S.A. LEAR (Convener). Developments in telehealth for chronic disease management. Gerontechnology 2010;9(2):130; doi:10.4017/gt.2010.09.02.059.00 **Participants**: *S.A. LEAR (CANADA), E. MARZIALI (CANADA),* and *D. PRABHAKARAN (INDIA).* **ISSUE** Chronic diseases are responsible for the leading causes of death and result in the greatest burden on health care resources in both developed and developing countries. As the world's population ages, the prevalence of chronic diseases will increase and further burden health care infrastructure. Many organizations are exploring telehealth technologies as possible solutions for managing the increasing chronic disease patient population. **CONTENT** This symposium will highlight existing examples of telehealth for chronic disease management in Canada and India that can be applicable to a variety of environments. In addition, discussion will cover challenges and barriers to telehealth implementation. This symposium will be of value to academics, clinicians and health care decision-makers from developed and developing countries. **STRUCTURE** Scott Lear will highlight the work to date of the British Columbia Alliance on Telehealth Policy and Research focusing on the development of two Internet-based technology platforms for chronic disease management: one for delivering cardiac rehabilitation to patients with cardiovascular disease (virtual CRP) and one for the monitoring and self-management of patients with heart failure (virtual Heart Function Clinic). Elsa Marziali will provide an overview of key issues that need to be addressed when designing interactive technologies used to provide home health care to older adults, including parallel industrial design criteria that address the needs of older adults using products such as remote control devices for TVs, DVD players, landline phones, cell phones and other PDAs. D. Prabhakaran will showcase a smart phone based decision support system for the detection and management of cardiovascular diseases (CVD). Following the individual presentations, there will be an open discussion led by Scott Lear, focusing on the next steps to effectively use new web-based technologies for self-management and detection of CVD and usability issues that are relevant to older adults with chronic diseases. **CONCLUSION** There are increasing needs of developing telehealth technologies for chronic diseases management in Canada and India. Benefits and barriers to introducing such technologies for older adults in the two countries will be discussed.

Keywords: telehealth, smart phones, usability, chronic disease management

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S.A. LEAR. Activities of the British Columbia Alliance on Telehealth Policy and Research. Gerontechnology 2010;9(2):130-131; doi:10.4017/gt.2010.09.02.060.00 **Purpose** Over the past four years, the British Columbia Alliance on Telehealth Policy & Research (BCATPR) has leveraged the partnership between researchers and health authority decision-makers to develop and evaluate solutions for chronic disease management for patients in rural and remote communities in the province using telehealth. This presentation will highlight the work to date of the BCATPR focusing on the development of two Internet-based technology platforms for chronic disease management: one for delivering cardiac rehabilitation to patients with cardiovascular disease (virtual CRP) and one for the monitoring and self-management of patients with heart failure (virtual Heart Function Clinic). **Method** The Virtual Heart Function Clinic study assessed the feasibility of a website to support self-management and monitoring in

heart failure patients. Patients newly referred to a Heart Function Clinic were screened for eligibility. Twenty participants were recruited and entered their weight and symptoms onto the website for six months. A nurse monitored the website for changes in participant health status and telephoned the participants as necessary. Self-care, quality of life, six-minute walk test and NT-proBNP (a clinical measure for prognosis) were conducted. Follow-up assessments were conducted at three and six months. At six months, a semi-structured interview was performed to assess participant uptake of the intervention. Staff involved in the management of study participants were also interviewed to assess their uptake of the intervention. The vCRP is an ongoing randomized controlled trial to test the feasibility of an online interface to mimic the existing outpatient cardiac rehabilitation programs currently in use at hospitals across BC. Over a four-month period, a randomized group of ischemic heart disease patients from rural and remote communities will use the vCRP website in place of participation in a face-to-face cardiac rehabilitation program. **Results & Discussion** In the vHFC Study (the seventeen participants who completed the study) a significant change was observed on the maintenance subscale of the Self-Care of Heart Failure Index (p=0.039). Trends toward improvement were also observed in the six-minute walk test, in the Minnesota Living with Heart Failure questionnaire, and in the confidence and management subscale of the Self-Care of Heart Failure Index. This study demonstrated that heart failure patients were willing to use an Internet-based website to monitor their signs and symptoms. More importantly, the website proved to be effective at detecting changes in participants' signs and symptoms and its use is associated with improved self-monitoring skills. The presentation will conclude with implications of the Internet-based platforms for chronic disease management in the province and discusses the role of the BCATPR in facilitating research collaboration within the stakeholders of chronic disease management.

