



# **Qualification of Depression and Anxiety AI-COA through ISTAND**

**Marc Aafjes, CEO, Deliberate AI**

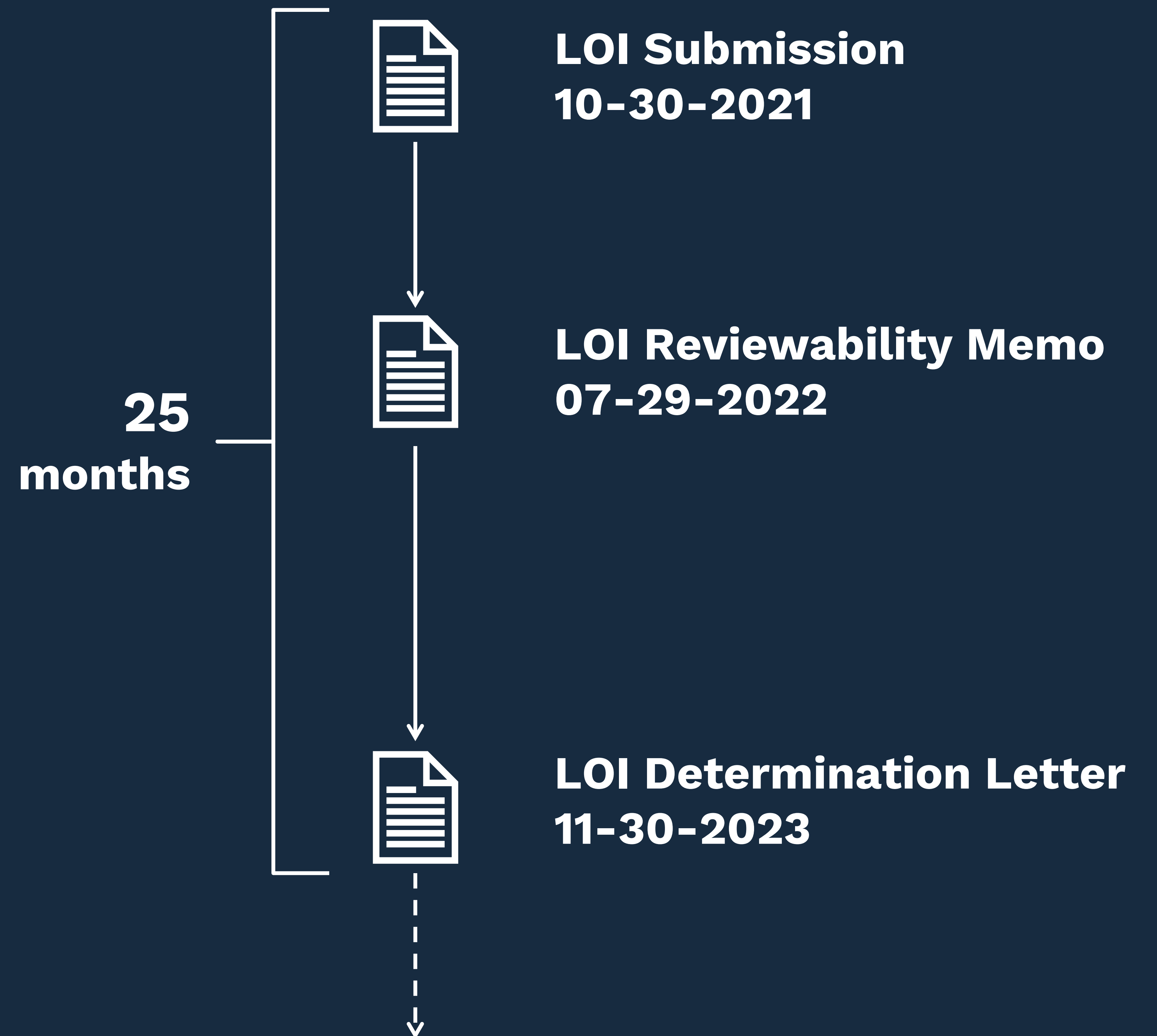
ISCTM, 22<sup>nd</sup> Annual Scientific Meeting, 20 February 2026

# DISCLOSURES

- Shareholder and employee of Deliberate Solutions, Inc. (DBA “Deliberate AI”)
- Honorarium from Sanofi
- Grants:
  - FDA
  - NIMH
  - DARPA/DOD
  - Wellcome Trust
- FNIH involvement:
  - Steering Group, and Co-Chair of Data Science Working Group MAP-D (Depression Heterogeneity)
  - Steering Group of Neuroscience Biomarker Consortium
  
- AICOA is a registered trademark of Deliberate AI

# The LOI review of AICOA to the Innovative Science and Technology Approaches for New Drugs (ISTAND) Program took 25 months

- **ISTAND = the “other DDT” lane: for tools that don’t fit existing pathways**
- **Built for novel tech: e.g., AI/DHT, in-vitro platforms, new trial-enabling tech**
- **Selective intake: FDA adjudicates LOIs (need, feasibility, FDA bandwidth) before acceptance**
- **If qualified: defined Context of Use, public listing, and broad re-use vs sponsor-only fit-for-purpose tools.**



# AICOA pursues a **pragmatic progressive regulatory qualification** strategy starting with a human-in-the-loop hybrid endpoint

