

BLACKBERRY SOLUTION USED TO MONITOR PATIENTS HELPS PROVIDE FASTER & MORE CONVENIENT WAY TO DETECT CARDIAC ARRHYTHMIA

Industry

- Health Care

Region

- North America

Company Size

- Small Enterprise – 35 employees

Solution

- BlackBerry® smartphones
- BlackBerry® Enterprise Server
- m-CARDS™ (Mobile Cardiac Arrhythmia Diagnostic Service)
- Event Loop Recorder

m-Health Solutions (mHS) is a Canadian company, based in Burlington, Ontario, working in the emerging and growing field of mHealth technology, a term describing the use of mobile devices for the collection and distribution of health data, remote delivery of care and near real-time monitoring of patients. mHS provides doctors and patients with a fast and convenient diagnosis system to help detect cardiac arrhythmia. Both the technology and the service are covered under the provincial government's health insurance plan.

The Challenge

Medical professionals are always looking for ways to detect heart conditions and preventatively treat heart disease and stroke. Many lifesaving technologies and treatments are available, however before these can be used, a patient requires a diagnosis. One of the major challenges facing physicians is being able to access technologies that will help them with the diagnostics.

To make a diagnosis, family physicians often refer patients to cardiologists. One of the most familiar tests currently available is a device that records cardiac activity for 24 – 48 hours. The device typically requires 5 – 7 leads, cannot be removed to bathe, and the patient must make several trips to a hospital to be started on the device and then has to return the device.

“The test is cumbersome and can take several weeks,” said Sandy Schwenger, Co-owner and CEO of mHS. “We knew earlier diagnosis and treatment could mean better patient outcomes and the best way to get to a patient early was through the family doctor using a technology that provided faster diagnosis.”

The Solution

To speed up the process of diagnosing or ruling out cardiac arrhythmias, mHS developed the Mobile Cardiac Arrhythmia Diagnostic Service (m-CARDS), a solution for family doctors, internists and cardiologists. When a patient reports suspicious symptoms, the doctor can initiate the test right away, without sending the patient to the hospital or a specialist.

During the initial visit, the doctor attaches two electrodes to the patient and sends a requisition form to mHS. Within 24 hours, a kit arrives at the patient's house or office containing an Event Loop Recorder (ELR) – which records cardiac activity for up to two weeks – a BlackBerry smartphone and user instructions.

To learn how to hook up the recorder, patients can either view video instructions on the BlackBerry smartphone, DVD or mHS's web site or read the written instructions provided in the kit. Once attached, the ELR starts to transmit data via Bluetooth® to the BlackBerry device. The BlackBerry smartphone sends the information to mHS's BlackBerry Enterprise Server at its diagnostic centre where it's interpreted by cardiac technologists. The company also uses the BlackBerry Enterprise Server to manage, control and push



“With the help of BlackBerry smartphones and our mHealth technology, a family doctor can make a faster diagnosis of a person at risk, meaning the patient can access the latest technologies and medications leading to potentially better outcomes”

Sandy Schwenger
Co-Owner and CEO
m-HEALTH Solutions

software updates out to the devices.

“We did research that told us people are ready and able to embrace mHealth solutions,” said Schwenger. “We’ve found that people of all ages are able to hook it up without much trouble – even people in their 80s who have never operated a computer.”

Results are monitored constantly and mHS’s cardiologists use a secure portal to make a diagnosis from virtually anywhere in the world. At any point during the test, a technologist can flag an abnormality. Patients can also report the onset of a symptom by pressing a button on the recorder and entering details using a drop-down menu on the BlackBerry smartphone.

m-Health Solutions’ Benefits

m-CARDS allows family physicians to order an easy-to-use, ‘at-home’ diagnostic test as soon as the patient presents symptoms. The BlackBerry smartphone transmits data in near-real-time, which helps avoid the delays associated with downloading the results at the completion of the test. The interpreting cardiologist can then review the findings, and report them almost immediately which helps to speed up treatment time.

“The investigation and diagnosis of cardiac issues was often a drawn out process,” said Schwenger. “After seeing your family doctor, it could take days or weeks to see a specialist and several more weeks for diagnosis. With m-CARDS, the patient is typically hooked up within 24 hours of seeing their family physician and the average time to diagnosis is eight days, meaning patients may be treated sooner.”

Schwenger believes that mHS’s solution is an effective way to help identify an event quicker than ever before. “Before mCards, patients only had access to technologies that were not easy to use, were inconvenient, could produce poor diagnostic results and took far too long in getting results back to referring physicians,” said Schwenger. “Then they would have to wait and worry about whether something was seriously wrong. Now, thanks to the m-CARDS solution on the BlackBerry smartphone, patients know cardiac technicians are receiving and watching their results in near real-time.”

“The ELR, in combination with the BlackBerry smartphone, helps provide a greater diagnostic yield than traditional two-day monitors,” said Schwenger. This solution has been well-received among doctors and patients. Currently, 400 family physicians throughout Ontario have chosen to use m-CARDS to arrive at a diagnosis for nearly 2,500 patients.

“With the BlackBerry Enterprise Server, we are confident that our data is safe and secure. It also allows us to push out software updates and disable a lost or stolen devices remotely which provides us with great peace of mind,” said Schwenger.

“We believe this BlackBerry solution is just the beginning in helping to improve the diagnosis, treatment and management of cardiac diseases and disorders,” said Schwenger. “We are already in the process of researching and developing a system to help monitor these patients after they’ve had a heart attack, during rehab or when they’re back at home.”

Key Benefits

- Earlier diagnosis of cardiac conditions
- Better clinical information about a patient’s heart activity
- Reduced wait time for diagnostic tests
- Greater convenience for patients and doctors

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