Building the Case for Personal Connected Health

With a mission to promote an ecosystem of interoperable, plug-n-play personal connected devices and services, Continua Health Alliance applauds telehealth research efforts that aim to demonstrate the effectiveness of connected health programs to deliver high quality care, improve clinical outcomes and better manage healthcare resources. Following is a summary of recent study data highlighting the positive results achieved using remote monitoring technologies.

Analysis of data from the Veterans Health Administration (VHA) Care Coordination/Home Telehealth (CCHT) program, from a cohort of 17,025 CCHT patients (65+ years old; predominantly male) demonstrated:
- 25% reduction in numbers of bed days of care
- 19% reduction in the number of hospital admissions
- 86% mean satisfaction score
CCHT is now a routine service for VHA patients with chronic conditions as they age.

Since 2006, the Center for Connected Health (CCH) at Partners HealthCare has been offering the Connected Cardiac Care Program (CCCP) to non-homebound patients with heart failure. To date, more than 1,000 patients have been enrolled in this program resulting in close to a 50% reduction in hospital readmission rates overall. 84.7% of patients reported they were able to gain control over their heart failure while in the program.

In February 2012, Geisinger Health Plan announced that its interactive voice response post-hospital discharge telemonitoring solution demonstrated a 44% reduction in 30-day hospital readmissions. Approximately 1,000 heart failure patients are in the remote monitoring program at any given time; patient compliance has been greater than 85%. Geisinger has expanded the program to include patients with hypertension and diabetes.

In March 2012, researchers from the Stanford Prevention Research Center reported that Smartphone applications can raise awareness and motivate older adults to improve their health. After eight weeks, 80% of participants reported increased awareness regarding the targeted health behaviour (increased walking, decreased sitting time, improved diet), and three-quarters said the apps helped track the behavior; two-thirds indicated the apps increased their motivation to make improvements.

A remote monitoring program implemented by the Ontario Telemedicine Network, part of the Canadian Ministry of Health and Long-Term Care, involving more than 800 patients with congestive heart failure or COPD, demonstrated:
- 65% reduction in hospital admissions
- 72% reduction in Emergency Room visits
- 95% reduction in walk-in clinic visits

Healthcare Unwired, a 2010 report published by PricewaterhouseCoopers Health Research Institute, cites data from several remote monitoring studies, including:
- Congestive heart failure patients receiving care via a trans-European home care management system saw a 35% decrease in in-patient length of stay, a 10% reduction in office visits and a 65% drop in home health visits
- In Canada, COPD patients reduced hospital readmissions by 50% and acute home exacerbations by 55%
Building the Case (continued)

Based on independent research by a consortium of universities, the UK Department of Health released preliminary findings from the largest randomized control trial of telehealth and telecare in the world. The three year study, involving 6,191 patients with heart failure, diabetes or COPD, and 238 general practices, demonstrated:

- 45% reduction in mortality rates
- 15% reduction in emergency visits
- 20% reduction in emergency admissions
- 14% reduction in elective admissions
- 14% reduction in number of bed days of care

A November 2011 report published by Espicom Business Intelligence, Telemonitoring: Challenges & Opportunities, included data from numerous studies, including:

- The US Department of Veteran Affairs DiaTel study demonstrated significantly larger decreases in A1C at three months (1.7 vs 0.7%) and six months (1.7 vs 0.8%; p< 0.001 for each) for veterans receiving active care management and home telemonitoring versus those receiving a monthly care coordination telephone call.
- Numerous telemonitoring studies in Germany have focused on patients with heart failure:
  - Telemedicine for the Heart showed 21.5% fewer hospitalizations and a 51.7% reduction in mortality within the first year
  - A randomized, controlled study of 214 heart failure patients (NYHA stages I-IV) demonstrated a 48% reduction in the number of days in the hospital and a 14.7% mortality rate, compared with 27.1% in the control group
  - Initial data from the CorBene project, including 306 patients, showed 81.2% of patients were being treated according to guidelines, with 10.8% of these showing a clear improvement in clinical symptoms
  - The ProHeart study demonstrated a 48% reduction in the number of days in hospital, and an overall cost reduction of 39.5%
- The CARME (CAtalan Remote Management Evaluation) study assessed remote patient monitoring with motivational educational support and found that patients showed a continuous and significant improvement in their perception of quality of life

A retrospective study published in the American Journal of Managed Care examined the effect of an integrated, clinician focused telehealth monitoring system for nearly 6,000 Medicare beneficiaries receiving home health services. Patients in the telehealth group had a 7-percentage-point lower probability of hospitalization within the first 30-day episode of home healthcare than those in the non-telehealth group.

- A study published in The Journal of Primary Care and Community Health, evaluating a cohort of 699 Medicare patients with diabetes, reported a 30-day hospitalization probability for telehealth and non-telehealth patients was 7% and 19%, respectively. Patients in the telehealth group had a 12 percentage point-lower probability of hospitalization within the first 30 days of home health care than non-telehealth matched patients.

Continua Health Alliance is an international not-for-profit industry organization enabling end-to-end, plug-and-play connectivity of personal health devices and services. Continua is a pioneer in establishing industry standards and security for connected health technologies such as smartphones, gateways and remote monitoring devices. Its activities include a certification and brand support program, events and collaborations to support technology and clinical innovation, and outreach to employers, payers, governments and care providers. With nearly 250 member companies reaching across the globe, Continua is comprised of technology, medical device and healthcare industry leaders and service providers dedicated to making personal connected health a reality.

For more information visit: www.continuaalliance.org