## Real-time Monitoring

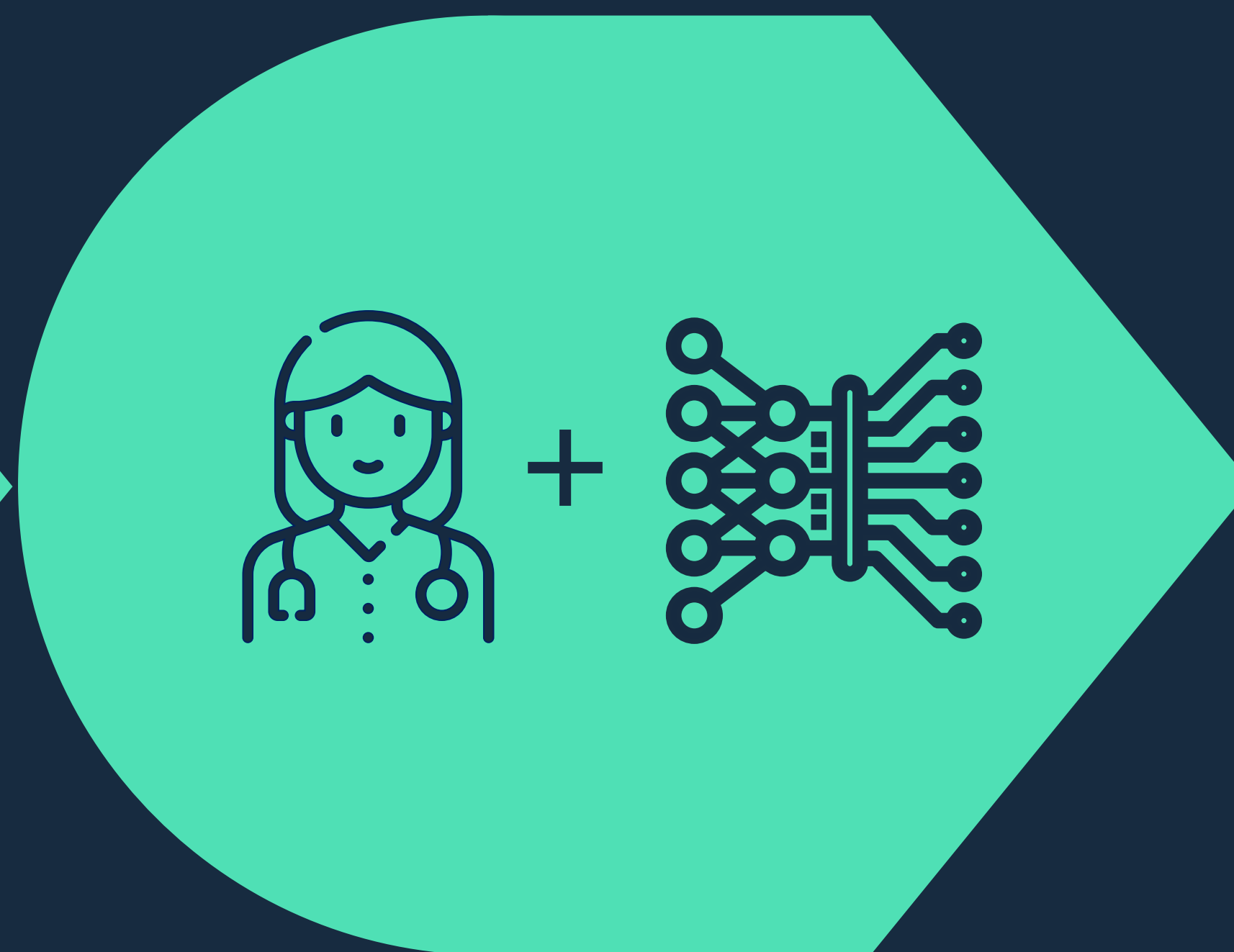
Enhanced Endpoint Quality Assurance:  
Real-time & Targeted (not regulated)



