Telehealth Nursing Resources

Journals

Journal of Telemedicine & Telecare

Telemedicine and e-Health

Journal of Health Communication Volume 17, Supplement 1, 2012 (special issue on mHealth

Online Videos

An Overview of Telehealth

http://www.youtube.com/watch?v=EPaASu_MXVs

Health Buddy Appliance - Telehealth

http://www.youtube.com/watch?v=ZucYSV-WEvA&feature=related

VA Telehealth: Real-Time Access To Care

http://www.youtube.com/watch?v=JJvmsMZoBzw
Examples of Articles


Skype is a popular and free software application that allows PCs and mobile devices to be used for video communication over the Internet. We reviewed the literature to determine whether the clinical use of Skype is supported by evidence. One small (n = 7) controlled clinical trial had assessed the effect of nursing communication using Skype on elderly patients with dementia and their carers. However, we were unable to identify any large, well-designed studies which had formally evaluated the safety, clinical effectiveness, security and privacy of Skype for the routine delivery of patient care. While there were many case reports and small studies, no firm evidence either in favour of, or against the use of Skype for clinical telehealth was found. The risks and benefits of using Skype for clinical purposes are not known.


Problem The Brazilian population lacks equitable access to specialized health care and diagnostic tests, especially in remote municipalities, where health professionals often feel isolated and staff turnover is high. Telehealth has the potential to improve patients' access to specialized health care, but little is known about it in terms of cost-effectiveness, access to services or user satisfaction. Approach In 2005, the State Government of Minas Gerais, Brazil, funded the establishment of the Telehealth Network, intended to connect university hospitals with the state’s remote municipal health departments; support professionals in providing tele-assistance; and perform tele-electrocardiography and teleconsultations. The network uses low-cost equipment and has employed various strategies to overcome the barriers to telehealth use. Local setting The Telehealth Network connects specialists in state university hospitals with primary health-care professionals in 608 municipalities of the large state of Minas Gerais, many of them in remote areas. Relevant changes From June 2006 to October 2011, 782 773 electrocardiograms and 30 883 teleconsultations were performed through the network, and 6000 health professionals were
trained in its use. Most of these professionals (97%) were satisfied with the system, which was cost-effective, economically viable and averted 81% of potential case referrals to distant centres. Lessons learnt To succeed, a telehealth service must be part of a collaborative network, meet the real needs of local health professionals, use simple technology and have at least some face-to-face components. If applied to health problems for which care is in high demand, this type of service can be economically viable and can help to improve patient access to specialized health care.


This article details a heart failure care model at North East Veterans Affairs (VA) Medical Center. The North East VA health system has been involved in quality improvement of heart failure care for many years. This involves continuous quality improvement in the full spectrum of treatment from admission through discharge and outpatient follow-up. Improving patient care is always the main goal. Assisting patients to better understand self-care concepts is key to avoiding heart failure exacerbations. Educating patients to identify problematic symptoms early and access the system for help can often avoid costly readmissions. The case study provided in this article highlights the journey of a heart failure patient treated at this VA hospital and the care coordination process, which is necessary for good patient care through use of multidisciplinary team members.


Nursing home telehealth systems can add a new dimension to health care delivery for individuals residing in long-term care settings. Live video and detailed images of residents can now be transmitted in real time via the Internet (cable modem or digital subscriber line) from long-term care facilities to health care providers' homes or offices. The purpose of this article is to describe the development, pilot testing, and challenges of one telecommunication system in a rural long-term care setting.

