

Mental Health in Conflict and Forced-Displacement Settings: Leveraging Digital Technology for Targeting and Assistance

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Motivation



Mental disorders affect 970m people worldwide
5% global burden of disease



Higher rate of Mental Health (MH) disorders in displaced communities
Twice the rates of host communities
Top priority to integrate MH as primary healthcare

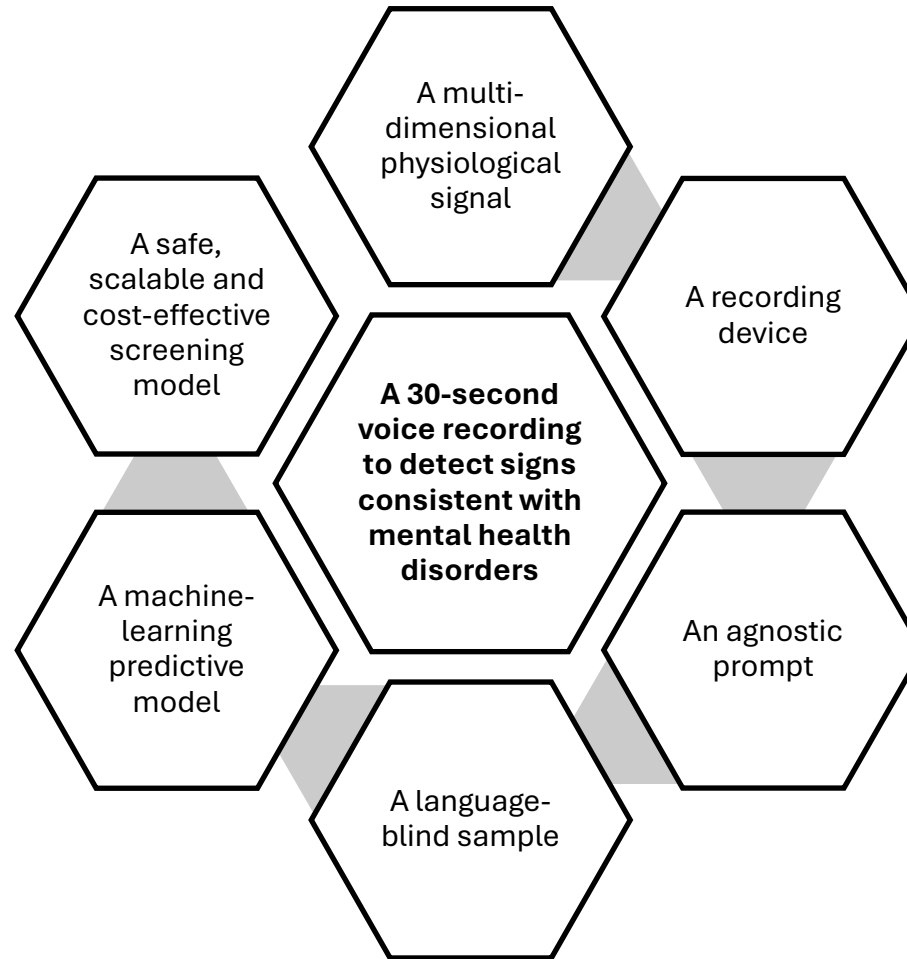


Supply and demand-side barriers limit access to MH services
MH professional shortage, lack of scalable models and culturally-inadequate services
Stigma, awareness

Can we leverage technology to extend access to mental health care to vulnerable populations in conflict/forced displacement setting?

