

Beyond the Lab: Scaling Wearables for Real-World Impact through Partnerships and Implementation

Studzinski, CM¹; Siu, C¹; Spring, R²; Jelen, A²; Porter, N³; Bornbaum, C⁴; Tsotsos, LE⁵; Morrison, A⁶; Stergiou-Dayment, C⁶

¹Ontario Brain Institute; ²Translational Research Program, University of Toronto; ³Epilepsy Ottawa; ⁴RetiSpec Inc.; ⁵Centre for Elder Research, Sheridan College; ⁶Alzheimer Society of Ontario

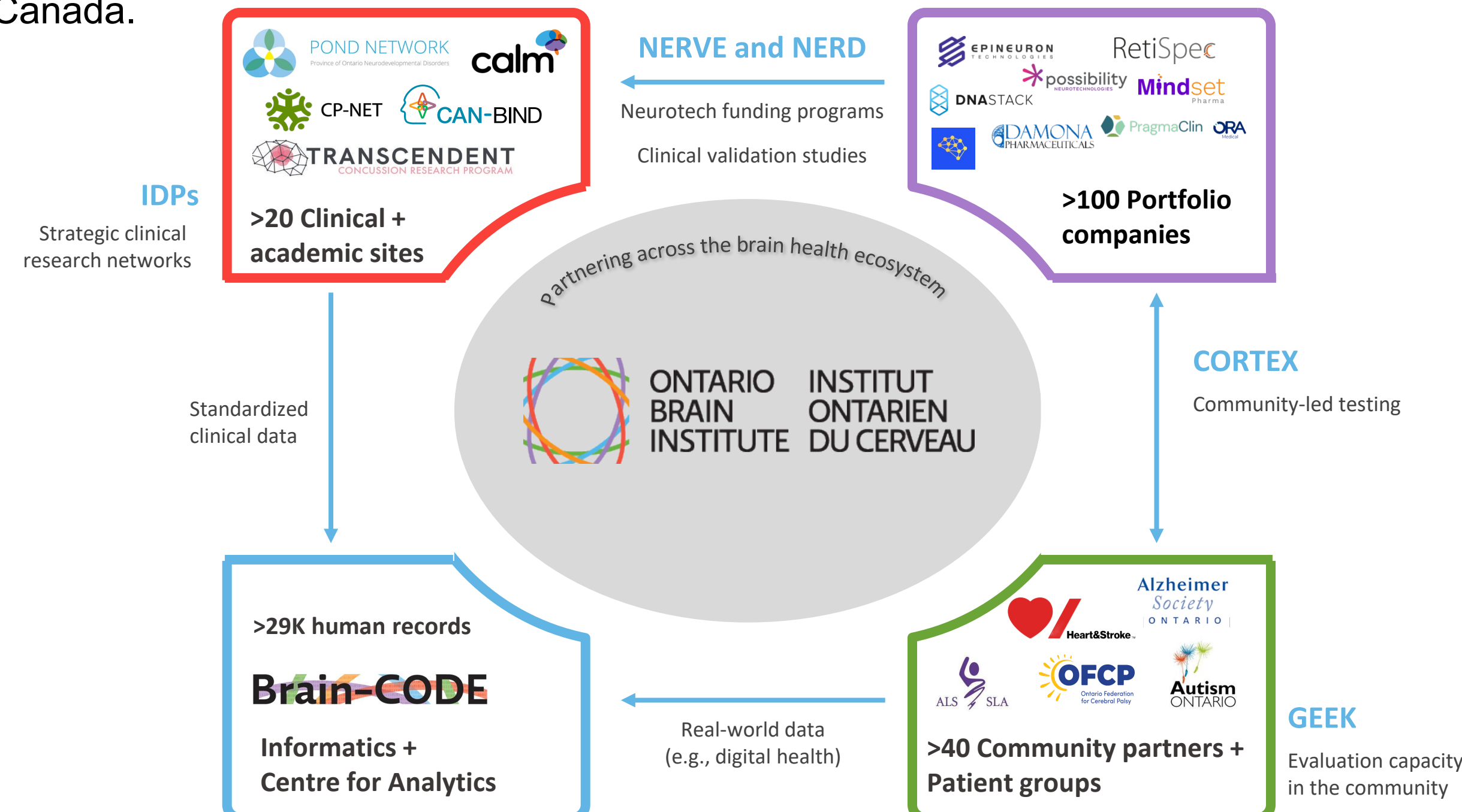
ABSTRACT:

