



**A**dvancements in telehealth are expanding the reach of physicians and other healthcare professionals beyond the traditional walls of hospitals and clinics, enabling them to keep an eye on patients at home and in other facilities. In the near future, an interoperable ecosystem of connected personal health devices and services could help address today's most pressing healthcare challenge: improving outcomes and enhancing access while reducing the skyrocketing costs associated with an aging population, chronic diseases and unhealthy lifestyles.

Continua Health Alliance is a non-profit, open industry group of leading healthcare and technology companies joining together to improve the quality of personal healthcare. With more than 200 member companies around the world, Continua is dedicated to establishing an ecosystem of certified, interoperable personal health solutions. By harnessing technology to augment healthcare delivery, this innovative approach to "connected health" or "eCare" provides a powerful way to increase healthcare access, enhance outcomes and reduce costs. At the same time, extending those solutions into the home empowers individuals, fosters independence and provides the opportunity for truly personalized health and wellness management.

### **CHRONIC DISEASE MANAGEMENT**

Nearly half of all Americans — 125 million people — have at least one chronic condition, and half of those suffer from two or more. Expenditures for individuals with chronic diseases consume

more than 75 percent of total U.S. medical care costs, according to the Centers for Disease Control and Prevention. Connected health solutions such as remote patient monitoring can enhance the care of these individuals while reducing associated costs.

A four-year study of more than 30,000 patients by the U.S. Department of Veterans Affairs (VA) showed that its telehealth program reduced the number of bed days of care by 25 percent and cut the number of hospital admissions and readmissions by 19 percent. With a patient satisfaction rate of 86 percent, the VA's program was well received by patients who recognized its capability to enhance their health and well-being. The average yearly cost to care for these patients was \$1,600. This is a significant cost savings compared to home-based primary care costs which often averaged more than \$13,000 per patient, or to nursing home care costs which were more than \$77,000 per patient per year.

By providing accurate, ongoing trend data, connected personal health devices give care teams easy access to vital patient information, thereby enabling more informed treatment decisions. Remote patient observation, for example, not only enables physicians and care coordinators to more accurately assess the overall trends in a particular patient's personal lifestyle but also empowers them to intervene more quickly and easily as needed. Also instead of waiting for the patient's next routine visit, care providers can address potential health problems early on, which also reduces the number of unnecessary emergency room visits or even preventable deaths. A randomized study of 280 patients from 16 U.S. heart failure centers found that the use

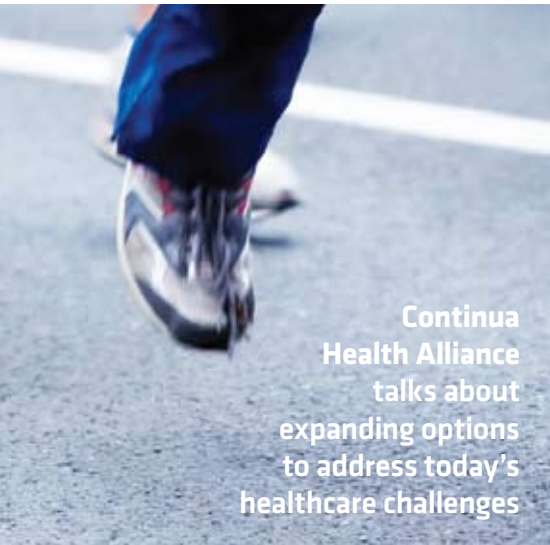
of a home monitoring device that captured and transmitted the weight of heart failure patients reduced the six-month mortality rate by 56 percent compared to a group of patients who did not use home monitoring.

Connected health solutions allow healthcare professionals to accommodate a larger number of patients with chronic diseases while improving outcomes and controlling healthcare costs. Considering the number of qualified healthcare professionals is decreasing worldwide, eCare will become increasingly important. A system of connected health solutions would empower patients and their loved ones to assume greater responsibility for managing chronic conditions and improve compliance to treatment plans.

### **AGING INDEPENDENTLY**

By 2025, it is estimated that 1 billion people will be over 60 years old. By 2050, this figure is expected to double. The concept of connected health has tremendous value in allowing more people to age independently and securely in the comfort of their own homes. Even family members thousands of miles away would be able to check the well-being of their aging relatives using telehealth devices such as bed-pressure monitors, motion detectors and fall sensors.

