MobileHelp®

Healthcare Division

The Powerhouse Combination of Telehealth and PERS

A Whitepaper Presented by MobileHelp® Healthcare

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Executive Summary

The majority of seniors prefer to remain at home, but two primary factors work against the ability to age in place successfully: high rates of chronic illness and high rates of falls among older adults.

The development of technology is at a promising point of advancement: both telehealth and personal emergency response systems (PERS) have the ability to aid in both chronic disease management and fall prevention/response. This can best be understood by examining the utilization of both telehealth and PERS technologies within the current healthcare and consumer landscapes. In so doing, it quickly becomes clear that a system which employs both provides older adults and their caregivers with a more comprehensive platform for successful aging in place.

Challenges to Aging in Place: the Prevalence of Chronic Illness and Falls

The Center for Disease Control defines aging in place as "the ability to live in one's own home and community safely, independently, and comfortably, regardless of age, income, or ability level." As a concept, aging in place spans such aspects of life as the levels and ranges of community support available, interior and exterior design of living spaces (universal design), and access to the right levels of healthcare at the right time.

And the older population is already set to age in place. According to the U.S. Department of Health and Human Services, there are currently 11 million elderly people living on their own, and a recent AARP study found that 95 percent of seniors stated that they "prefer to live in their own home," even when faced with declining health and a need for some form of monitoring or care.

Access to healthcare is one of the most difficult challenges to successful aging in place, considering the following factors:

- Currently 90 percent of Americans age 75 and older have at least one chronic medical condition, and 20 percent have five or more chronic illnesses (AARP, 2009). The aging population is also increasing rapidly – the population of Americans age 65 and older is expected to double to 71.5 million people in the next 25 years due to increased life expectancy and the aging of the baby boomers.

- Chronic diseases place a significant burden on individuals as well as health care systems: The cost of caring for people with five or more chronic illnesses is roughly 17 times higher than for those without chronic illness (Bodenheimer & Berry-Millett, 2009), and it accounts for more than 75 percent of the $2 trillion spent each year on healthcare in the U.S. In addition, the anticipated growth in the aging population is expected to increase health care costs by 25 percent by the year 2030.

3 out of 4 healthcare dollars are spent on chronic disease

To that end, care delivered in the home as opposed to the healthcare setting is highly advantageous for older people dealing with chronic conditions, serving to preserve their health, help them maintain function, and reduce health care costs and long-term care needs.

But other challenges related to care within the home for the elderly exist: specifically, the prevalence of falls among older adults who live on their own. Consider the following:

- Approximately one-third of all seniors will fall each year: Every 15 seconds, an older adult is treated in the emergency room for a fall and every 29 minutes, an older adult dies following a fall.

- Among older adults, falls are the leading cause of fractures, hospital admissions for trauma, and injury deaths. Falls are also the most common cause of older adult traumatic brain injuries, accounting for over 46 percent of fatal falls.

- The nation spends $30 billion a year treating older adults for the effects of falls, and it's projected that direct treatment costs will reach $59.6 billion by 2020.

And even the fear of falling can adversely affect health. The American Academy of Family Physicians notes that: "the fear of illness or falls and subsequent institutionalization often leads to dependence and increasing immobility, followed by decreased quality of life."

All of which summates to the simple notion that aging in place is enabled by: 1) taking management of chronic illness out of the healthcare setting and putting it back into the home where 2) falls and fall prevention must also be addressed.

And the technologies that make this possible are already available in the forms of telehealth and PERS.

Telehealth and Chronic Illness: the Value of RPM

Telehealth, and specifically remote patient monitoring (RPM), has demonstrated the ability to effectively manage chronic illness while simultaneously improving outcomes, lowering cost, and improving patient satisfaction. The greatest benefit of telehealth is it facilitates patient self-management of conditions and provides them with quick access to important healthcare information and educational materials.