**ACTIVE TODAY**

## Hybrid Endpoint

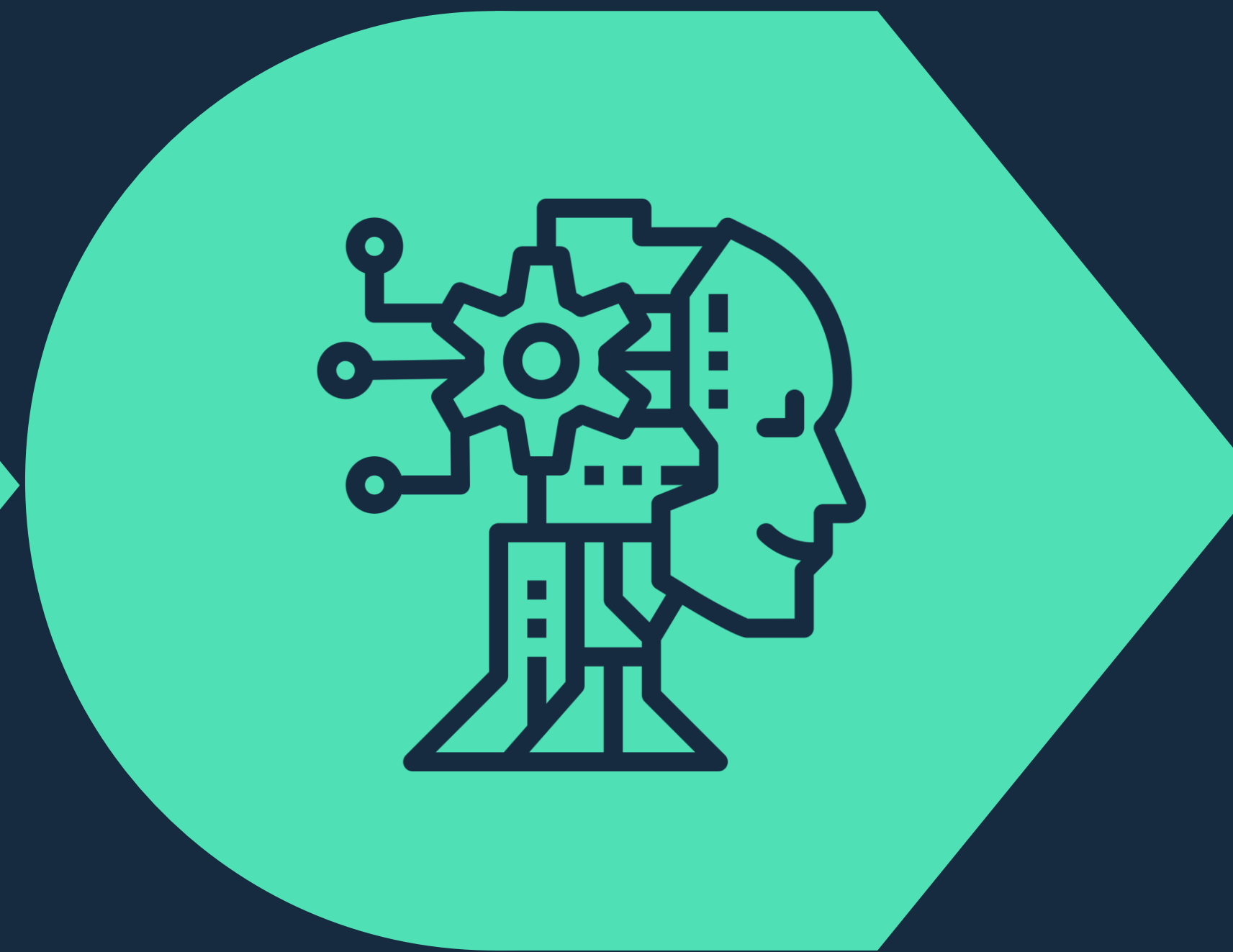
Increased Effective Reliability  
with additional AI-COA™ rating



**ISTAND FOCUS**

## Replacement

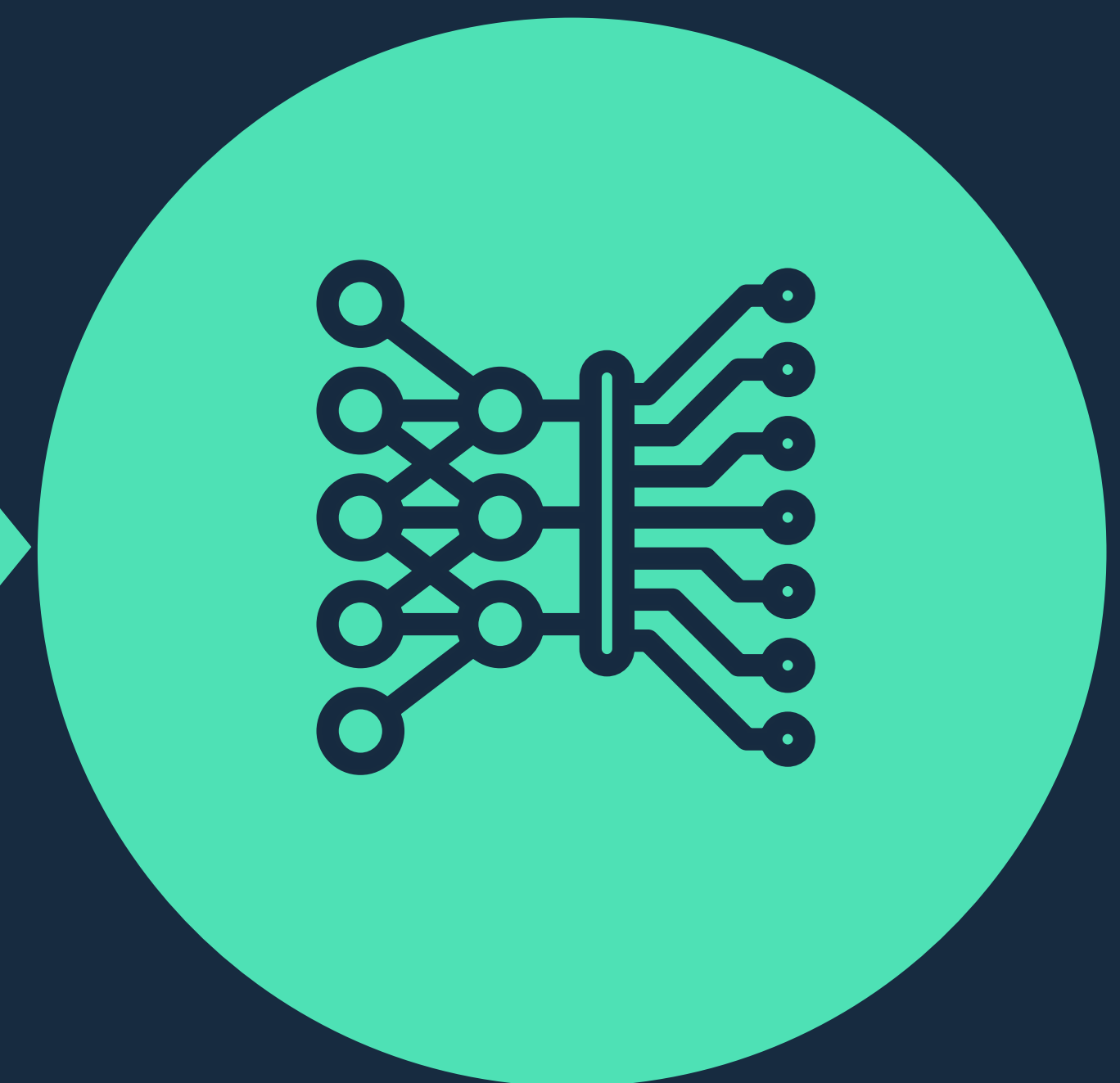
Eliminate interview variance &  
establish end-to-end process