We assessed the satisfaction of onboard caregivers with the maritime telehealth service provided by the Centre de Consultations Médicales Maritimes (CCMM). We conducted a survey of captains and caregivers by email. Of the 385 surveys sent out, 165 (43%) were completed. Eighty four percent of responders (n = 110) thought that waiting time was satisfactory or very satisfactory, and 97% (n = 128) were satisfied or very satisfied with their relationship with the remote physician. Thirty eight per cent of participants (n = 50) considered that the physician understood the medical problem very well; understanding was good in 58% of cases (n = 76) and bad in only 4% of cases (n = 5). Sixty two per cent of participants (n = 83) sent pictures before consultation. The respondents were also satisfied with the telephone advice overall, the competence of the physicians providing the advice, the length of time spent waiting, the verbal prescription and the medical advice given. Onboard caregivers were generally well satisfied with the maritime teleconsultations and the advice provided by the CCMM physicians.


We studied whether preventive home monitoring of patients with chronic obstructive pulmonary disease (COPD) could reduce the frequency of hospital admissions and lower the cost of hospitalization. Patients were recruited from a health centre, general practitioner (GP) or the pulmonary hospital ward. They were randomized to usual care or tele-rehabilitation with a telehealth monitoring device installed in their home for four months. A total of 111 patients were suitable for inclusion and consented to be randomized: 60 patients were allocated to intervention and three were lost to follow-up. In the control group 51 patients were allocated to usual care and three patients were lost to follow-up. In the tele-rehabilitation group, the mean hospital admission rate was 0.49 per patient per 10 months compared to the control group rate of 1.17; this difference was significant (P = 0.041). The mean cost of admissions was 3461 per patient in the intervention group and 4576 in the control group; this difference was not significant. The
Kaplan-Meier estimates for time to hospital admission were longer for the intervention group than the controls, but the difference was not significant. Future work requires large-scale studies of prolonged home monitoring with more extended follow-up.


Objective: This study investigated the role of coping plans and the use of selection, optimisation and compensation (SOC) strategies within an experimental evaluation of a 26-week physical exercise intervention. Methods: Older women (N = 86, M age = 73.7 years) were randomly assigned to a telephone-assisted or a self-administered coping planning intervention after 6 weeks’ participation in an exercise programme. The number of different coping plans formulated, exercise-specific SOC strategy use and their interaction were used to predict objectively measured long-term adherence to the intervention. Results: The number of coping plans formulated ($\beta = 0.28$) and goal-pursuit strategies reported (sum score of optimisation and compensation strategies, $\beta = 0.39$) predicted adherence to the exercise programme over 20 weeks. The predictive strength of coping plans increased with decreasing numbers of goal-pursuit strategies ($\beta = -0.21$). Women supported via telephone reported significantly more coping plans than did women in the self-administered coping planning group, F(1,80) = 9.47, p = 0.003.

Conclusion: Coping plans have a buffering effect on adherence levels when use of SOC strategies is low. Older women’s adherence to physical activities may be improved if they are given direct support in generating coping plans involving strategies of selection, optimisation and compensation.


The tele–intensive care unit (tele-ICU) uses sophisticated telemedicine technology and a remote team of critical care experts, including nurses, to provide continuous monitoring, assessment, and interventional services to a large number of patients across multiple ICUs. This new practice environment offers experienced critical care nurses an opportunity for career and knowledge expansion while reducing some of the physical and emotional risks encountered at the bedside. The role of the tele-ICU is still evolving but focuses on 4 areas of responsibility: performing virtual rounds, managing patient alerts, providing ICU support, and coaching or providing teaching moments. The transition from the bedside into the tele-ICU role can be complex as tele-ICU nurses encounter ICU acceptance barriers and a lack of or a change in professional identity. A formal orientation program focused on competency is necessary for the successful transition from bedside nurse to tele-ICU nurse.


Specialist care consultations were identified by two research nurses using documentation in patient records, appointment diaries, electronic billing services and on-site observations at a 441-bed long term care facility. Over a six-month period there were 3333 consultations (a rate of 1511 consultations per year per 100 beds). Most consultations were for general practice (n = 2589, 78%); these consultations were mainly on site (99%), with only 27 taking place off site. There were 744 consultations for specialities other than general practice. A total of 146 events related to an emergency or unplanned hospital admission. The remaining medical consultations (n = 598, 18%) related to 23 medical specialities. The largest number of consultations were for surgery (n = 106), podiatry (n = 100), nursing services including wound care (n = 74), imaging (n = 41) and ophthalmology (n = 40). Many services which are currently being provided on site to metropolitan long-term care facilities could be provided by telehealth in both urban and rural facilities.