Despite the advancement of wearable technologies, widespread adoption and implementation of these potentially transformative technologies to support aging individuals, including those with mild cognitive impairment (MCI), Alzheimer's disease, and related dementias (ADRD), has yet to be achieved. This barrier to adoption has prevented us from fully realizing the potential transformative impact wearables could have – both in the delivery of compassionate and accessible dementia care and in improving outcomes for aging individuals. This session will share lessons learned from the Ontario Brain Institute's journey to co-design and launch a program called **CORTEX (Community-led Real-world neuroTech EXperience)** that empowers community groups and people with lived experience in testing, implementing, and scaling wearable technology.

Here we share how the initial concept for CORTEX emerged, how the program was initially co-designed with community groups and people with lived experience, and the learnings from the first pilots conducted in partnership with patient groups. Finally, we will show how the learnings informed the launch of our flagship CORTEX initiative, the Canadian Dementia Registry, which was co-created in partnership with the Alzheimer Society of Ontario. This registry allows us to (1) understand the earliest stage of the dementia journey diagnosis (including how conducting cognitive assessments in the community, on behalf of primary care practitioners fills an early detection gap), (2) test neurotechnologies in diverse populations and compare them to clinically-relevant scales (e.g., Montreal Cognitive Assessment), and (3) look at how these technologies can fit into the care pathway in local communities so that we can increase access to the right clinicians and care they need and deserve.