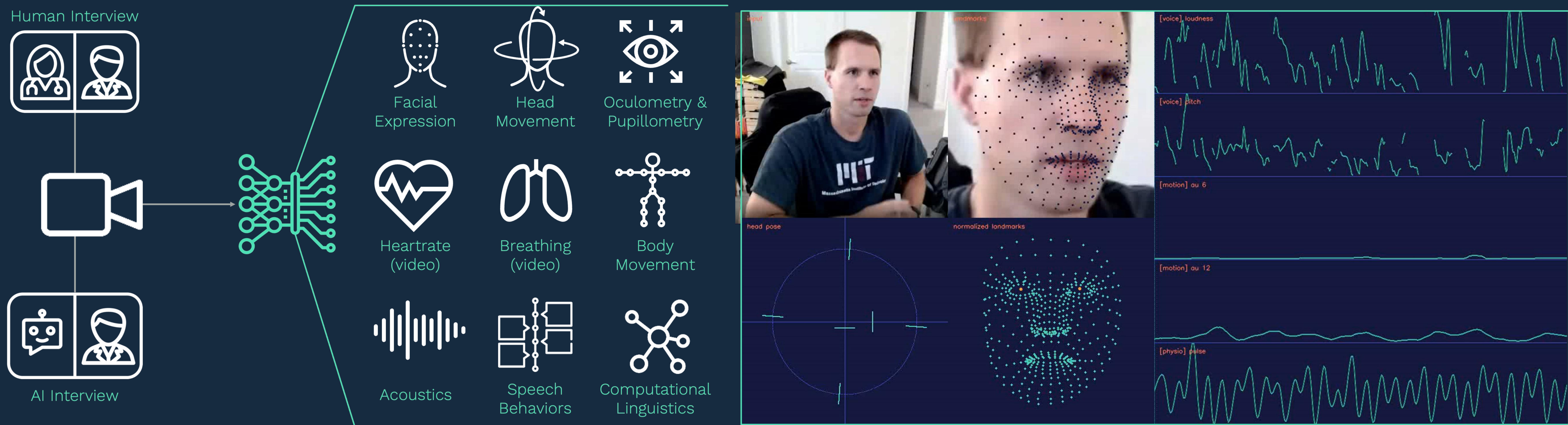
**CURRENT RCT**

## RAPID™

Brief interactions (Real-time  
Assessment and Precision)



# AICOA is a combination of multiple behavioral and peripheral physiological **measures collected from audio-video signals**



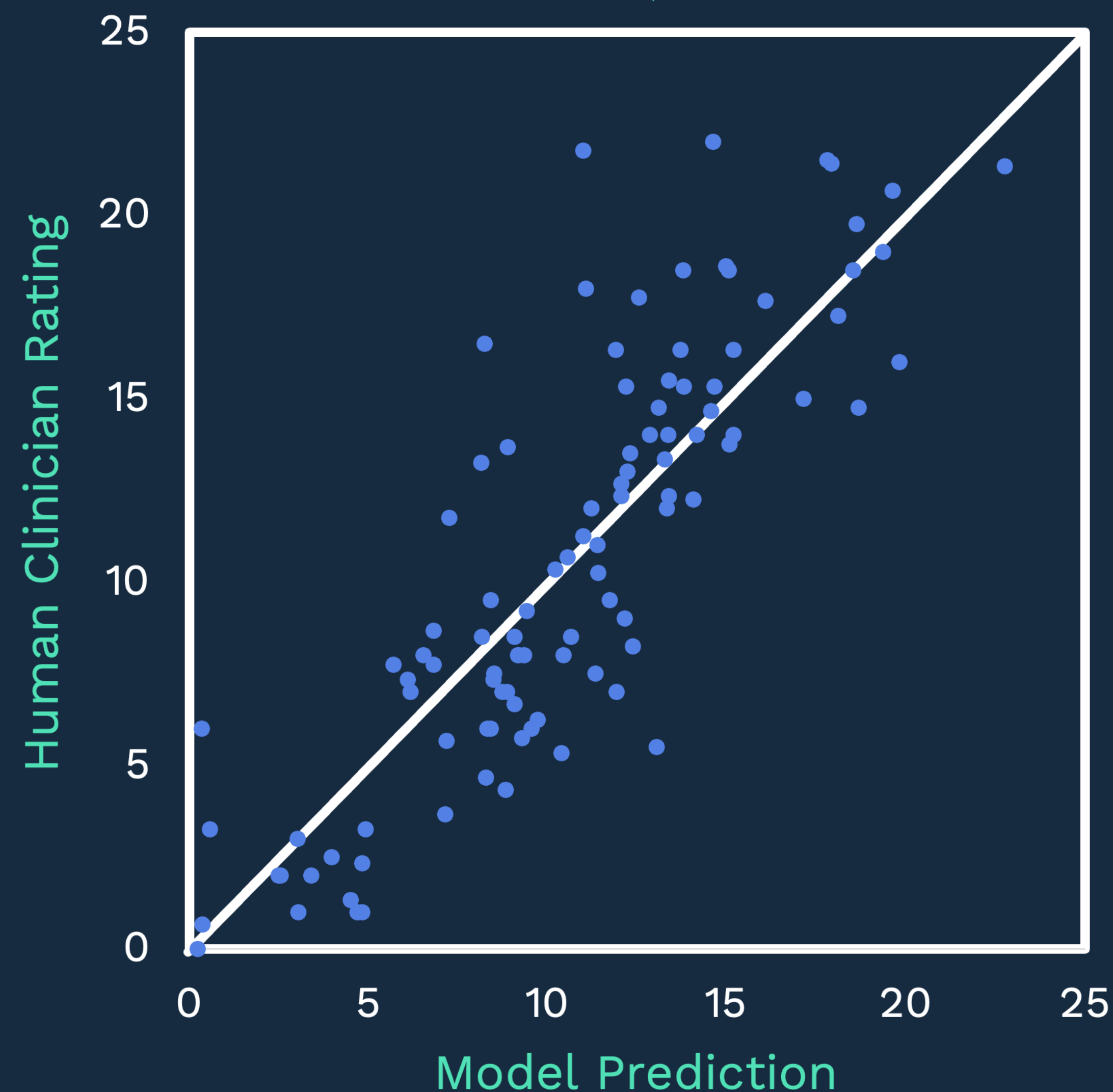
AICOA has demonstrated **concurrent validity with existing endpoint** scales, and exceeds typical reliability of raters at sites