- Bridge the divide between forcibly displaced population in need and mental health care
- Develop safe, scalable and cost-effective screening models
- Address the innovation gap by testing and validating innovative tools in fragile, conflict and violent contexts

The Voice Biomarkers in Practice



Validation of voice biomarker technology

Clinical diagnosis

- Gold standard (Composite International Diagnostic Interview)

Self-reports

- Depression (PHQ-9)
- Anxiety (GAD-7)
- PTSD (PCL-5)

Voice biomarkers

- **30-second audio recording**
- Language-blind, cultural-background-blind, content-blind

Machine-learning based prediction models

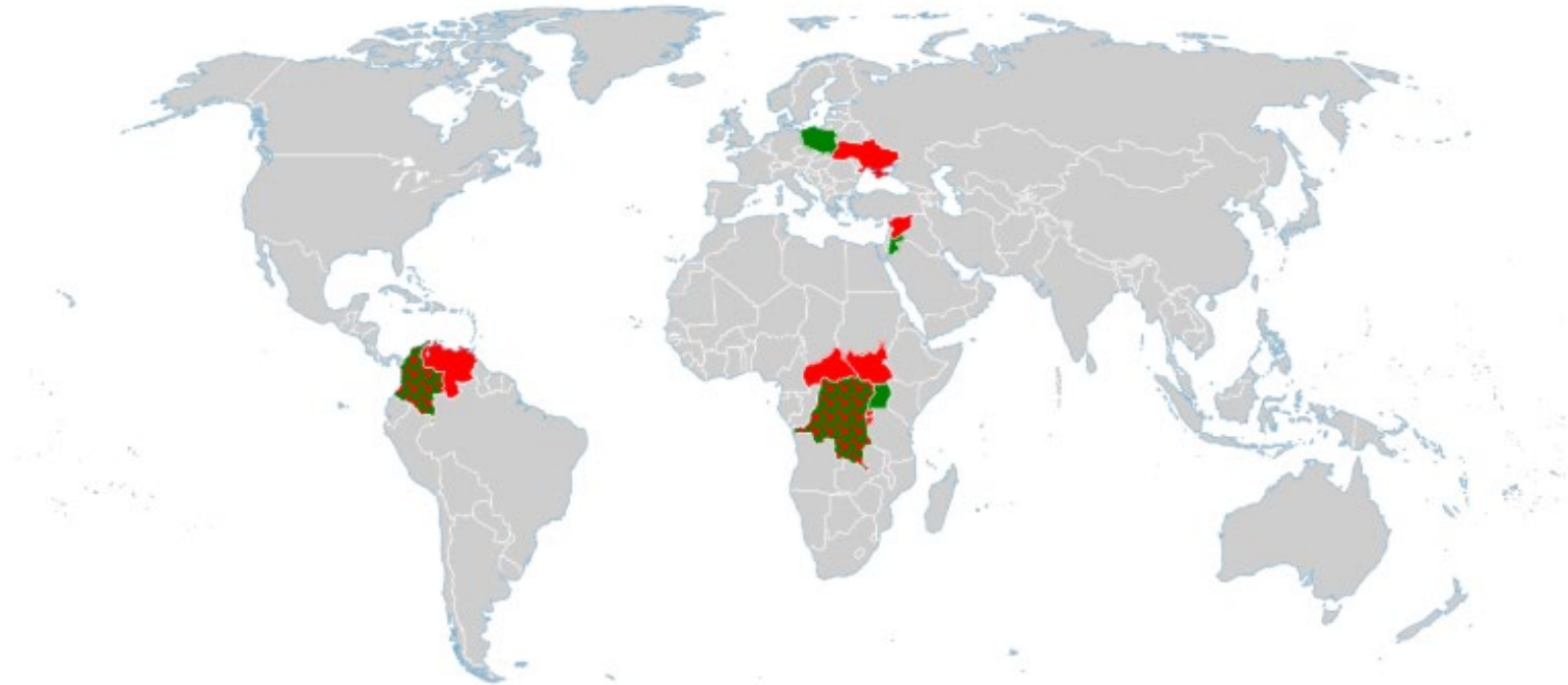
Training of model to use voice features (and self reports) to predict gold-standard outcome

Validation and comparison with self reported scales

Specificity and sensitivity analyses

5,000 ind. for voice calibration and test

A Five-Country Study



Legend ● Study site ● Origin of refugees/IDPs



Source: World Bank Group

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Target populations and data

General adult refugee and host population

- Mental health status
- Physical health status
- Life history
- Age
- Gender
- Ethnicity
- Education level