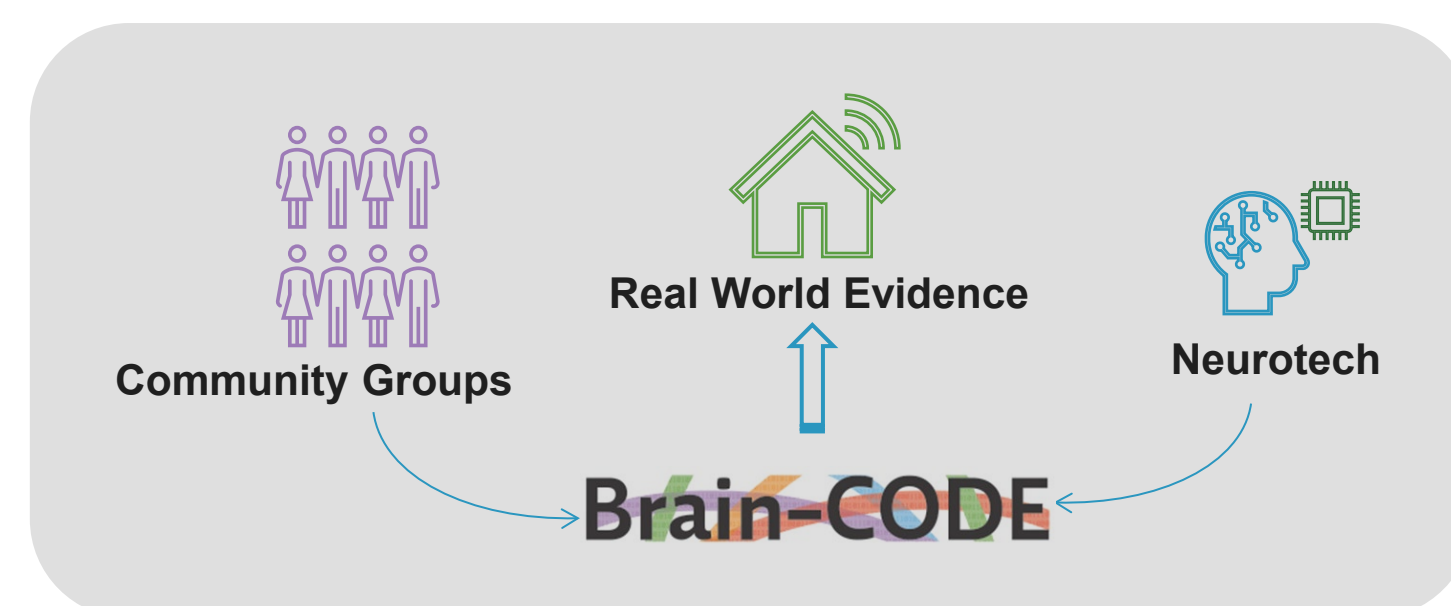
1. Ontario Brain Institute

The Ontario Brain Institute is advancing brain health solutions into communities across Ontario and Canada.



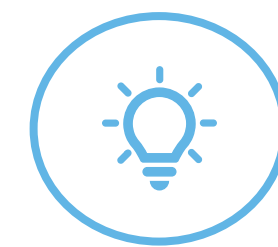
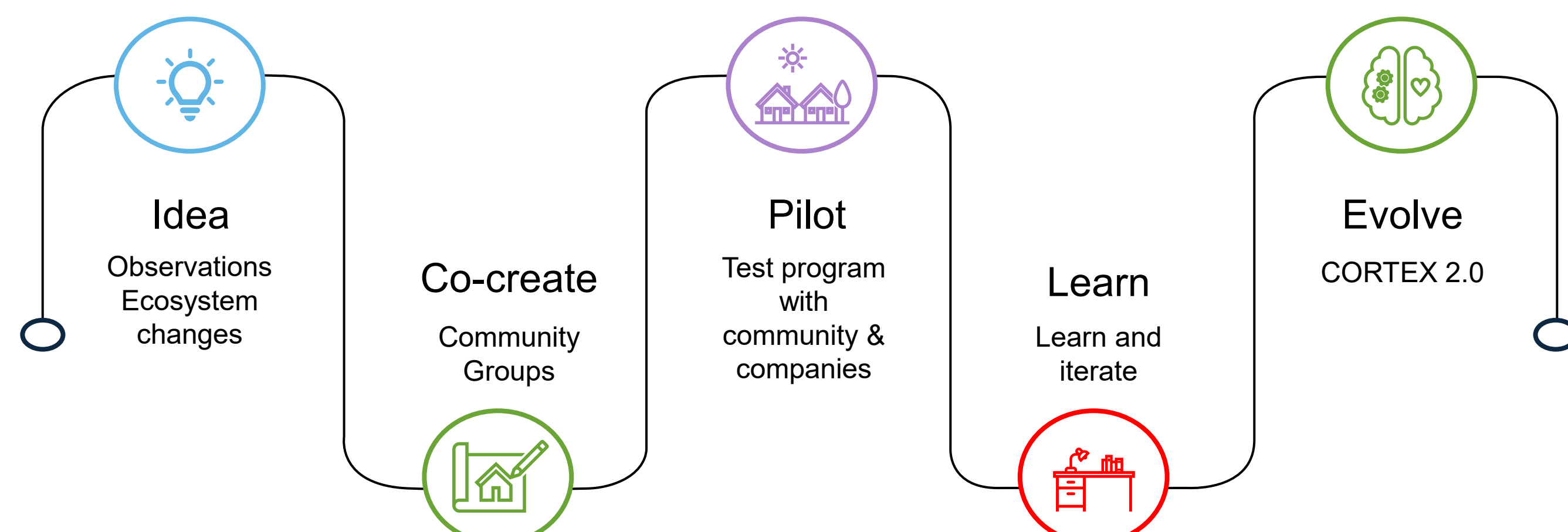
2. What is CORTEX?

Community-led Real-world neuroTech EXperience (CORTEX) is an Ontario Brain Institute program for implementing and evaluating neurotech in the community.