Performance of Depression and Anxiety AI-COA™ Pilot Study  
(10-fold cross-validation, plot shows randomly selected data points)

**HAM-D17**

**ICC: 0.86**

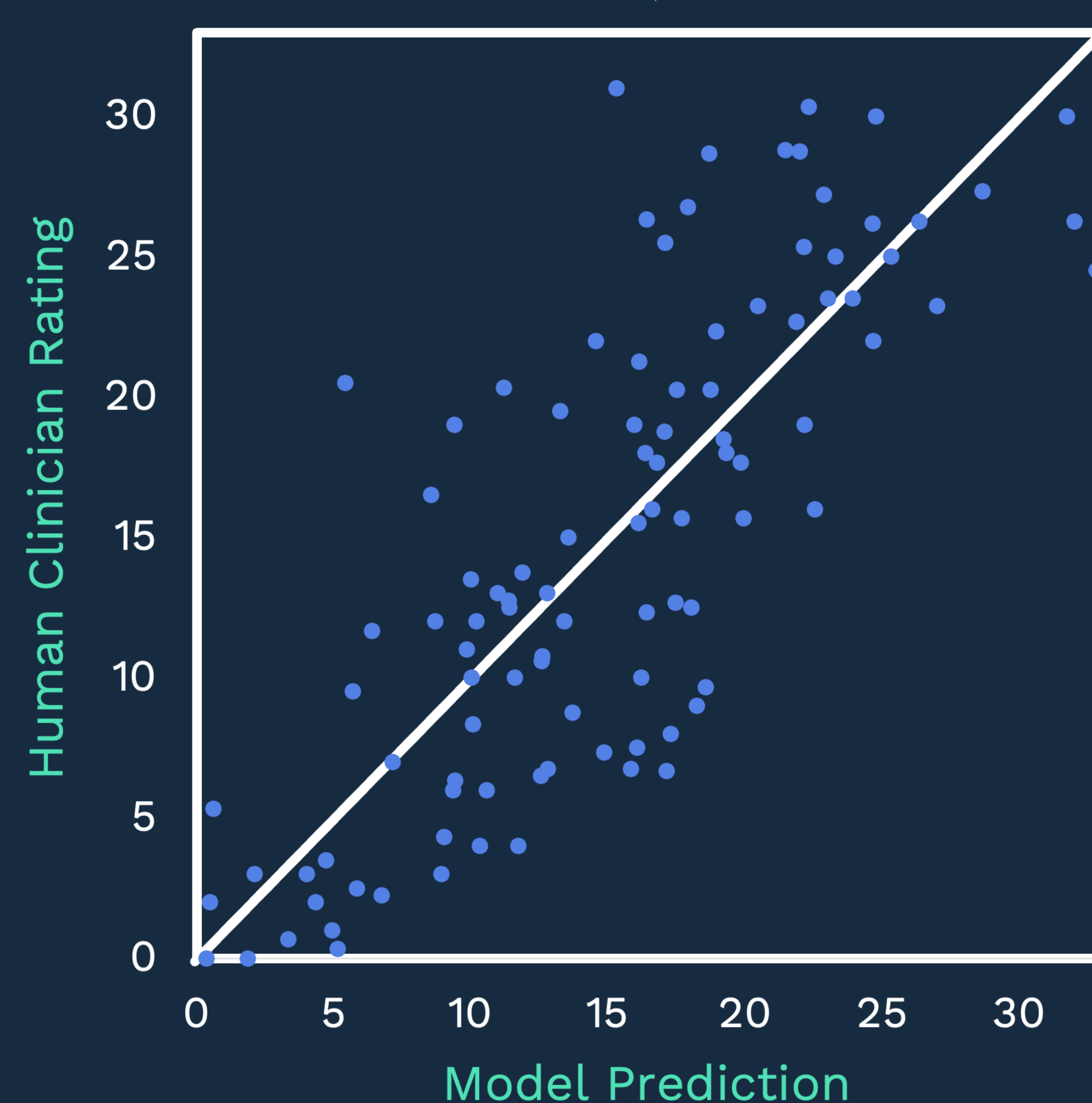
RMSE: 2.99 | MAE: 2.32



**MADRS**

**ICC: 0.82**

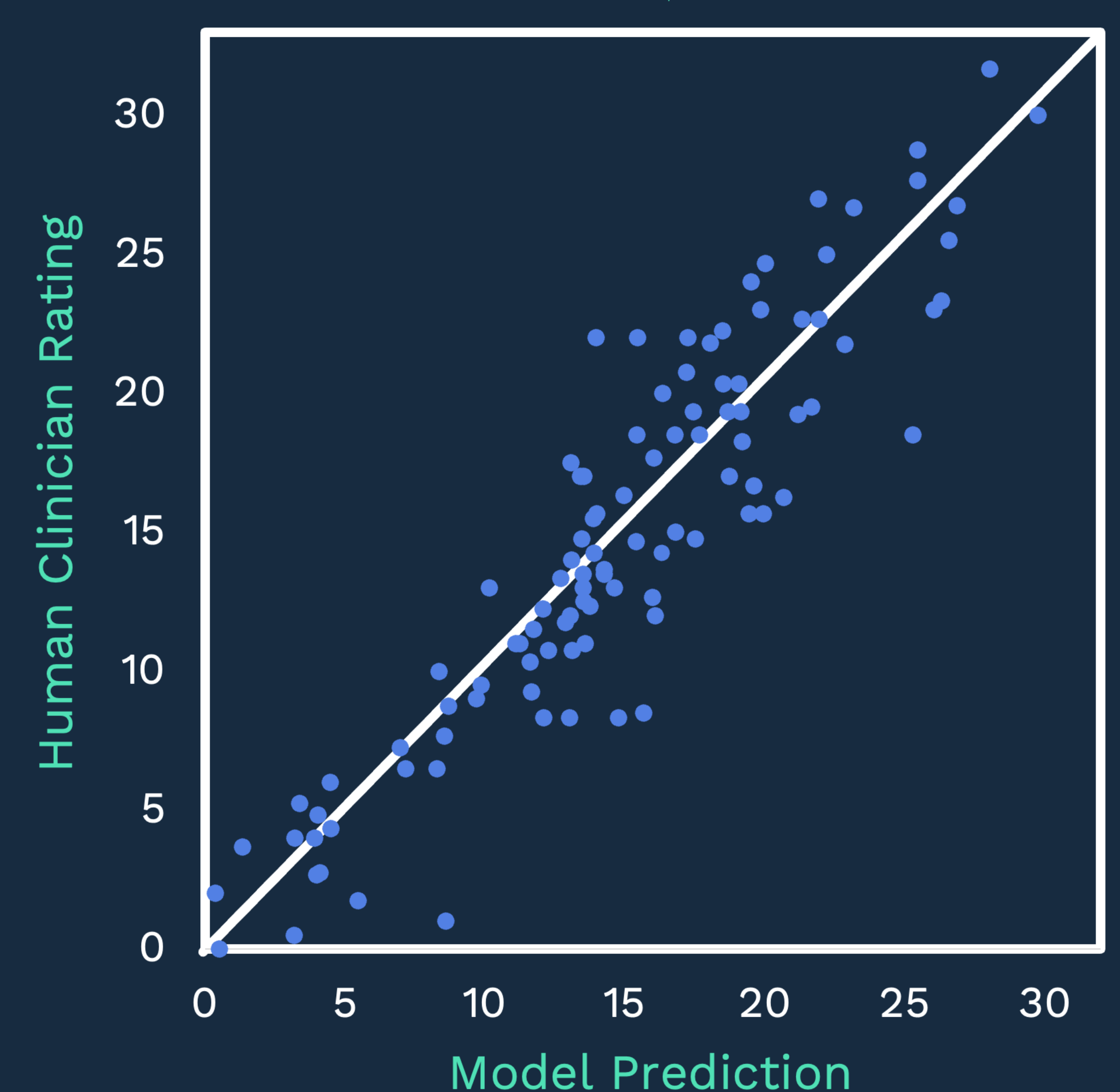
RMSE: 5.10 | MAE: 4.09



**HAM-A**

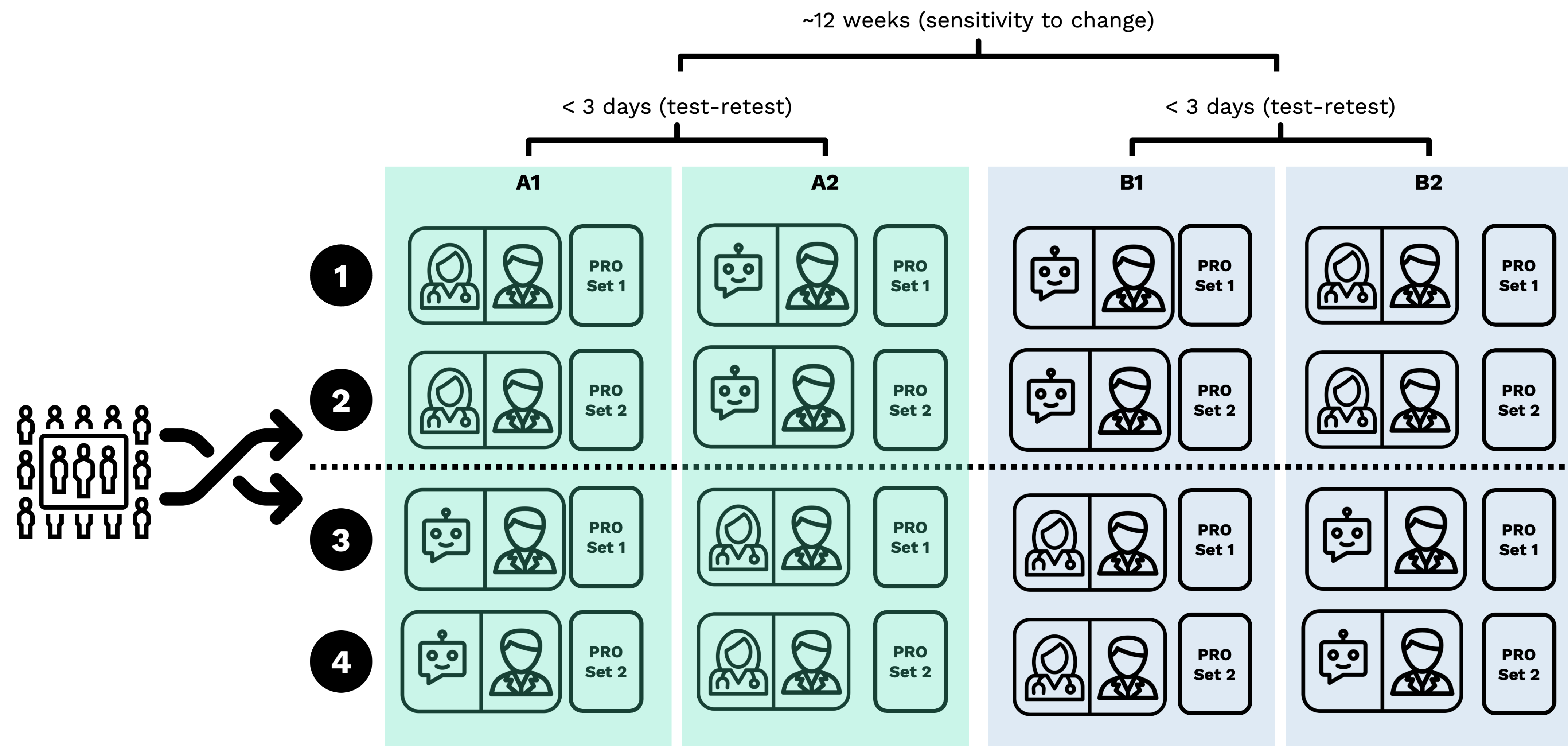
**ICC: 0.92**

RMSE: 2.90 | MAE: 2.33



We're currently completing a non-inferiority RCT to demonstrate we can also use conversational AI agents for conducting the interview

- Stratified non-inferiority RCT (NCT06923995); readout Q1
- N=120 U.S. adults (18–65) with MDD and HAMD-17 >10
- Two-sequence, four-period, repeated-measures design (A1/A2/B1/B2)
  - 1:1 allocation to AI→Human vs Human→AI at A1/A2
  - Sequences inverted at B1/B2



Our SEQUOIA program is a **series of clinical validation studies** for AICOA (content validity, shading)

