Making sure best practice guidelines are applied in every single case without fail by each healthcare provider can be challenging. Ensuring patients actually follow these guidelines can be equally as challenging. This study is evaluating an innovative technology-based solution for increasing compliance with best practice guidelines and improving chronic disease management practices in the Acute Coronary Syndrome (ACS) population. In this study, Integrated Voice Recognition (IVR) technology is being used as a tool for monitoring long-term compliance with best practice guidelines against standard care.

The Practice Gap

Acute Coronary Syndrome is a significant public health problem in Canada. Patients with ACS include those admitted to hospital with acute myocardial infarction as well as those patients admitted with cardiac-related symptoms who are at risk for heart attack. Large clinical trials have provided evidence for the development of standardized evidence-based guidelines (EBGs) to treat ACS. Compliance with these guidelines significantly improves survival. Despite the development and dissemination of evidence-based guidelines, their use among patients with ACS is suboptimal. A number of patients, for a variety of reasons, come off the best practice guidelines during the first six months post-hospital discharge. This is a major risk to patients, and it raises concerns about the continuity of care as patients move between the hospital and community settings.

The failure to reach clinical treatment goals in the hospital setting is largely due to the absence of a system to ensure adherence as part of the standard of care. Actively changing systems of care have been shown to be effective in reducing the gap in the application of secondary prevention guidelines in hospitalized CVD patients. The most successful hospital-based quality improvement program so far is the Get with the Guidelines (GWTG) initiative, developed by the American Heart Association (http://www.americanheart.org/presenter.jhtml?identifier=1165). This initiative involves multiple organizations and physicians who champion the process among their hospital teams of cardiologists, neurologists, primary care physicians, nurses, and pharmacists.

The Canadian Discharge Checklist

Safety-critical industries such as the airline sector have successfully employed checklist systems to ensure safety and quality of services. The University of Ottawa Heart Institute has adopted the same approach but with a checklist geared to heart attack patients. The “Guidelines Applied to Practice” (GAP) tool ensures all patients receive care at time of discharge according to evidence-based guidelines for pharmacotherapy and lifestyle modification, as well as supporting patient self-management. The checklist is an adaptation of the American Heart Association’s GWTG.

Nursing staff assess each patient prior to discharge for compliance against the EBGs. If any of the best practices are not in place, the most responsible physician is contacted, and the necessary actions are taken. In addition, the patient receives a copy of the tool to take to his/her family physician to ensure the plan of care is well understood and to enhance continuity of care.

Figure 1 presents the Guidelines Applied to Practice discharge tool. The checklist is written in lay terms to be easily understood by patients and is presented in question format. The tool is designed as a tear sheet, which allows patients to take one copy home to serve as a tool in managing their heart condition. The tool assists with supporting automatic referral to a smoking cessation program (if the patient is a tobacco user) and cardiac rehabilitation services. The GAP tool provides standardized education on diet, based on guidelines, and provides them with an exercise prescription.

Integrated Voice Response System

Integrated voice response (IVR) system is being used to transition patients safely into their home environment.

References:
Integrated voice response is an automated calling system that can assess patient compliance while incorporating patient education into the messaging. The IVR programme recognizes spoken voice responses and documents them using widely available computer spreadsheet technology. Nurse counsellors can scan the results of the IVR calls and respond with more personal interventions and assistance as appropriate.

**Research Methods**

A team at the University of Ottawa Heart Institute is leading a study to examine the role of IVR technology in improving medication compliance and reducing adverse events as patients transition from hospital to home.

In this study, we are using the IVR technology to regularly call discharged patients for a period of one year. The call will ask a series of questions to determine medication regimen compliance and provide educational support. The electronic system is set up to call patients at regular intervals (one, three, six, nine and 12 months) and ask questions about whether or not they are adhering to medications. Patient responses will be captured in a database designed to provide automatic alerts. In the event there is a change, an advanced practice nurse will follow up and attempt to return patients to the prescribed therapy, working with their primary care physician.

The study is comparing patients receiving the intervention with a group of patients receiving usual care. Experience from a previous pilot project revealed ease of use and high user satisfaction. Outcomes are being evaluated at six months post-hospitalization in both the intervention and control groups. This initiative has the potential to increase medication compliance, decrease adverse events while providing educational support. The large reach of this technology and its low cost platform make it a cost-effective tool for the healthcare system and for chronic disease management.

**Conclusions**

Best practice guidelines have proven to be a challenge in the battle to provide the best possible care to patients. The use of an innovative technology-based solution such as IVR has the potential to increase compliance with best practice guidelines and improving chronic disease management practices in the ACS population. If successful, the results of this study may offer solutions for other chronic disease prevention and management areas.
References & Reviews

Lea Carlyle, MA, Northern Alberta Cardiac Rehabilitation Program, Glenrose Rehabilitation Hospital, Edmonton, Alberta

A Taxonomy for Disease Management: A Scientific Statement From the American Heart Association’s (AHA) Disease Management Taxonomy Writing Group


The ability to compare and evaluate different programs is limited by the lack of a shared definition of disease management. The AHA’s Disease Management Taxonomy Writing Group developed a system of classification that can be used to categorize and compare disease management programs and to identify specific factors associated with their effectiveness. A disease management taxonomy was developed based on studies which included (1) interventions designed to improve outcomes and/or reduce medical resource utilization in patients with heart failure, diabetes, or depression and (2) clearly defined protocols with at least two pre-specified components traditionally associated with disease management. The eight domains included in the taxonomy are: (1) patient population, which is characterized by risk status, demographic profile, and level of comorbidity, (2) intervention recipient describes the primary targets of disease management intervention, (3) intervention content describes individual components that are included in disease management, (4) delivery personnel, (5) method of communication, (6) intensity and complexity distinguishes between the frequency and duration of exposure with respect to the target for disease management, (7) environment describes the context in which disease management interventions are delivered, and (8) clinical outcome include traditional and patient-centred measures. The Writing Group anticipates that the taxonomy will provide a system to assist in classifying the diverse components and programs of disease management. A copy of the full scientific statement can be obtained from: http://circ.ahajournals.org/cgi/content/full/114/13/1432.

Moving Research into Practice: A Decision Framework for Integrating Home Telehealth into Chronic Illness Care

Hebert MA, Korabek B, Scott RE. IJMI 2006;75:786-94.

Although home telehealth technologies are recognized as an effective alternative for some aspects of traditional care in chronic disease, they have not been readily adopted. This paper reviews the evidence supporting the effectiveness of home telehealth for diabetes care with attention to the range of technologies and outcome measures. When decision-makers and practitioners are considering transferring home telehealth research into practice, the authors suggest considering 3 key areas together in a decision framework. These include (1) the burden of illness, which generally includes longer term chronic illnesses such as diabetes, (2) evidence of technology effectiveness, and (3) proposed home care outcome indicators, which should include health conditions, human function, personal resources, accessibility, effectiveness and health system characteristics. The authors demonstrate the utility of the decision framework by applying it to diabetes care in a region of Alberta.

Effects of Self-Management Intervention on Health Outcomes of Patients with Heart Failure: A Systematic Review of Randomized, Controlled Trials


This systematic review evaluated the effectiveness of self-management (SM) strategies on all-cause hospital readmissions, hospital readmissions due to heart failure (HF), mortality, compliance with treatment adherence, adherence to SM strategies, and quality of life scores in HF patients. Studies reviewed included patients 18 years of age or older who were diagnosed with HF. The intervention had to be a SM intervention in which the patient was the primary decision-maker in managing their own care. The review was based on six randomized trials with 857 patients.