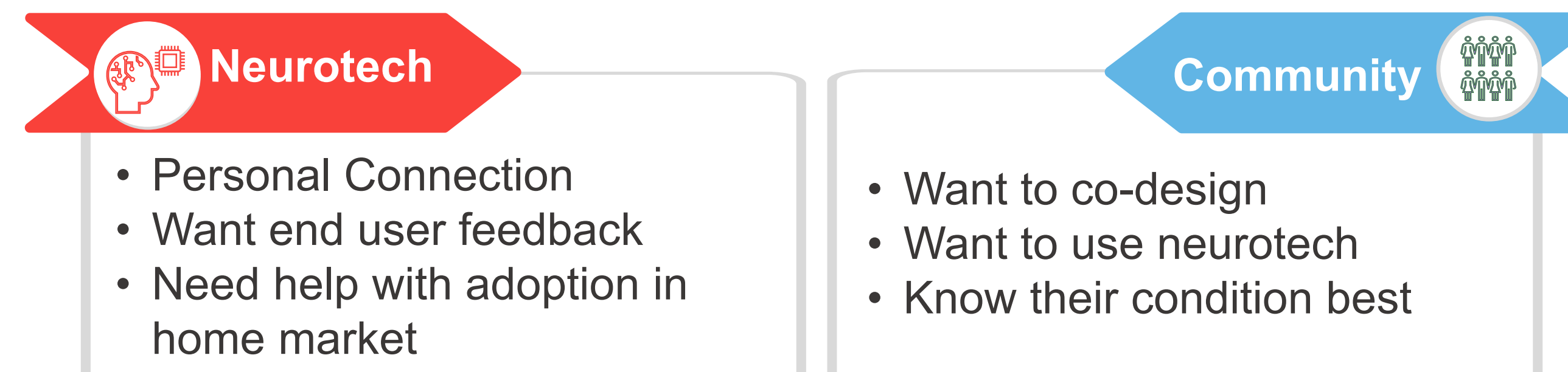
To date, 10 partnerships engaged 1433 individuals