Two samples

- 5,000 ind. for voice calibration and test
- 18,500 ind. for voice biomarker identification

Ethics framework and Data Privacy

Rigorous accountability process

- Informed consent
- Research ethics
- Scientific transparency

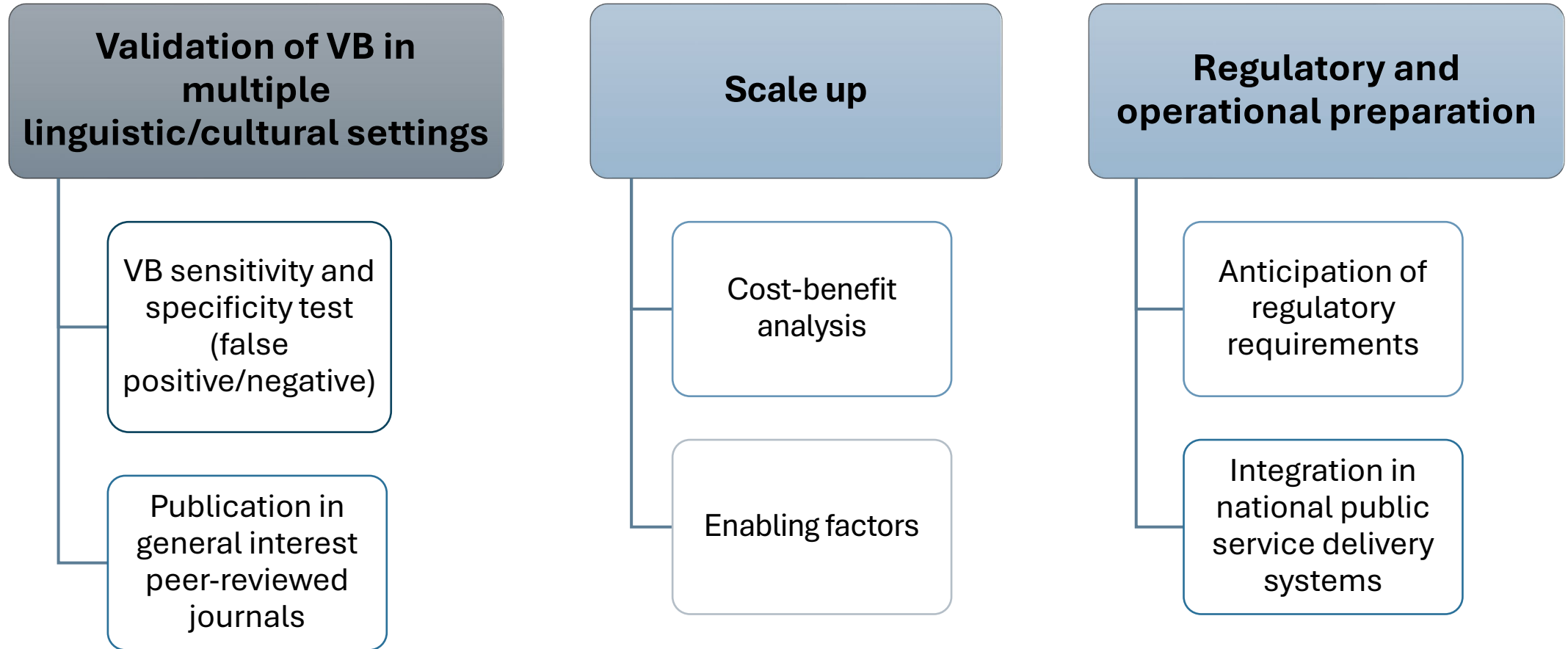
Data protection safeguards

- Encryption, Secure storage, Role-based access controls
- Minimal necessary retention