Remote Patient Monitoring Technologies:
Chronic Disease Management Comparative Study

25%
Reduction in bed days of care

20%
Reduction in number of admissions

86%
Satisfaction rating
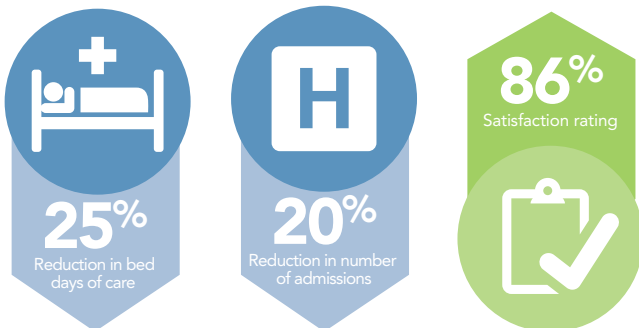
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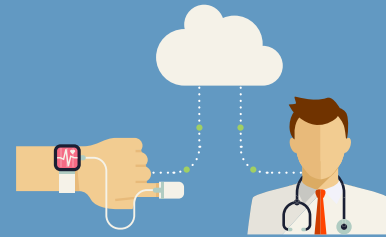
REMOTE PATIENT MONITORING (RPM)
The most quintessential form of telehealth, RPM involves the collection of biometric health information (vital signs such as weight and blood pressure) from a patient in one location through electronic communication channels. This information is then sent to a provider in a different location for ongoing monitoring and clinical oversight, and the home health provider remains in close contact with the patient, providing feedback and clinical intervention when necessary.
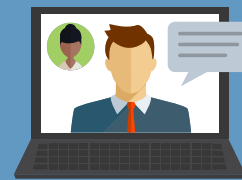
LIVE VIDEO
This involves live video interaction between a patient or caregiver and a provider in real time. If an in-person encounter is unnecessary or impossible, a quick live video appointment can be a good substitution. Many RPM systems now integrate the use of video to augment clinical oversight and educational opportunities.
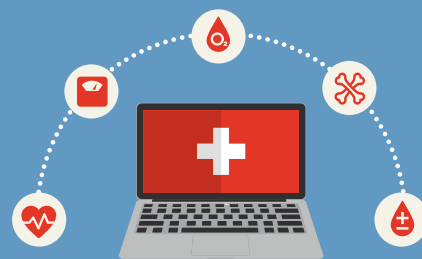
STORE-AND-FORWARD
This involves a transmission of recorded health information, such as x-rays, photos or pre-recorded videos, through a secure electronic communications channel to a healthcare provider. The provider then uses this information to evaluate the patient's condition.

Use of RPM systems among home health patients in post-acute care settings is the current standard telehealth application, and is typically a strategy to keep readmission rates low in the first 30-90 days following discharge. With congestive heart failure patients, for example, use of remote patient monitoring has demonstrated a 50 percent reduction in readmission rates.[1]

Because it has been so successful within those parameters, many healthcare providers and managed care organizations (MCOs) are experimenting with use of long-term monitoring for patients within chronically ill populations – extending RPM with clinical oversight by months or even years.

The upside to telehealth technology is its proven success in keeping emergency department "frequent flyers" (common among patients with chronic disease) out of the hospital in the long term, while also giving those patients the feedback and support they need to make positive changes to their health (such as diet or exercise).

PERS and Falls: the Value of Prevention/Quick Response

Medical alert systems, also known as PERS are devices which connect seniors to 24-hour call centers to access emergency help. Available on the market for more than thirty years now, PERS was initially intended to simply provide a greater peace of mind for seniors living alone.