3. How we built CORTEX

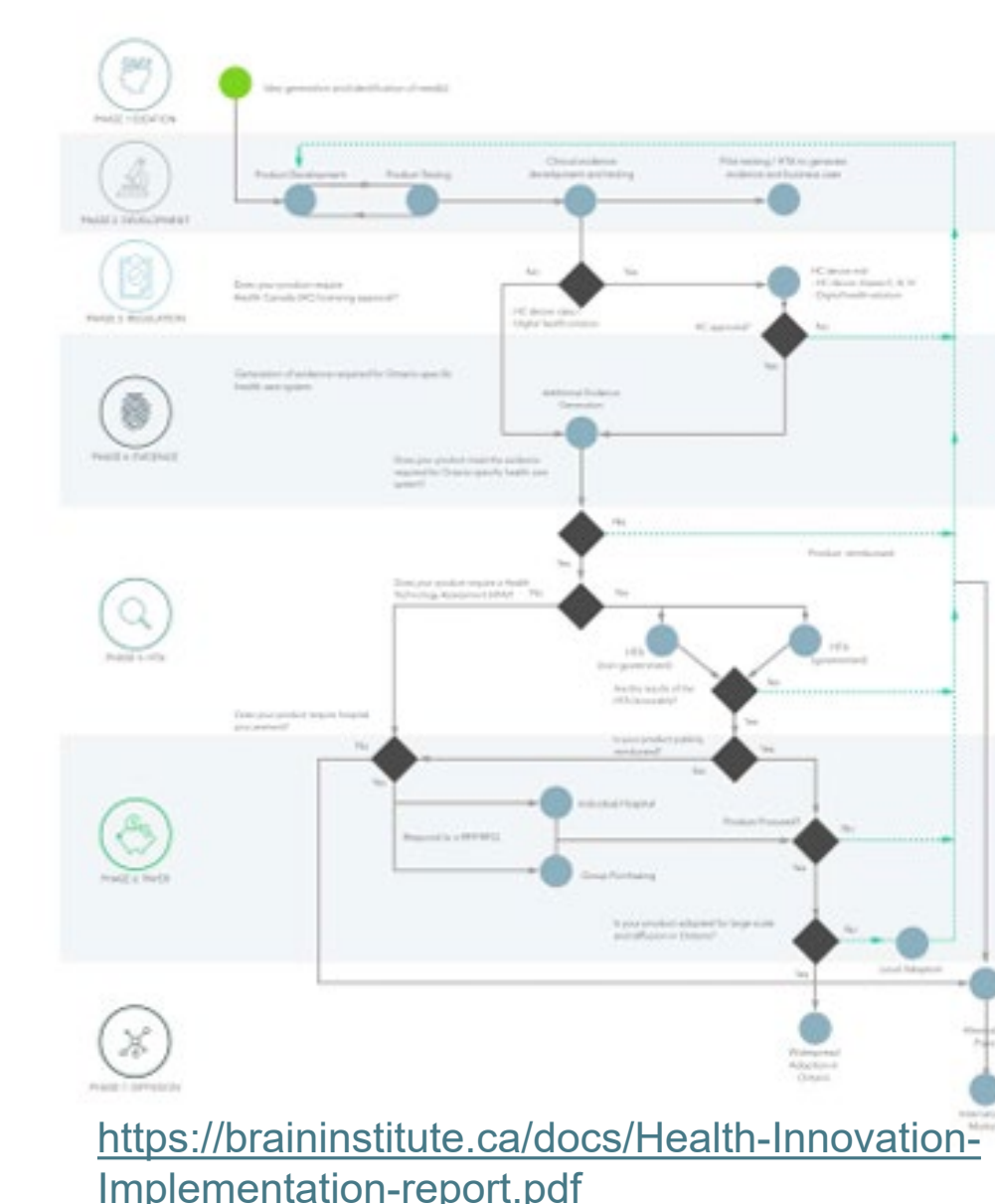


IDEA: Why CORTEX?

Companies and community WANT to work together



REPORT: Health Innovation Implementation in Ontario



<https://braininstitute.ca/docs/Health-Innovation-Implementation-report.pdf>

Importance of Real-World Data

MEDICITY INFLUENCERS
The FDA Is Opening the Use of Registry Data in Drug Development – What Does It Mean for Patient Advocacy Groups?

FDA's draft guidances on real-world data do not provide strict requirements for industry stakeholders to abide by, but they offer patient advocacy organizations with a clearer understanding of how to model their registries to have a more substantial impact for their patient communities.

By JAMIE SHIPPER

<https://medcitynews.com/2022/12/the-fda-is-opening-the-use-of-registry-data-in-drug-development-what-does-it-mean-for-patient-advocacy-groups/>