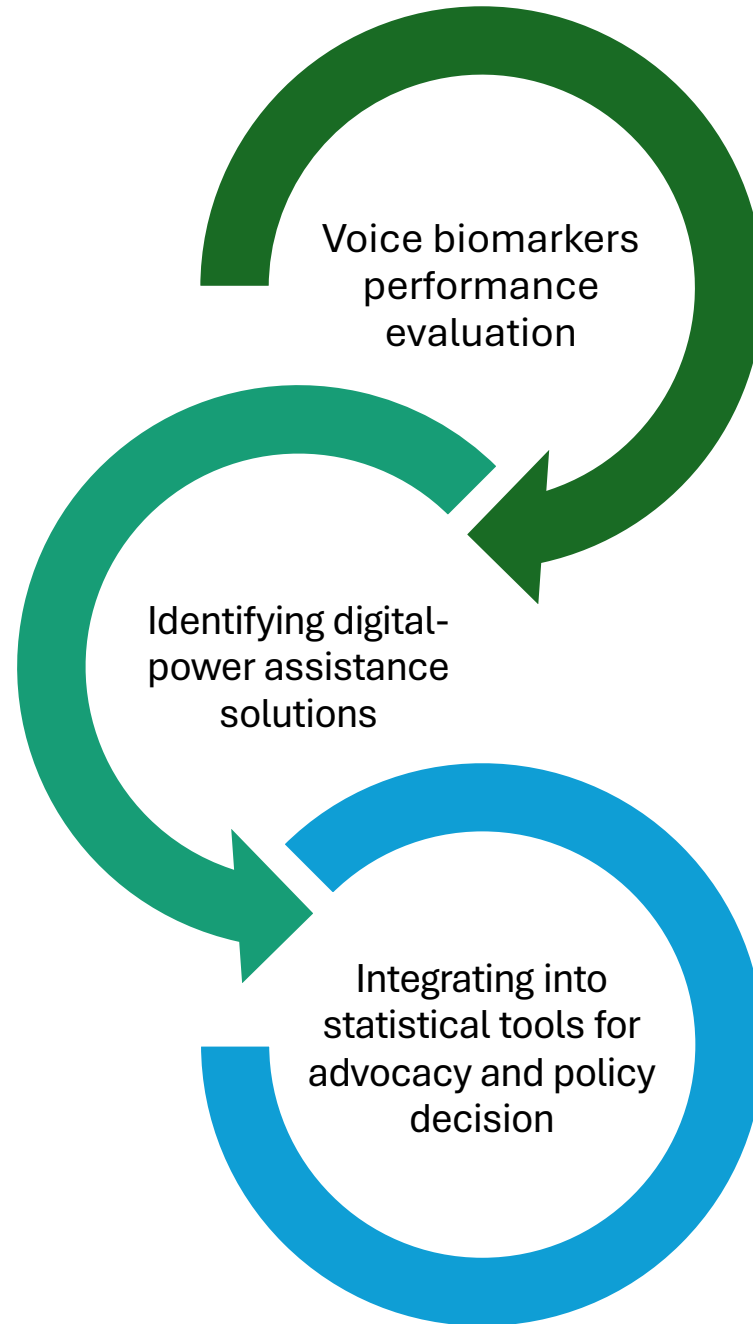
Continuous engagement with stakeholders

- Global advisory committee
- Country-level advisory committees

Expected outputs



Next Steps



Thank you!



APPENDIX

Timeline



Fundraising (until end of 2025)

Internal: SPR, DDP 2.0, SPF (FCV)...

External: Wellcome Trust, BMG Foundation, Google Foundation, FCV donors



Briefing of CMU and PM endorsements (until end FY)



CN Validation (Fall 2025)



Preparation (Fall-Winter 2025)



Phasing Rollout (CY 2026)

Phase 2: post-screening interventions

Randomized controlled trials



Nudges and information campaigns to incentivize care seeking



Referrals for further screening / standard of care



Individual interventions (SH+, PM+)

Impact evaluation and cost benefit analysis

Treatment/control comparisons

- Gender analysis
- Baseline condition analysis

Mistargeting costs

- Inclusion errors (false positives)
- Exclusion errors (false negatives)

Comprehensive cost-benefit analysis

- Detailed costing of screening and intervention
- Assessment of enabling factors