Cell phone-assisted self-management of diabetes offers a new approach to improving chronic care; however, introducing this new technology presents many challenges to a health care team. The George Washington University-District of Columbia Cell Phone Diabetes Project enrolled 32 patients with Type 2 diabetes from a community clinic using patients' cell phones connected to the Well Doc Diabetes Manager System with monitoring by case managers and monthly reports to primary care providers. Despite monetary incentives (cell phone rebates), dropout rate was high (50%), because of lack of use or inability to afford low-cost cell phone service. Active patients had sustained system use with improved diabetes standard-of-care goals and reduced hospitalizations and emergency department visits. On the basis of this pilot program, the authors assessed the multiple links in the chain (patients, case managers, primary care providers, support staff, medical record systems, disease management software, cell phones) that affect the success of a mHealth chronic care strategy.


Objective: As telehealth networks develop across Canada, new professional roles start to emerge. A university healthcare center part of an integrated health network has identified the need to introduce a clinical coordinator for specialized telehealth programs. However, very little is found in the current literature about the description or core competencies that such a professional should possess as well as the ways to implement this role. The objective of this study was to explore how healthcare professionals (HCPs) involved in a specialized teleoncology program perceive a new clinical telehealth coordinator (CTC) role within a university integrated healthcare network (UIHN) in a metropolitan area in Québec, Canada. Materials and Methods: A descriptive qualitative design was used and a purposive sample of nine HCPs, including
physicians, nurses, and pharmacists who were members of a UIHN teleoncology committee, was recruited. **Results:** The HCPs identified that the CTC was a multifaceted role. The core competencies identified by the HCPs included knowledge, expertise, and experience. Participants identified three key factors in the implementation of this role, namely, the structural support, having a common language, and making the implementation of this role relevant. **Conclusions:** The results suggest that this CTC role may be more complex than originally expected and that the diverse competencies suggest an expanded nature to this role. This has important implications for administrative strategies when addressing the key factors in the implementation of this role.


Objective To describe how information communication technology (ICT) is being used by programmes that seek to improve private sector health financing and delivery in low- and middle-income countries, including the main uses of the technology and the types of technologies being used. Methods In-country partners in 16 countries directly searched systematically for innovative health programmes and compiled profiles in the Center for Health Market Innovations' database. These data were supplemented through literature reviews and with self-reported data supplied by the programmes themselves. Findings In many low- and middle-income countries, ICT is being increasingly employed for different purposes in various health-related areas. Of ICT-enabled health programmes, 42% use it to extend geographic access to health care, 38% to improve data management and 31% to facilitate communication between patients and physicians outside the physician's office. Other purposes include improving diagnosis and treatment (17%), mitigating fraud and abuse (8%) and streamlining financial transactions (4%). The most common devices used in technology-enabled programmes are phones and computers; 71% and 39% of programmes use them, respectively, and the most common applications are voice (34%), software (32%) and text messages (31%). Donors are the primary funders of 47% of ICT-based health programmes. Conclusion Various types of ICT are being employed by private organizations to address key health system challenges. For successful implementation, however, more
sustainable sources of funding, greater support for the adoption of new technologies and better ways of evaluating impact are required.


