

Clinical Decision Support for Vascular Disease in Community Family Practice

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Abstract

Introduction

Clinical decision support systems have been shown to improve clinical care and patient outcomes in a variety of diseases. Clinical decision support has generally been provided in institutional settings, yet over 80% of patients with chronic disease are taken care of in community primary care clinics.

Problem

The consistency and quality of care provided to patients with chronic disease is quite variable in the primary setting. We sought to develop a scalable and sustainable architecture for providing clinical decision support to primary care physicians in a setting where there is little IT or clinical support.

Solutions

We utilize 3 innovations to deliver clinical decision support to 50 community physicians in Southern Ontario. First, a web-based, vascular disease tracker (C3VT) integrated with electronic medical record systems allows physicians to receive up-to-date, evidence-based clinical guideline advice in a simple and easy to digest format at the point of care on 16 vascular disease risk markers. Physicians can also see a population based view of their patients. Patients have access to the same information that their physician sees about them, only in patient-friendly language.

Second, we utilize a 'clinical architecture' or workflow that supports team-based care in fee-for-service and capitation-funded family practice clinics. A clinical care coordinator (CCC) travels from practice to practice, assisting physicians to follow-up on their patients and to provide patients with the support and guidance they need to implement the suggestions provided by their physician. An automated telephone reminder system (ATRS) uses a voice-print authentication mechanism to authenticate patients and then reminds them to book an appointment with their physician quarterly and asks them to get their lab tests done 10 days before they see their physician. This ensures that critical data required during the encounter is available at the point of decision-making.

Finally, we have developed a scalable and sustainable technical architecture. The clinical practice guideline algorithm service is provided through a web-services connection, allowing physicians to access the latest algorithms using their existing Internet connection. For sites where Internet service is unreliable, we place an inexpensive Linux server on the network which provides the same functionality. The Linux server checks for updates to the algorithms on a daily basis to ensure it is using the latest algorithms.

Evaluation and Extent of Implementation

The system is currently implemented at 18 clinics in Southern Ontario. Over 1100 patients and 50 physicians are participating in a randomized-controlled trial to test the safety, effectiveness and cost-effectiveness of the system. The system has been in place for approximately 9 months.

Demonstration

We will demonstrate the key features of the C3VT, including the physician interface, the patient interface, the population view and the goal-setting area where patient and physician can see the impact of various changes on the patient's risk profile.