BrainHealth Databank Initiative - Working together to collect and use high quality data to advance personalized care

The BrainHealth Databank Initiative is re-engineering the way in which we collect and use data to improve care, accelerate research, and ultimately achieve personalized mental health care. To accomplish this, we have been establishing a collaborative patient-centred framework for iteratively enhancing delivery of measurement-based care, accelerating translational clinical research, and enabling data driven discovery and innovation. In addition to supporting CAMH's response to COVID-19, over the past year, the CAMH-wide BrainHealth Databank team has continued to make significant progress towards achieving its goals.

Rapid Expansion and Transition to Remote Measurement-Based Care in Response to COVID-19

Physiatrists and clinicians across CAMH routinely use data from questionnaire assessments completed by patients in the clinic to inform clinical decisions. As clinics transitioned to virtual care visits, the team worked in parallel to enable clinics to e-mail a secure link to patients to complete questionnaires ahead of their virtual appointments. The assessment scores are automatically calculated and summary of results returned to the health care provider. Remote measurement-based care has been implemented for 8 structured care pathways including a new dedicated electronic referral and care pathway for health care workers during this challenging time.

Linking Biobank Samples with Structured Measurement-Base Care Pathways

To advance biomarker discovery and ability to identify the most effective treatment for a given patient, the BrainHealth Databank has built on the success of CAMH's Neurogenetics program to establish a centralized Biobank and Molecular Core for standardized collection, processing, storage, retrieval, and analysis of samples. The Biobank receives, processes, and stores biological samples ("biosamples") collected from research participants across CAMH to better understand the biological factors associated with mental illness and addictions. When a participant consents to contributing biosamples to the BrainHealth Databank, their samples are placed in a sample repository accessible to any approved CAMH researcher for use in their current and future research studies. This centralized sample repository has the benefit of reducing participant burden related to providing multiple samples ultimately used for the same purpose. As well, the data generated from analyzing the BrainHealth Databank biosamples will become part of the BrainHealth Databank data repository for shared use across research studies. In collaboration with the Major Depressive Disorder-Integrated Care Pathway, the BrainHealth Databank has re-designed the integration of research to align with virtual care visits. This includes use of remote electronic consent and mailing swab kits to patients interested in donating a biosample to the biobank.

Future Outlook

With the investment in new foundational infrastructure, including implementation of knowledge graph databases to enable complex queries and data provenance tracking, creation of data governance polices to ensure patient privacy and robust governance required to enable data reuse by researchers at CAMH and around, and acquisition of a new data analytics tool to enable access to customized dashboards within the electronic health record system, the BrainHealth Databank is primed to continue to impact clinical care. In collaboration with the MDD-ICP, the team is initiating analysis of the high quality data collected electronically form >750 MDD-ICP patients to inform quality improvement activities and working towards launching the MDD-ICP visual patient-level treatment trajectory dashboard to enhance clinical decision support for physicians. In parallel, the team has partnered with the co-chair of the CAMH Patient Advisory Committee and Masters for Design for Health trainee at the Ontario College for