The safety of telemental healthcare delivered to clinically unsupervised settings, such as a personal residence, must be established to inform policy and further the dissemination of telemental health programs. The aim of this article is to provide an overview of safety issues associated with telemental healthcare and, through a systematic literature review, evaluate the safety of telemental healthcare delivered to unsupervised settings. The review resulted in a total of nine studies that specifically evaluated the delivery of telemental healthcare to unsupervised settings. Six of the nine studies reviewed explicitly described safety plans or specific precautions that could be used if necessary. Two of the nine studies reported events that required the researchers to use safety procedures to effectively respond to concerns they had regarding participant safety. In both of these studies, the issues were resolved with prescribed safety procedures. Recommendations and future directions for the development and evaluation of safety protocols are discussed.


Telehealth is the use of telecommunication technology to exchange healthcare information between two or more parties and provide services to clients at a location remote from the clinician.


PURPOSE: The objective of the study was to explore the impact of telehealth interventions on individuals' self-care of heart failure (HF). BACKGROUND: Heart failure is a chronic illness that requires a complex treatment regimen over a long period. Historically, effective self-care has been difficult for this population. There is a need for innovative and effective approaches to improve individual self-care. Telehealth can potentially help individuals with HF follow the plan of
care resulting in improved health outcomes and a better quality of life. REVIEW METHODS: A comprehensive computer-assisted literature search using the terms "(telemedicine OR telehealth) AND (self-care OR self-management) AND (heart failure)" was conducted using electronic databases of ASP, CINAHL, Cochrane reviews, ERIC, PubMed, PsychINFO, Social Sciences Abstracts Index, and Web of Science for studies published between 2000 and 2010 to find research that met the inclusion criteria. RESULTS: Fourteen studies were included in the review. Telehealth resulted in significant improvement of HF self-care behaviors of daily weighing, medication management, exercise adherence, fluid and alcohol restriction, salt restriction, or stress reduction in the telehealth intervention group in 5 studies. Participants reported improved HF self-care behaviors in 3 other studies with pretest-posttest design. Five others found no difference between the intervention and control groups. Content analysis of the data in the qualitative study revealed themes suggesting that telehealth can be effective in promoting self-care for individuals with HF. However, small sample size and inadequate measurement methods limit the generalizability of the findings of the studies included in this review. CONCLUSION: Although this review included several studies with flawed design issues, the available evidence supports the use of telehealth in enabling self-care of HF. Further exploration is needed to determine the effect of telehealth on HF self-care outcomes using studies with high-quality design and improved data collection procedures.


The purpose of this study was to explore perceptions on effectiveness of telehealth for Heart Failure (HF) management beyond the initial acceptance phase in a home care setting. Participants included 31 home care nurses for surveys, 9 nurses for focus groups and 4 patients with HF and the telehealth nurse for interviews. Telehealth was perceived to benefit by contributing objective assessments, timely information regarding patient status, a sense of security, and patient accountability. However, barriers to use of telehealth included inadequate staff training, lack of
guidelines for client referrals and integration of telehealth in nursing workflow, lack of trust in equipment’s accuracy, and certain patient characteristics. The study exposed the role played by inadequate systemic guidelines and patient characteristics as factors affecting long-term use of telehealth for HF.


Objective To systematically review the literature on the implementation of e-health to identify: (1) barriers and facilitators to e-health implementation, and (2) outstanding gaps in research on the subject. Methods MEDLINE, EMBASE, CINAHL, PSYCINFO and the Cochrane Library were searched for reviews published between 1 January 1995 and 17 March 2009. Studies had to be systematic reviews, narrative reviews, qualitative metasyntheses or meta-ethnographies of e-health implementation. Abstracts and papers were double screened and data were extracted on country of origin; e-health domain; publication date; aims and methods; databases searched; inclusion and exclusion criteria and number of papers included. Data were analysed qualitatively using normalization process theory as an explanatory coding framework. Findings Inclusion criteria were met by 37 papers; 20 had been published between 1995 and 2007 and 17 between 2008 and 2009. Methodological quality was poor: 19 papers did not specify the inclusion and exclusion criteria and 13 did not indicate the precise number of articles screened. The use of normalization process theory as a conceptual framework revealed that relatively little attention was paid to: (1) work directed at making sense of e-health systems, specifying their purposes and benefits, establishing their value to users and planning their implementation; (2) factors promoting or inhibiting engagement and participation; (3) effects on roles and responsibilities; (4) risk management, and (5) ways in which implementation processes might be reconfigured by user-produced knowledge. Conclusion The published literature focused on organizational issues, neglecting the wider social framework that must be considered when introducing new technologies.

