Design and Assembly of a Collection of Rapidly Configurable Homecare Computer Stations for Delivering Health Informatics and Monitoring Services

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The Laboratory of Collaborative Diagnostics (LCD) at the University of Toronto is seeking assistance from George Brown College (GBC) to help develop a key component of a new collaborative diagnostics service useful in homecare delivery. The project aims to create a new way of rapidly assembling and configuring computer-based health informatics and monitoring stations for use in supporting use of point-of-care (POC) medical devices in the home. GBC’s rapid prototyping and packaging expertise will be used to create a new computer case and cabling design that will enable this rapid configuration functionality. Design options will be explored by creating a collection of 3-5 prototype platforms and measuring their ability to serve as a useful interface between home care providers, patients, commodity POC health monitoring tools, and centralized electronic health record (EHR) and other informatics systems.

This is a first step in developing a comprehensive home care support service that delivers transparent and minimally invasive integration of a flexible and inexpensive internet enabled health monitoring and informatics in the home.

Because the system enables establishment of a node of a network of distributed digital diagnostic devices the LCD calls the platform a D4-box.

Benefits to GBC: The project will provide opportunities for trainees from GBC to contribute to both the design and prototyping phases of the platform and set the stage for a larger collaboration between the LCD and GBC for demonstrating and developing the value of small internet enabled medical devices.

Benefits to community: This project will draw upon the technical expertise and infrastructure at GBC for designing and prototyping specialty enclosures for electronic devices. Their experience with sensor and small device development will be invaluable in ensuring that the compute/communication platform can readily interface with inexpensive commodity health sensors that can extend the observation powers of patients and their care providers and facilitate entry of health metrics into network based centralized EHR systems.