PERS has demonstrated a number of financial and clinical benefits to its users by providing immediate access to emergency services. If these services are delayed, complications often set in– dehydration, pressure sores, and missed medications to name a few. One study found that 67 percent of people who fall and are incapacitated such that they cannot receive emergency services for more than 72 hours will not survive. On the other hand, if help can arrive within one hour (as is frequently the case with PERS), individuals are more than

6 times more likely to survive the episode.[2] Another study demonstrated that when PERS was available to a population, hospital admission rates were lowered, length of hospital stay and bed utilization was lower; and overall cost of treatment was significantly reduced as a result of providing expedient access to emergency services.[3]

While a button to signal for help is essential, many PERS today also include automatic fall detection. Although no automatic fall button can detect 100 percent of falls, one 2009 British Medical Journal study found that a button alone is not always enough: A staggering 80 percent of seniors who had a debilitating fall were unable to manually activate the emergency response device. Another study found that when PERS was available, hospital admission rates and bed utilization was lower as a result of expedient response and access to emergency care.

In addition, consider that patient populations managing one or more chronic conditions are much more likely to require access to emergency services than those that are not.

The Intersection of Telehealth and PERS

MobileHelp has recognized the unmet need in this market and recently introduced a new combination that leverages the strengths of both telehealth and PERS: its MobileVitals® solution is a telehealth system with PERS as its foundation.
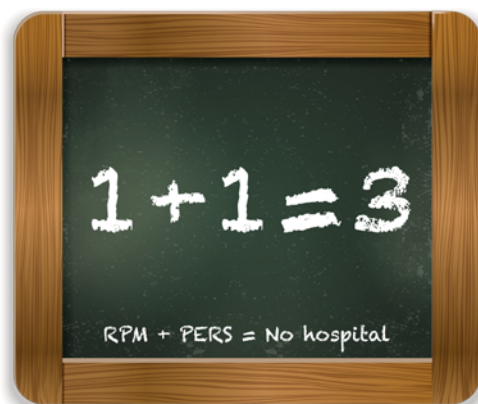
Designed to address the needs of people managing chronic conditions, MobileVitals combines the educational and clinical benefits of telehealth technologies, with the security and peace of mind of a PERS into one system.

Using MobileVitals, patients take their own vital signs on a daily basis, and that information is stored in a central location which can be accessed via an internet connection by care providers via a clinical dashboard. In addition, it includes a convenient medication reminder feature to help manage patient adherence and reduce complications stemming from medication errors.

MobileVitals is currently being utilized in healthcare systems in Indiana, Illinois, Florida, Pennsylvania, New York and North Carolina. This includes a step-down telemonitoring pilot at the Visiting Nurses Association in Rockford, Illinois, to address the needs of patients moving out of the clinically-overseen telehealth program – but who still wanted to be able to monitor their vital signs every day.

The results of the pilot were highly successful: the patients had overwhelmingly positive response to the ability to track their own biometric information. There was a reported 47 percent increase in patient confidence levels regarding their ability to manage chronic conditions, and an 18 percent increase in physical activity and mobility. In addition, the study demonstrated that a staggering 86 percent of users continued to utilize the system after 24 weeks in the program, even with zero clinical oversight. By comparison, recent reports indicate that up to 80 percent of fitness trackers are no longer used after 24 weeks.[4]

In addition, several patients identified negative trends in their vital signs throughout the duration of the pilot program, and were able to specifically address and rectify those issues with their healthcare providers – with no physician or hospital visits required. One patient noticed a negative trend in her vital signs and correctly determined she needed immediate medical assistance. She pressed the button on her PERS device to get emergency help, and because she has access to her own vital sign data, she was able to provide the emergency responders with the information they needed to provide effective treatment.

What Lies Ahead

As discussed, the combined strengths of telehealth and PERS technologies have significant potential to help older adults age in place successfully.

[1] *A Meta-Analysis of Remote Monitoring of Heart Failure Patients* - http://content.onlinejacc.org/article.aspx?articleid=1140154

[2] *Impact of a personal emergency response system on hospital utilization by community-residing elders* - http://www.ncbi.nlm.nih.gov/pubmed/7660208

[3] *Geriatric Conditions and Disability: The Health and Retirement Study* - http://annals.org/article.aspx?articleid=735940

[4] *The Future of Biosensing Wearables* - http://www.slideshare.net/RockHealth/the-future-of-biosensing-wearables-by-rockhealth

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