



VIRTUAL INTEGRATED RELIABLE TRANSFORMATIVE USER-DRIVEN E-HEALTH SYSTEM (VIRTUES)

- 01** Utilizing cutting-edge technologies from partners including Abbott Laboratories, Baylis Medical Company Inc., and Medtronic Canada (with Medtronic CareLink), patient data is transmitted via biosensor technology and manual input on a variety of devices to the VIRTUES platform.
- 02** With the capabilities of collecting data across multiple data platforms and providers, VIRTUES is a secure blockchain cloud-based infrastructure, developed utilizing the FHIR (Fast Healthcare Interoperability Resources) software architecture.
- 03** Study-specific CRF's utilize CANet-standardized data models and codebooks to ensure interoperability throughout the VIRTUES collection, integration and output facilitating the delivery of information to all platforms and electronic devices.
- 04** CANet studies including RAFT-LV endo, RPM-CIED, DEVELOP AF, and KYEF, have all been tailored to include study-specific analysis integrated with the output of data from VIRTUES onto patient/clinical displays via interactive dashboards viewable from a variety of devices.
- 05** Delivery of feedback and multi-way communication to healthcare providers, caregivers, and back to the patient is facilitated directly with on-demand interaction with the VIRTUES platform globally.

VIRTUES

VIRTUES is a platform co-designed and co-developed by the Cardiac Arrhythmia Network of Canada (CANet) network investigators, clinicians, patients, and external partners with the goal that patients with arrhythmia conditions will receive virtual care using biosensor driven diagnostics and health informatics, integrated with digital technologies, advanced analytics and wireless connectivity.

VIRTUES will enable the most efficient and effective care for each arrhythmia patient's specific needs.

With over \$45 million in partnership funding, including \$2.5 million (\$1.9 in cash) from Medtronic Canada for multiple studies concurrently operating during the development of VIRTUES, we continue to implement the latest technologies to ensure the VIRTUES platform will maximize the universal standards developed by CANet for the delivery of personalized patient-centric arrhythmia healthcare.

CANet has established secure and private electronic vehicles, including the VIRTUES cloud-based infrastructure utilizing FHIR (Fast Healthcare Interoperability Resources), and data models that will integrate within the platform ensuring interoperability between all points of a patient's care.

By combining wearable biosensor technology (to collect personalized physiological data), digital multi-media interfaces (providing personalized demographic structured and unstructured data) and validated analytics, VIRTUES will have the capabilities to immediately integrate symptom-driven validated physiological data (rhythm, BP, others) into a patient-specific, personalized context and trigger an appropriate care plan derived from a set of plans previously co-developed with the patient.

FEATURES

- VIRTUES will help develop personalized education material for each specific patient's medical condition that is adapted to the patient's requirements and educational profile, as well as, other specific requirements such as language preference and family caregiver's accessibility;
- help develop and test improved care planning tools and care pathways for the management of arrhythmias;
- include data from several thousand patients and serve both as an essential research and knowledge translation strategy enabling further technology development.

Access to VIRTUES robust data will strategically enrich high-quality research directed at further improving critical outcomes of arrhythmia care.

DELIVERING THE BEST PATIENT-CENTRIC CARE

- VIRTUES will provide personalized health care delivery;
- empower and give ownership to each to co-manage their health;
- provide health education uniquely tailored to the individual;
- also, improve access, quality and cost of healthcare.

FACTS

- Multiple studies, including multiple sites, are undergoing needs reviews and assessment for implementation into the VIRTUES platform, and;
- ethics applications are currently under review for these studies.
- Via live demonstration, a patient was registered into a CANet-funded study through the VIRTUES mobile application.
- CANet is in the process of completing a Privacy Impact Assessment (PIA).

INDUSTRY PARTNERS

- Abbott Laboratories
- Baylis Medical Company Inc.
- Medtronic Canada