-level risk stratification, but prospective evidence on participant-centered value and real-world feasibility remains limited.
- This study evaluated feasibility, participant experience, perceived value, willingness to pay, and behavioral intentions associated with a community-based, two-stage AD risk assessment model.

Methods

- Adults ≥55 from a large U.S. retirement community completed:
 - Cognivue Clarity[®] cognitive assessment with CARM risk classification.
 - The Cognivue Clarity[®] is scored on an age-adjusted scale of **0–100** with lower scores suggesting higher levels of impaired cognitive performance
 - Cognitive Amyloid Risk Measure (CARM) score is reported across **four risk levels**, with levels **1–2 indicating lower amyloid risk** and levels **3–4 indicating higher amyloid risk**.
 - LucentAD[®] Complete blood test
 - LucentAD[®] Complete provides a risk score on a scale of 0–100 with higher scores indicating a greater likelihood of amyloid pathology
 - Scores are categorized as low (<45) , intermediate (45–70), and high (>70)
 - Participant centered value and experience survey.
- Participants were stratified into risk categories using a prospective decision-tree framework; participant-reported outcomes then assessed perceived utility, value, experience, willingness to pay, and behavioral intent such as discussing results with a clinician.
- Descriptive statistics summarized participant responses, and chi-square, Welch’s t-tests, correlation/regression, Kruskal-Wallis, and trend tests examined exploratory group differences and associations with perceived value of the screening model.

Participant Characteristics and Screening Profile

Characteristic	Result
Total Sample, N	520
Age, mean ± SD	73.4 ± 7.0
Female	282 (54.2%)
Bachelor’s Degree or Higher	337 (64.8%)
PHQ-4 ≥3, n(%) - mild or greater psychological distress symptoms	73 (14.0%)
CARM lower amyloid-risk group (1–2), n (%)	123 (23.7%)
CARM higher amyloid-risk group (3–4), n (%)	397 (76.3%)
Cognivue Clarity [®] Overall Score, mean ± SD; 0–100, lower scores indicate greater impairment	72.1 ± 10.6
Lucent AD [®] Complete risk score, mean ± SD	39.7 ± 24.5
Lucent AD [®] Complete Risk Category, n (%) low / intermediate / high	366(70.4%) / 72(13.8%) / 82(15.8%)

