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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.

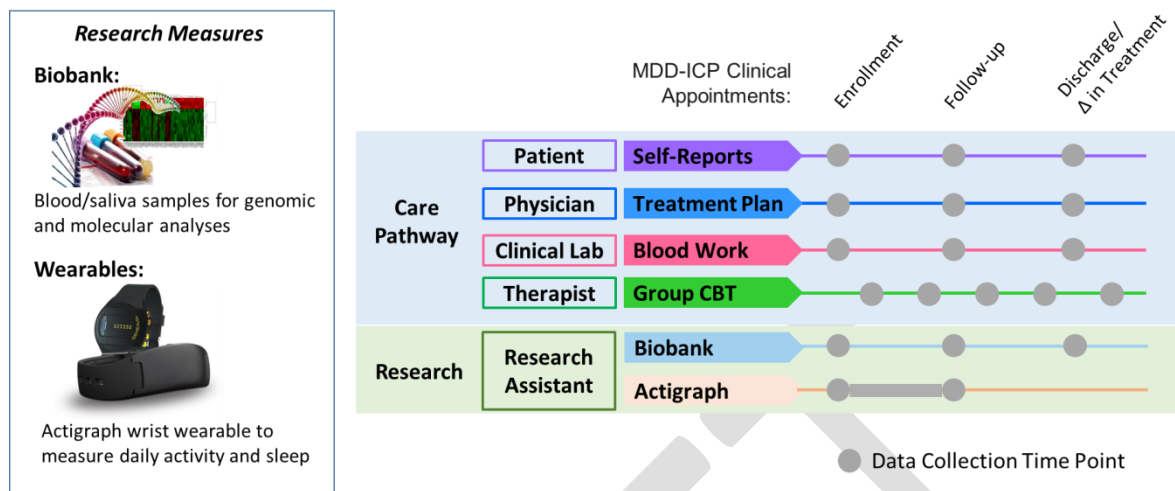
Rapid Expansion and Transition to Remote Measurement-Based Care in Response to COVID-19

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. In addition to a high-throughput array scanner for genetic analyses, the Biobank and Molecular Core features a new custom built Biobank Informatics System to support management of entire life cycle of biosamples.

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. Additionally, the BrainHealth Databank has been awarded an Accelerator Grant in Genomic Medicine by the McLaughlin Centre at the University of Toronto to support the genotyping analysis of these samples.



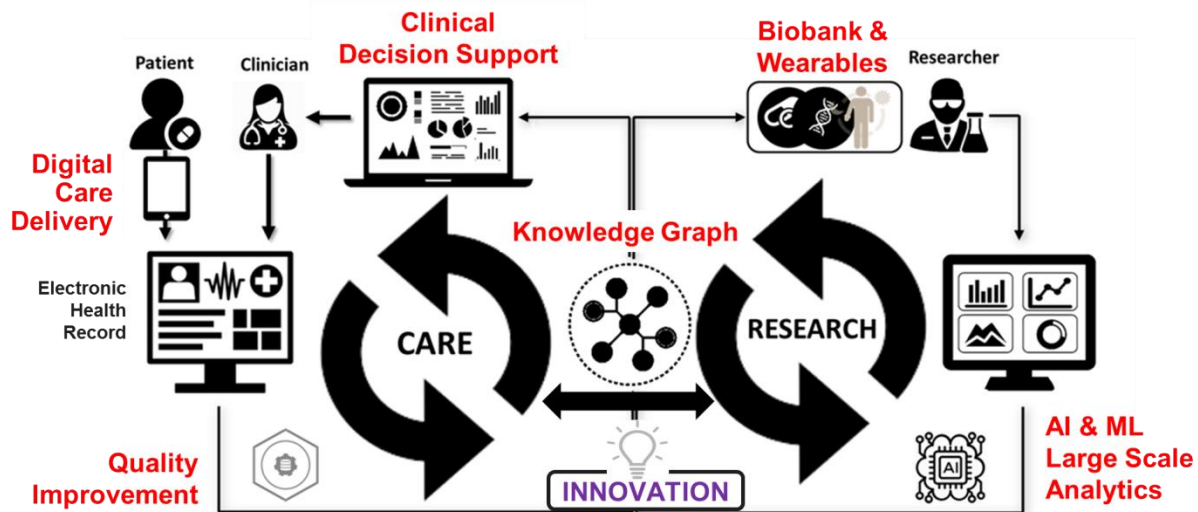
Integration of Research Measures into Clinical Care Pathways. To accelerate translation of research findings into clinical practice, the BrainHealth Databank is embedding research measures into structured care pathways.