This chapter sponsored by AHRQ addresses issues of patient safety related to telenursing and telehealth.


Objective To see if, in the diagnosis of infant infection with human immunodeficiency virus (HIV) in Zambia, turnaround times could be reduced by using an automated notification system based on mobile phone texting. Methods In Zambia's Southern province, dried samples of blood from infants are sent to regional laboratories to be tested for HIV with polymerase chain reaction (PCR). Turnaround times for the postal notification of the results of such tests to 10 health facilities over 19 months were evaluated by retrospective data collection. These baseline data were used to determine how turnaround times were affected by customized software built to deliver the test results automatically and directly from the processing laboratory to the health facility of sample origin via short message service (SMS) texts. SMS system data were collected over a 7.5-month period for all infant dried blood samples used for HIV testing in the 10 study facilities. Findings Mean turnaround time for result notification to a health facility fell from 44.2 days pre-implementation to 26.7 days post-implementation. The reduction in turnaround time was statistically significant in nine (90%) facilities. The mean time to notification of a caregiver also fell significantly, from 66.8 days pre-implementation to 35.0 days post-implementation. Only 0.5% of the texted reports investigated differed from the corresponding paper reports.

Conclusion The texting of the results of infant HIV tests significantly shortened the times between sample collection and results notification to the relevant health facilities and caregivers.

Thanks to telephones, telecommunication, and telehealth, nurses are practicing across national, continental, and—thanks to some National Aeronautics and Space Administration initiatives—even universal boundaries. One major barrier, however, stands in the way of widespread e-health implementation on national and international levels—state-based licensing.


Mobile health (mHealth) encompasses the use of mobile telecommunication and multimedia into increasingly mobile and wireless health care delivery systems and has the potential to improve tens of thousands of lives each year. The ubiquity and penetration of mobile phones presents the opportunity to leverage mHealth for maternal and newborn care, particularly in under-resourced health ecosystems. Moreover, the slow progress and funding constraints in attaining the Millennium Development Goals for child and maternal health encourage harnessing innovative measures, such as mHealth, to address these public health priorities. This literature review provides a schematic overview of the outcomes, barriers, and strategies of integrating mHealth to improve prenatal and neonatal health outcomes. Six electronic databases were methodically searched using predetermined search terms. Retrieved articles were then categorized according to themes identified in previous studies. A total of 34 articles and reports contributed to the findings with information about the use and limitations of mHealth for prenatal and neonatal healthcare access and delivery. Health systems have implemented mHealth programs to facilitate emergency medical responses, point-of-care support, health promotion and data collection. However, the policy infrastructure for funding, coordinating and guiding the sustainable adoption of prenatal and neonatal mHealth services remains under-developed. The integration of mobile health for prenatal and newborn health services has demonstrated positive outcomes, but the sustainability and scalability of operations requires further feedback from and evaluation of ongoing programs.
Tan, K., & Lai, N. M. (2012). Telemedicine for the support of parents of high-risk newborn infants. *Cochrane Database of Systematic Reviews*, (6)