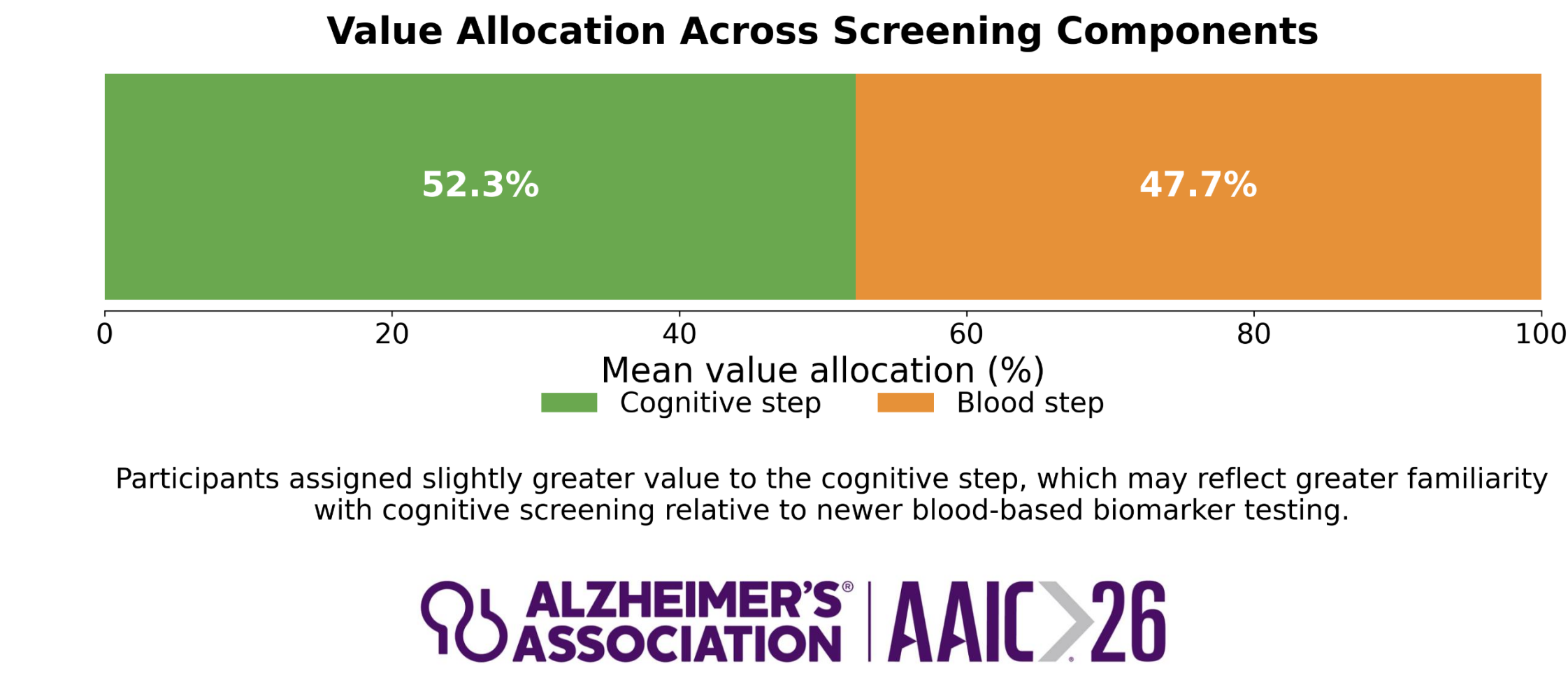
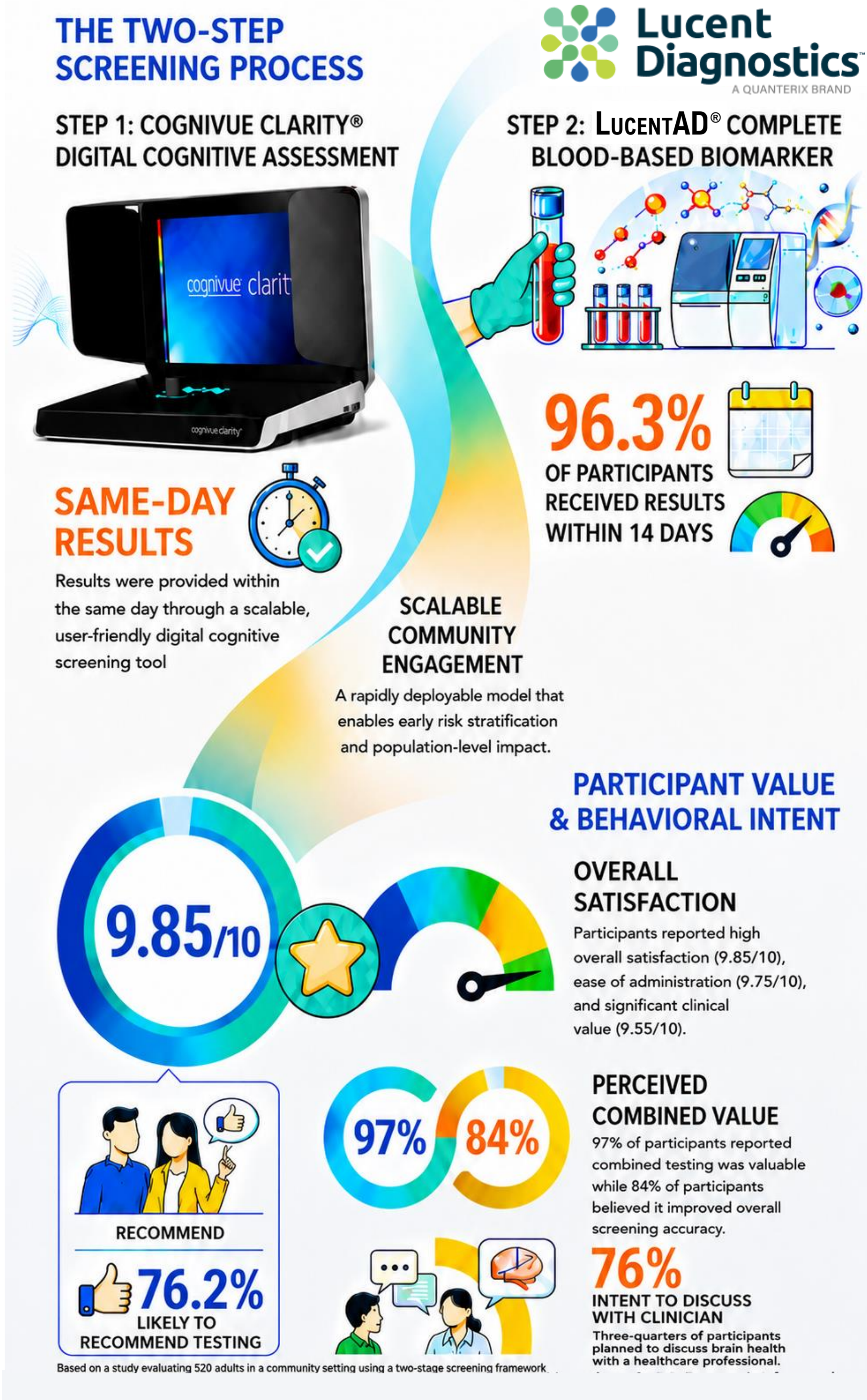
Operational Feasibility

