



The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

Final Copy of Case Study

LOCATION:
New York, NY, US

ORGANIZATION:
NexJ Systems Inc.

YEAR:
2011

ORGANIZATION URL:
<http://www.nexj.com>

STATUS:
Laureate

PROJECT NAME:
Mobile Health and Chronic Disease Project

CATEGORY:
Innovation

PROJECT OVERVIEW

Healthcare providers are struggling with the challenge of how to improve the quality of care and increase patient safety while managing the cost and scope of services. As a sponsor of people-centered health and an advocate for health care change, NexJ is delivering and improving its transformative NexJ Health and Wellness Platform. A framework that integrates existing health care IT infrastructures, it enables healthcare systems to interoperate and exchange information regardless of geography or delivery channel. The value of the platform is evident at in the Mobile Health and Chronic Disease Project (MHCDP) at the Black Creek Community Health Centre (BCCHC) in Toronto, Ontario. The NexJ Health and Wellness Platform services NexJ's Health Coach program and integrates BlackBerry smartphones with mobile remote monitoring of blood sugar and blood pressure, enabling diabetics to team up with personal health coaches and receive guidance in monitoring healthy eating, exercise and stress management. The system also links primary care providers (PCPs) with Health Coaches and patients in continually interacting loops that positively support wellness. Healthcare costs are rapidly rising due to an aging demographic increasingly susceptible to chronic disease. According to estimates from the Deloitte Center for Health Solutions, chronic disease management accounts for 78% of healthcare costs which highlights the current systemic problems of inefficiency, fragmentation (in data sharing) and disconnection between patients and providers. Many proposed solutions lack scalability. Even with improved efficiencies, the sheer number of individuals at risk for chronic disease threatens to overwhelm healthcare systems, if current risks progress to real diagnoses and active disease. The best case scenario for sustainability involves prevention and wellness promotion coordinated with modifications of home environments that prevent and forestall hospital stays. BCCHC is focusing on the Type 2 Diabetes, a condition in which the body does not properly convert glucose into energy. At least 171 million people suffer from diabetes worldwide according to the World Health Organization. In the United States in 2008, there were 24 million people with diabetes, with diabetic costs equaling about \$132 billion each year. The technology featured in the

MHCDP is NexJ Health Coach, part of the NexJ Health and Wellness Platform, that allows people, coaches and physicians to collaborate on programs that encourage health-conscious behaviors and wellness. The NexJ Health and Wellness Platform is built on the NexJ eHealth Suite which includes Provider, Consumer, and Mobile Health Platforms and was developed using next-generation "Model Driven Engineering" (MDE) technology. MDE dramatically reduces the development costs of highly scalable, integrated software solutions and can work with all forms of web, mobile and medical device technology. The primary challenge of this project was to equip participants with smartphones and wireless data plans. This was overcome through the donation of BlackBerry devices by Research In Motion and carrier services from Rogers Wireless. Additionally, as participants are of a diverse cultural and ethnic background, language and usability issues were overcome by implementing an intuitive, graphical BlackBerry user interface.

SOCIETAL BENEFITS

The primary benefit of the project is the improved health and wellness of individuals battling diabetes. Further, as insufficient care and unhealthy lifestyle patterns combine and result in severe illness which, over time, results in greater hospital and clinic visit expenditures, the project drives the economic benefit of people-centered health.

PROJECT BENEFIT EXAMPLE

BCCHC is a primary care clinic and multiple health service provider. In Ontario, community health centres like BCCHC are funded to serve modest income catchment areas. Accordingly, high proportions of those served are economically disadvantaged. In North America, from available evidence, we know low-income individuals don't see primary care and specialist physicians enough for optimal management. Such insufficient care and unhealthy lifestyle patterns combine and result in more severe illness which, over time, results in greater hospital and clinic visit expenditures. The MHCDP, featuring the NexJ Health and Wellness Platform, NexJ Health Coach and BlackBerry smartphones, provides the electronic connectedness to overcome these constraints. Coaching to modify lifestyle patterns that cause or intensify disease is coordinated with enhanced connectedness with primary care medicine. In this project, the socioeconomic divide in health care utilization is being overcome by digital connectedness with a result being that all patients that participate in the MHCDP are beneficiaries. All future patients who use this system are also benefited, whether at BCCHC or any other health centre. York University, located adjacent to the catchment area served by BCCHC is also a project beneficiary. The volunteer resources from York, which were formerly employed only on a face-to-face basis, can now be harnessed via electronic and telephone communications as well. The Health Coaches being trained at York to serve the 'new' interconnected health system are learning how to serve best via phone, smartphone and face-to-face communications. The combination results in both more immediate and more consistent contact. Altogether this project is solving multiple problems simultaneously - helping the patient, clinic and population in accessing better preventive and clinical care while increasing the individual's responsibility for optimizing health and preventing disease.

IS THIS PROJECT AN INNOVATION, BEST PRACTICE? Yes

ADDITIONAL PROJECT INFORMATION

William Tatham, the founder and CEO of NexJ Systems, also founded Janna



Systems, a company that was delivering people-centered solutions to the largest financial institutions on Wall Street and around the world. The technology developed was solving the problem of aggregating information from the range of systems that exist within Fortune 500 enterprises and presenting that data in a manner that was easy for the user to benefit from. Janna Systems was sold for \$1.7 billion. Shortly following this exceptional experience, his family suffered a health crisis. As he reflected on his encounter with the Canadian health care system he realized that many of the pressing issues facing health care — maintaining the quality of care, ensuring patient safety, and managing the cost and scope of services — could be solved by applying a people-centered model he had previously implemented on Wall Street. People-centered healthcare would enable patients to access a comprehensive, shared electronic health record and allow care providers to collaborate across the continuum of care. He knew he could bring his innovative technology to enable change in the world of healthcare. This, ultimately, was the goal when we founded NexJ Systems — bringing about a fundamental shift to people-centered healthcare. Mr. Tatham also founded the Canadian Association for People Centred Health on the belief that the Canadian health system should inform, empower and support each person as the manager of their well-being and that all Canadians should have access to a defined, publicly-funded level of care and service. For the successful implementation of the MHCDP, NexJ had to leverage its partnerships with Rogers Wireless and Research In Motion. Research In Motion donated the smartphone devices required for mobile health coaching. The mobile devices made it easy for participants to forward updates on how they're performing relative to their given programs including photographs of meals, blood test results and other metrics which are the necessary data points for measuring wellness and the effectiveness of the program. As these updates further required data service, it was imperative that Rogers Wireless also donate data plans to the program. Again, as mobile coaching is the cornerstone of the success of the project, it was the combination of mobile devices and wireless services that enabled the program to succeed. York University's Faculty of Health also played a special role in the MHCDP. Key to managing chronic conditions is empowering people to engage in healthy lifestyle choices and behaviour while outside of the formal healthcare system. Behavioural scientists and kinesiologists at York University are refining health coaching protocols by testing them in both economically disadvantaged and advantaged neighborhoods in Toronto. The involvement of these specialists in forming and monitoring programs for the participants is what made the coaching possible.