Background:; Telemedicine is the use of electronic communications technology to provide care for patients when distance separates the practitioner and the patient. As the parents and families of infants admitted to the NICU require major support from health professionals in terms of information and time, telemedicine has the potential to increase this support.; Objectives:; To evaluate if the use of telemedicine technology to support families of newborn infants receiving intensive care affects the length of hospital stay and parental/family satisfaction.; Search methods:; We searched the following databases: Cochrane Central Register of Controlled Trials (CENTRAL, The Cochrane Library, 2011, Issue 8), MEDLINE (from 1966 to September 2011), EMBASE (1980 to September 2011). We also searched ClinicalTrials.gov (http://www.clinicaltrials.gov) and the EudraCT (http://eudract.emea.eu.int) web sites. We searched the proceedings of conferences of the Canadian Society of Telehealth, American Telemedicine Association, the International Society for Telemedicine, the Annual Conference of The International e-Health Association, American Medical Informatics Association and MedInfo.; Selection criteria:; We attempted to identify randomised controlled trials that assessed the use of telemedicine designed to support parents of infants cared for in a Neonatal Intensive Care Unit (NICU) compared with standard support measures. Our primary outcome was the length of hospital stay, and secondary outcomes included parental and staff satisfaction, emergency hospital visits post-discharge and family utilisation of infant health-related resources.; Data collection and analysis:; Two review authors independently screened the studies, extracted the data and assessed the risk of bias of the one included study using the standard methods of the Cochrane Neonatal Review Group. We planned to express treatment effects as risk ratio (RR), risk difference (RD), number needed to treat (NNT) and mean difference (MD) where appropriate, using a fixed-effect model.; Main results:; A single study was included for analysis in this review. This study compared the use of telemedicine (Baby Carelink) for parents and families of infants in the NICU with a control group without access to this programme and assessed the length of hospital stay for the infants and family satisfaction in multiple components of infant care. The study shows no difference in the length of hospital stay (average length of stay: telemedicine group: 68.5 days (standard deviation (SD) 28.3 days), control group: 70.6 days (SD 35.6 days),
MD -2.10 days (95% confidence interval: -18.85 to 14.65 days). There was insufficient information for further analysis of measures of family satisfaction.; Authors' conclusions:.; There is insufficient evidence to support or refute the use of telemedicine technology to support the parents of high-risk newborn infants receiving intensive care. Clinical trials are needed to assess the application of telemedicine to support parents and families of infants in NICU with length of hospital stay and their perception of NICU care as the major outcomes.; CINAHL Note: The Cochrane Collaboration systematic reviews contain interactive software that allows various calculations in the MetaView.]


We examined how Australian telehealth service providers perceived and addressed ethical, medico-legal and clinical governance matters arising from service delivery. Thirty-seven telehealth clinicians and managers were interviewed and a qualitative content analysis was conducted. The services covered six Australian jurisdictions and a range of clinical disciplines. There were 11 medical specialities, surgery, mental health, paediatrics, nursing and allied health. Thirty services (83%) used video consulting and 25 (68%) delivered services to rural areas. Telehealth was reported to be beneficial by reducing adverse events, improving health outcomes, offering increased patient choice of service delivery, and improving access to services for rural areas and home care. There were observations of gains or no change in patient-provider rapport compared to face-to-face communication, with some patients reportedly preferring video. Those interviewed reported some problems with privacy and security, and variable informed consent practices. No examples of malpractice were raised, although there was a common misperception that distant providers were not responsible for clinical care. With respect to clinical governance, telehealth was seen as enabling improved quality, integration and implementation of evidence-based care, and to be a major support for the rural health workforce. Although there were potential ethical, medico-legal and governance problems in Australian telehealth services, these had been easily managed in practice.

The purpose of this article is to provide information to improve the quality of care of veterans living in geographically isolated areas who require treatment for mental health issues. Because interactive care solutions are currently hot topics in the health care community, they should be viewed as possible strategies to meet the needs of this specialty group of veterans. An intervention using a mobile clinic and clinical video telehealth reduces distance barriers by making it possible for mental health specialists to come to rural veterans instead of the veteran attempting to find a way to get to the practitioner, who may be located in a clinic or hospital many miles away. This article focuses on an alternate strategy—telehealth in mobile clinics—as a possible solution to the mental health crisis of veterans in rural areas.
### Websites

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