520 Screened	77 Days Screening Period
Same Day Results Cognivue Clarity [®] with CARM Results	96.3% Blood Results ≤14 days
Mean blood-result turnaround: 7.6 days	

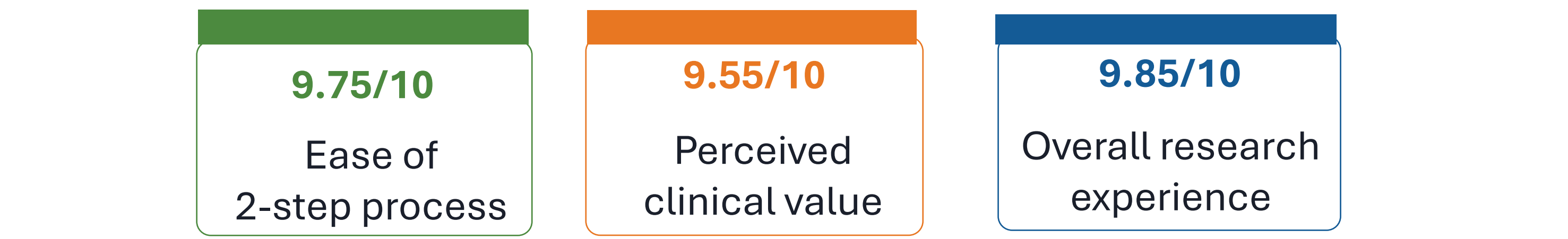
Conclusions / Implications

As digital cognitive assessments and blood-based biomarkers become more available, patients and providers will need screening models that are trusted, valued, and actionable. This community-based two-stage **approach showed high participant satisfaction, perceived value, and intent to discuss results with clinicians**, supporting its **potential to guide follow-up, prioritize referrals, and improve efficient use of specialty resources**.

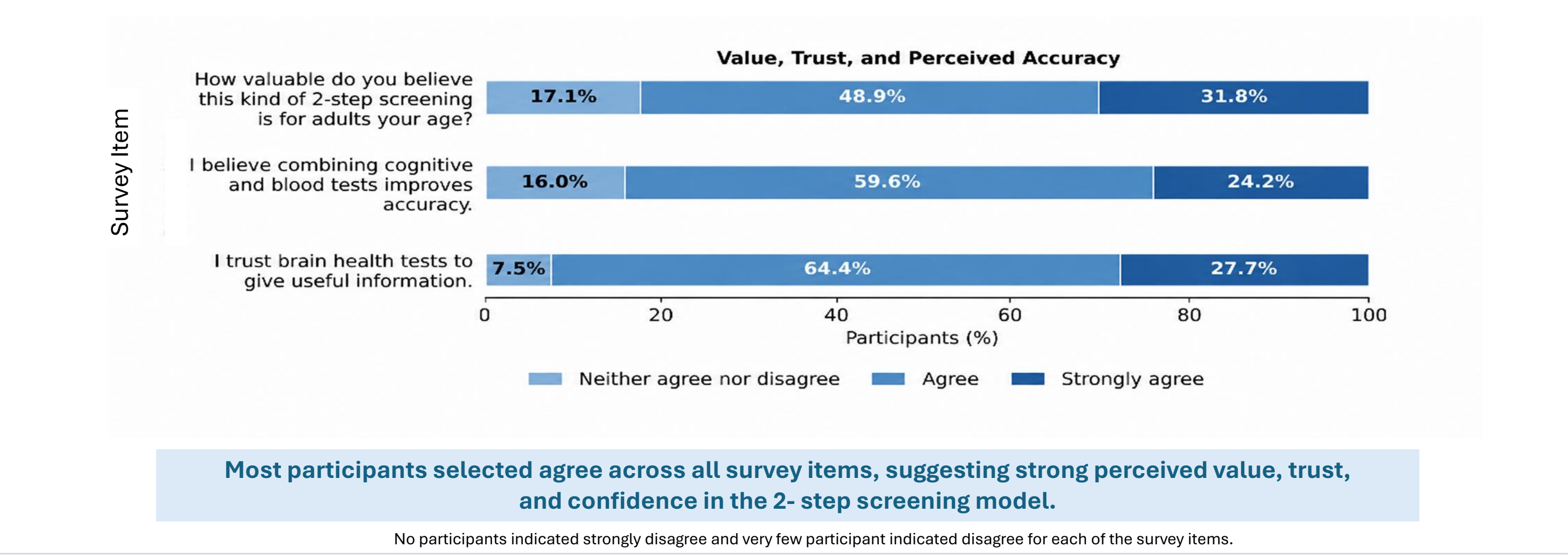
Two-Stage Screening Process with Value Domains