Defining a Platform to Support Care and the Integration of Research in the Clinic

To facilitate care delivery and integrated collection of research measures including biobank and behavioural measures from wearables, the BrainHealth Databank has adopted a design thinking approach to developing a Research and Care Coordination Portal. In partnership with MetaCell, a neuroscience software company, the BrainHealth Databank team is conducting a virtual stakeholder engagement process consisting of interviews and interactive workshops to gather and analyze Portal requirements. The findings will be used to create a road map for developing an innovative and interactive mental health Portal to enhance patient care and experience.

Outlook

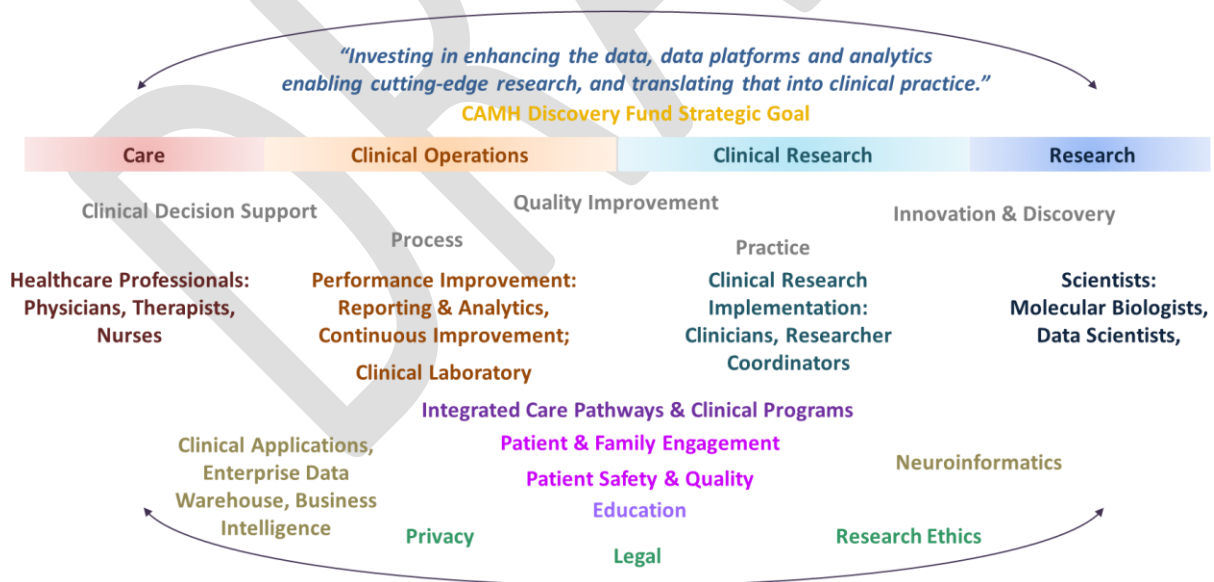
With the investment in new foundational infrastructure, including implementation of knowledge graph databases to enable complex queries and data provenance tracking, creation of data governance policies to ensure patient privacy and robust governance required to enable data reuse by researchers at CAMH 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 from >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 Art and Design University (OCAD U) to use human design thinking to co-design a patient facing clinical journey dashboard to empower patients and improve their care experience.



Enhancing and building core infrastructure – technology, processes, and policy – to support a Learning Health System. To enhance integration between clinical care and research, the BrainHealth Databank is leveraging CAMH achievements including its I-CARE electronic health record system, structured measurement-based care pathways, and research neuroinformatics platform.

Acknowledgements

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CAMH-Wide BrainHealth Databank Team. Collaboration and integration of diverse expertise.