Keywords: telehealth, chronic disease management, Internet, cardiac rehabilitation

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E. MARZIALI. Interactive technology and home health care for older adults. Gerontechnology 2010;9(2):131-132; doi:10.4017/gt.2010.09.02.061.00 **Purpose** The objective of this presentation is to provide an overview of key issues that need to be addressed when designing interactive technologies used to provide home health care to older adults. Results of our studies of web-based home health intervention programs illustrate design guidelines for developing senior friendly websites and intervention programs. In addition, parallel industrial design criteria that address the needs of older adults using products such as remote control devices for TVs, DVD players, landline phones, cell phones and other PDAs will be discussed. **Method** Design criteria for older adults were used to develop web pages for two password protected web sites (Caring for Others [CFO]©; Caring for Me [CFM]©). The web sites support care provider-participant interactivity through the following links: (i) peer group e-mail; (ii) peer group threaded discussion forum; (iii) videoconferencing for individual and group meetings, (iv) posted educational materials, (v) pre-post intervention questionnaires; and (vi) disease-specific web site URLs. Usability studies conducted during the development of the web sites resulted in modifications according to older adult user recommendations. Pre-post intervention interviews with participants provided feedback on their use of technology to access health support services and associated health benefits. **Results & Discussion** The web pages for both CFO©; and CFM© web sites are easy to use, uncluttered, with intuitive icons and require very little use of the keyboard. A simplified training manual provides multiple images of each web page feature with clear instructions for negotiating the web site links. The design criteria used to develop the web-based home care intervention programs apply to the design of industrial products, in particular cell phones and any device with an electronic display for accessing user options. In the design of all interactive technology, the physical skills, interest level, and audio or visual limitation of older adults need to be addressed. Despite some evidence that technology design criteria are used to address the needs of older adults, most web site developers are designing primarily for a younger, computer and Internet literate population of users. Furthermore, cells phones, universal remote control devices and PDAs especially designed for

older adult users are not readily available. In summary, technology in whatever form is becoming more complex; for instance, automobile GPS systems, digital TVs, web site flash graphics, animations. etc. – and the design of these products mostly ignores the needs and limitations of older adults.

Keywords: telehealth, chronic disease management, Internet, usability
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V.S. AJAY, D. PRABHAKARAN. Smart phone based decision support system for the detection and management of cardiovascular diseases. Gerontechnology 2010;9(2):132;
doi:10.4017/gt.2010.09.02.062.00 **Purpose** Cardiovascular diseases (CVD) have reached epidemic proportions in developing countries, taking a huge toll on lives and national income[1]. Hence, screening and management of high risk individuals is critical to the prevention of CVDs. Decision Support System (DSS) software applications running on Smartphones have a huge potential to aid non-physician health workers to screen and provide evidence-based CVD prevention and control services. **Method** Predicting 10-year CVD risk using simple, non-laboratory methods (e.g. age, systolic blood pressure, smoking status, body mass index, reported diabetes status, and current treatment for hypertension)[2] and decisions for clinical management of individual risk factors can be automated using DSS software that runs on a smart phone. Such smart phones can even aid non-physician health workers to undertake screening services and evidence-based management of individuals with high CVD risk at the primary health care level, thereby improving the outreach of health services to the vast rural populace of developing nations. Further, in the long run, these decision support systems can improve connectivity between various levels of care thereby transforming the existing paper-based reporting system into a real-time, high quality CVD surveillance system that feeds knowledge for evidence based CVD prevention and control policies. **Results & Discussion** Application of information and communication technologies such as smart phones has huge scope in improving the delivery of CVD services and health information systems in developing countries. Research into acceptability and cost-effectiveness of such technologies needs to be undertaken in order to integrate them into the routine health system services.

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