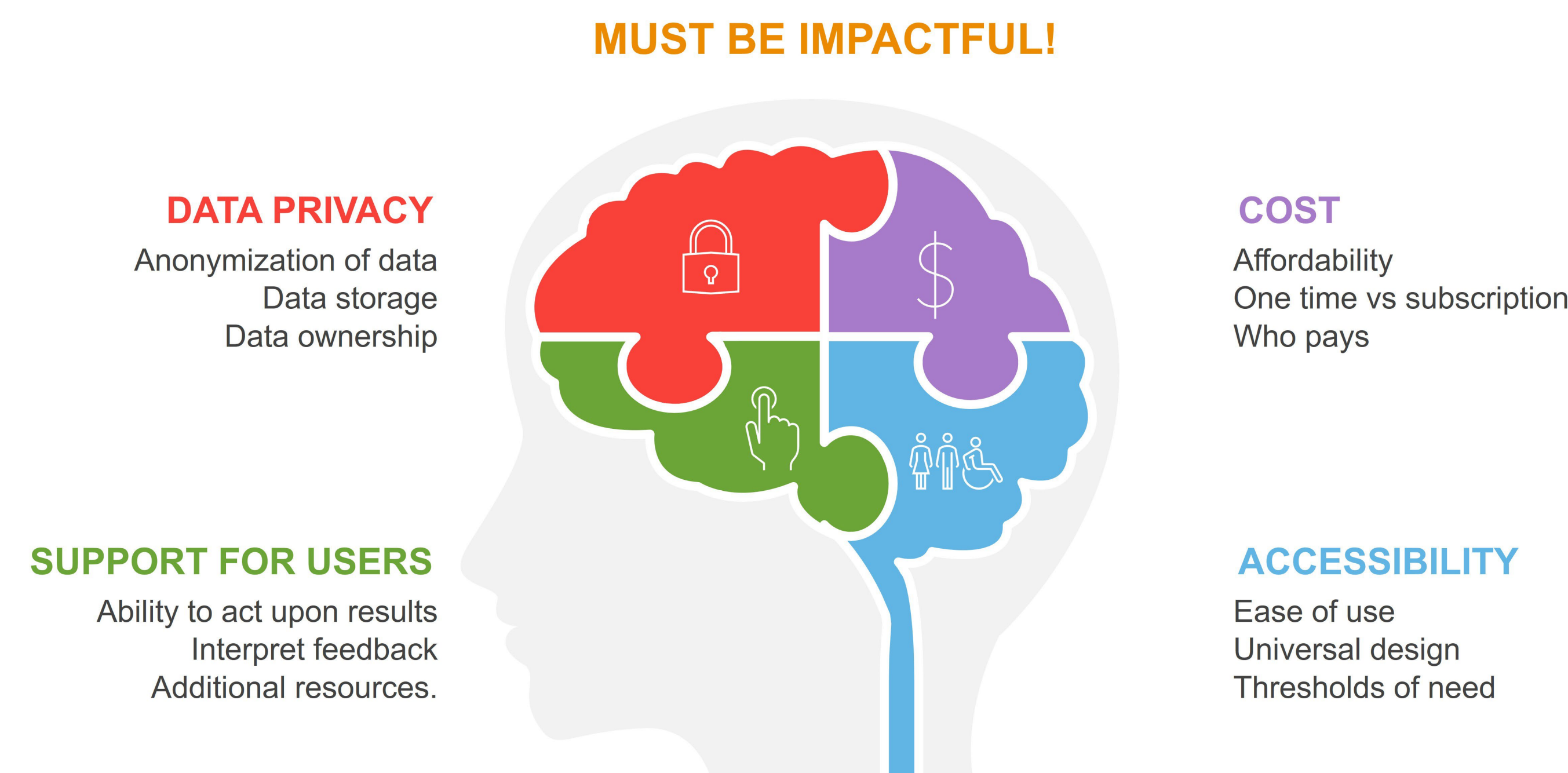


CO-CREATE: Could we partner to test neurotech?

- Ontario Brain Institute hosts an annual patient and community advisory group day for our lived experience partners. Typically, between 40-60 individuals attend.
- In 2020, we held a session to determine interest in testing neurotech, in partnership with the Ontario Brain Institute.

KEY FINDINGS:

- 98% of attendees were interested in testing neurotech with the Ontario Brain Institute
- The program needs to consider the following topics:

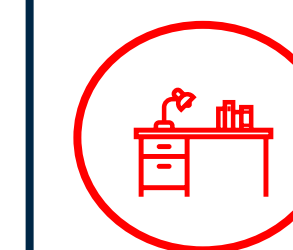


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PILOT: Partner and test with community

- epilepsy ottawa / épilepsie:** Wearable + App for tracking seizures, medication and sleep ($n=50$)
- Holland Bloorview Kids Rehabilitation Hospital:** Wearable + App for predicting emotional outbursts in neurodiverse children ($n=125$)
- rhea:** Concussion recovery app ($n=103$)
- RetiSpec Alzheimer Society:** Retinal scan for detecting Alzheimer's in the optometry clinic ($n=916$)
- GENERATOR at Sheridan Centre for Elder Research:** Digital human + speech algorithms for monitoring cognitive decline and mental health ($n=60$)