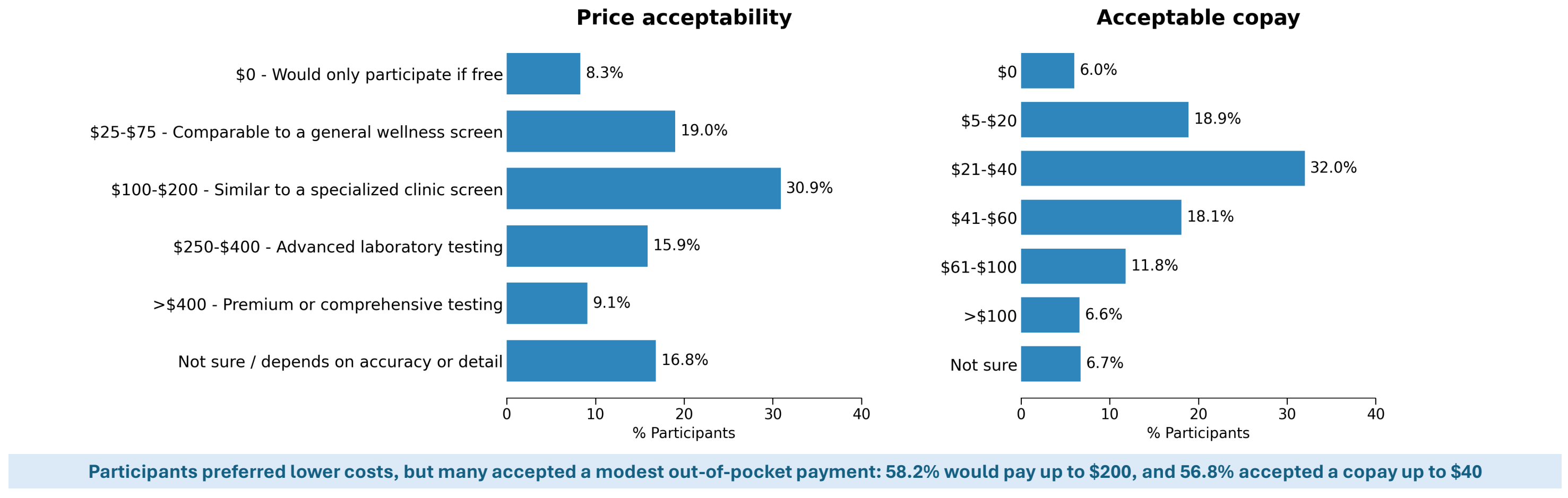
Participant Experience (N=520)



Participants Valued Combined Digital Cognitive + BBM Screening for AD Risk



Willingness to Pay / Acceptable Copay



Exploratory Findings: Factors Associated With Perceived Value

Finding	Key Result	Interpretation
Women reported higher perceived value	86.8% of women vs. 73.5% of men agreed/strongly agreed that the model was valuable for adults their age ($p < .001$).	Women perceived greater age-relevant value from the two-step screening model.
Higher PHQ-4 scores were linked to slightly lower value	PHQ-4 was weakly associated with lower overall value ($r = -.09$, $p = .046$; $\beta = -0.71$ per 1-point increase).	Emotional symptom burden may slightly reduce perceived value, though overall value remained high.
Higher CARM risk was linked to higher clinical value	Higher CARM risk showed a small positive trend with perceived clinical value ($p = .009$).	Higher-risk feedback may increase the perceived clinical relevance of screening.

Key Takeaways

- Scalable community deployment:** 520 older adults were screened in ~10 weeks, with immediate cognitive/CARM output and timely blood-based biomarker return.
- High participant acceptance and perceived value:** Participants reported strong satisfaction, trust, perceived utility, and willingness to pay for the combined cognitive + blood-based screening model.
- Potential to improve triage while supporting reassurance:** Cognitive triage plus biomarker adjudication may help identify individuals appropriate for expedited specialty referral while providing lower-risk participants with reassurance, monitoring guidance, or non-AD follow-up pathways.
- Actionable patient engagement:** Most participants intended to discuss brain health results with a clinician, supporting the model’s potential role in real-world AD risk communication and follow-up care.