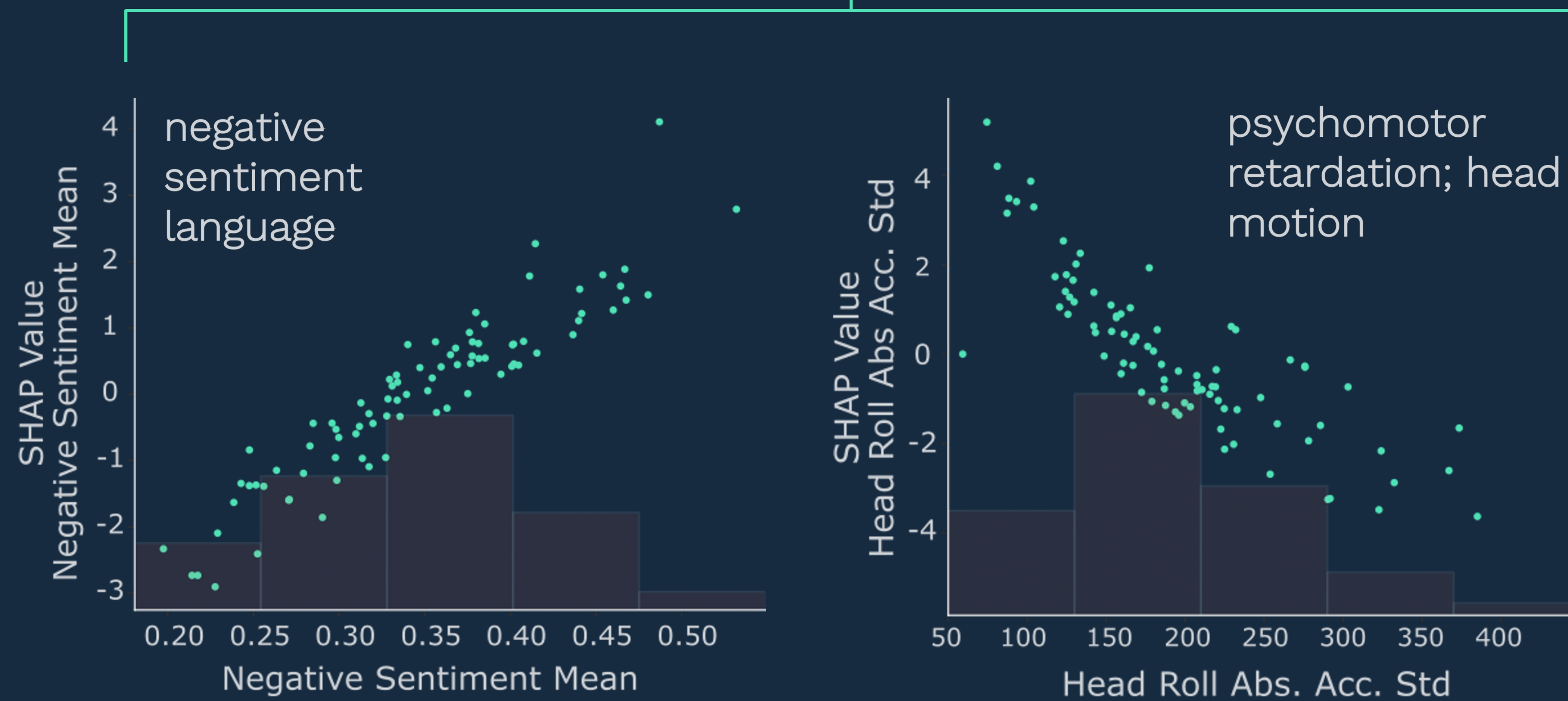


Aspect	Existing Cohorts	SEQUOIA-1 (NCT06923995)	SEQUOIA-2 (NCT07279025)	SEQUOIA-3 (NCT07279038)	SEQUOIA-M (TBC)	SEQUOIA-G (TBC)
Concurrent Validity	X					
Convergent Validity	X	X	X			
Discriminant Validity	X	X	X			
Temporal Stability / Test-retest		X	X		X	
Responsiveness / Sensitivity to Change	X	X	X			X
Subgroup Analysis (Fairness)		X		X		
Model Robustness			X	X		
Time-to-Stability (TTS)	X	X	X			
Input (MOP) Robustness		X	X	X		
Prospective Validation / Holdout				X		
International Generalizability					X	X

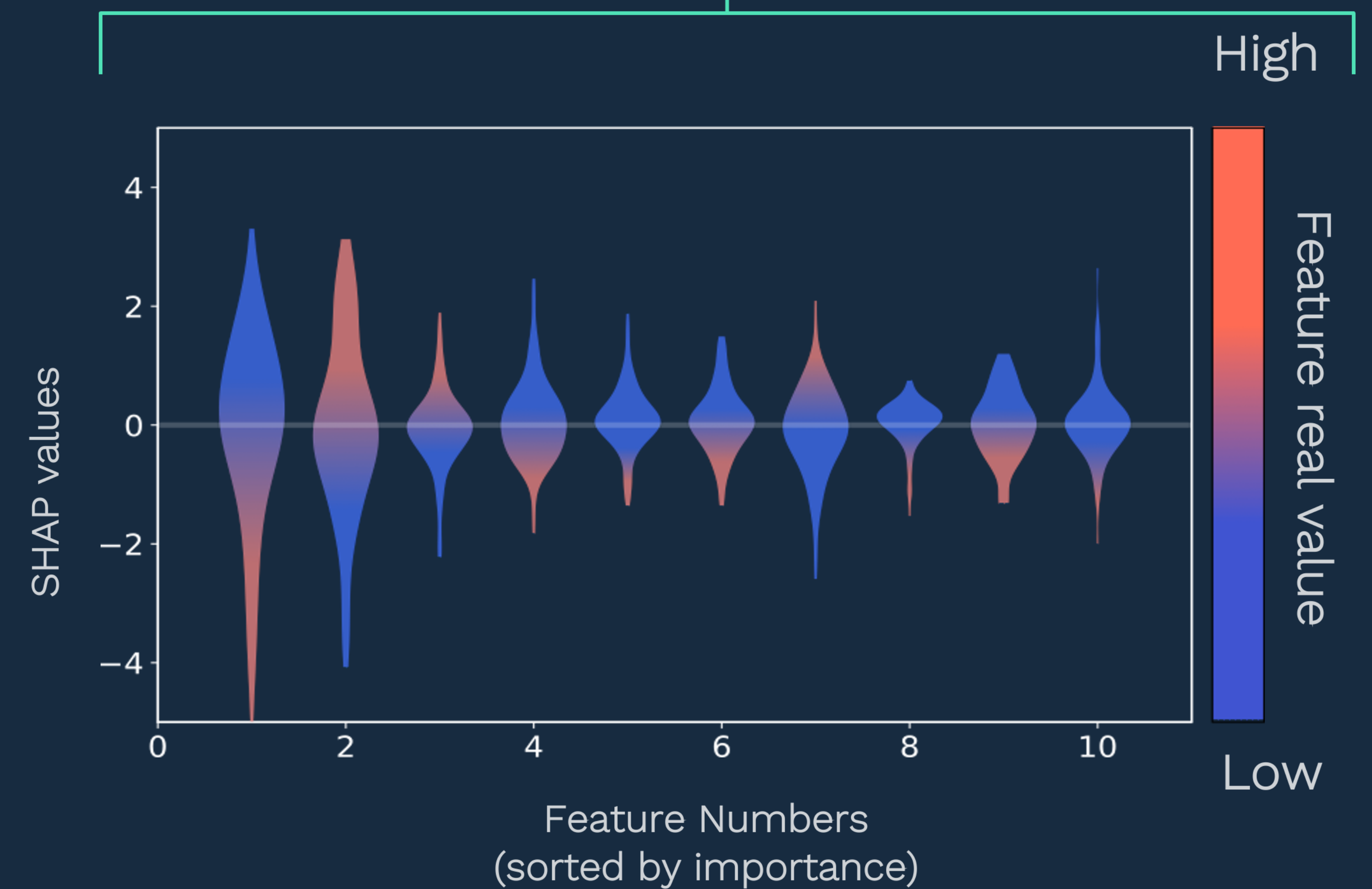
# Responsible AI is a cornerstone: explainable models using diverse and balanced datasets to mitigate bias and ensure fairness

Example: Shapley Values describe relative feature importance to model prediction

Example individual feature impact on model results



Feature model impact comparison



Note: for Violin chart (right), a) the color distribution reflects the normalized real feature values input into the model, b) the width of a violin represents the frequency of SHAP values in the sample, and c) the length of a violin represents the range of SHAP values in the sample