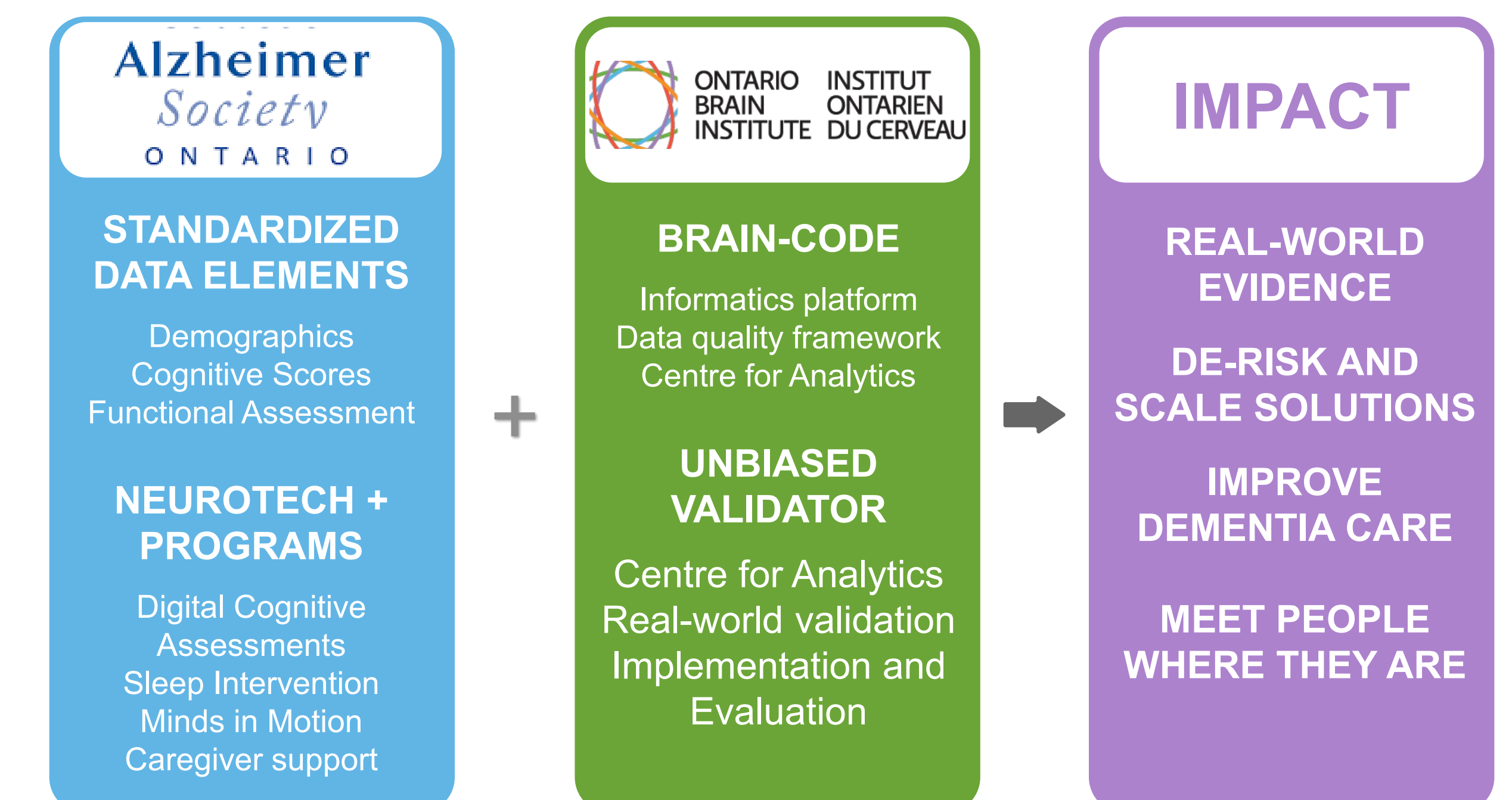


LEARN: Lessons learned from pilots

- Build capacity in the community – research, data collection, neurotech selection
- Sustainability – capacity is lost after project ends
- Implementation – create and test alternate care pathways



EVOLVE: Canadian Dementia Registry



- Started with 3 community sites.
- Leveraging a successful program for conducting cognitive and functional assessments on behalf of primary care to support detection of Alzheimer's Disease and Related Dementias.
- First technology: Digital Cognitive Assessment to identify individuals that should be prioritized for cognitive assessments.

Want to learn more? We're happy to answer questions and explore partnerships!

Christa Studzinski: cstudzinski@braininstitute.ca
Caitlin Siu: csiu@braininstitute.ca