As just one example, automatic medication reminders connected via fixed lines, wireless or broadband could help seniors, caregivers and loved ones keep on top of medication regimes. According to the National Council on Patient Information and Education, up to 60 percent of all medication prescribed is taken incorrectly or not at all. Prescription medications have improved



Continua Health Alliance talks about expanding options to address today's healthcare challenges

health and longevity for many seniors, but they have to be taken properly to be effective.

Connected health solutions can provide an attractive alternative to costly assisted care facilities. By offering a viable alternative to institutional living, Continua Certified products can help improve the quality of life for our aging population while alleviating some of the burden on our social and healthcare systems. It's also important to improve the efficiency of and access to healthcare by augmenting face-to-face encounters with providers, especially for those individuals living in rural areas or for whom office visits are problematic.

**HEALTH AND FITNESS**

The third area where connected health solutions can provide value is overall health and fitness. The healthcare industry's increased focus on wellness results from a desire to improve quality of life while containing skyrocketing healthcare costs. Increasingly poor lifestyle choices are the largest contributors to common adverse health outcomes, dramatically increasing the risk for disease. Making fitness a priority in people's daily regiment delivers substantial dividends; the costs of waiting to intervene until after disease is present are staggering.

Connected health empowers individuals to ensure that fitness is a focused part of their daily lives, encouraging a healthier lifestyle. Devices such as blood pressure cuffs, activity monitors, pedometers and weight scales can link patients, trainers and physicians so that fitness and progress levels can be screened without the need for additional office check-ups or unnecessary hospital visits.

A growing number of people are plugging into a data-driven revolution as a way to live longer and better. Consumers are interested in personal health records offered by Google Health and Microsoft HealthVault, as well as such innovations as pedometers that connect to other consumer electronic devices such as cell phones or MP3 players.

**THE DIGITAL AGE**

In today's digital age, the Internet, PCs, netbooks, cell phones and smart phones are ubiquitous. Leveraging these technologies, personal connected health solutions can offer individuals a level of control and involvement that both engages and empowers them in managing their own healthcare.

The Internet generation entering healthcare fields today have grown up with technology and expect to harness it to offer advances in healthcare. With the accelerating push for Electronic Health Records (EHR) and personal health records, tying personal information to provider tools allows a richer context of personal health. The concept of connected health is a logical next step to extend the capabilities of our health systems.

**ADVANCE CONNECTED HEALTH**

Continua Health Alliance is working to facilitate an ecosystem of connected technologies, devices and services that will enable a more efficient exchange of fitness, health, and wellness information. This ecosystem is made possible by the creation and implementation of interoperability guidelines that specify how systems and devices made by different companies can be designed to work together to provide better information access.

In February 2009, Continua announced its Version 1 Design Guidelines. Continua members

are already introducing compliant products and services based on these specifications. To build trust and confidence among customers, Continua has created a stringent product certification program with a recognizable logo signifying interoperability with other certified products. The first Continua Certified products are coming to the market now, with more expected in the months ahead.

As the industry builds upon the Version 1 Design Guidelines, Continua is working toward the next generation of guidelines to enable an increased array of devices and solutions. As part of that effort, Continua recently selected two Low Power Radio standards. The alliance selected Bluetooth low energy wireless technology to enable low power mobile devices to be used to track an individual's health and fitness levels. ZigBee Health Care technology was selected for power sensors in devices such as motion detectors that could be incorporated into a system used to keep an eye on the daily activities of those who may require assistance.

**CHANGING HEALTHCARE DELIVERY**

Providing adequate healthcare while controlling skyrocketing costs is a pressing concern for nations around the world. National healthcare policy will be an important factor in the adoption of connected health solutions and the deployment of Continua Certified devices. Continua is working with legislators and regulators around the world to show how increased industry adoption of interoperable telehealth solutions will help improve outcomes, increase access and reduce costs. The Alliance is working with legislators and regulators to allow providers to be reimbursed for adopting telehealth technology.

Connected health systems provide a compelling way to meet the challenges of increased access, improving outcomes for patients in need and reducing healthcare costs. By connecting people to their healthcare providers, care teams, and family members through integrated information technology, Continua will help them meet their healthy living goals, better manage their chronic diseases, and live independently as they age. **FH**

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