

## Fact Sheet: Highlights from the Remote Patient Monitoring Position Paper

### Why Remote Patient Monitoring is Important

Remote patient monitoring (RPM) technologies have been shown to be effective in helping to manage chronic disease, post-acute care, and monitoring the safety of the older adult population. RPM technologies can help older adults slow the progression of chronic disease and ensure continued recovery after being discharged from an acute care setting. RPM has the potential to help the large number of older adults that are challenged by chronic and acute illnesses and/or injuries.

#### *Chronic Disease*

- Eight out of ten older Americans are living with the health challenges of one or more chronic diseases.<sup>1</sup>
- Chronic disease accounts for three quarters of America's direct health expenditures.<sup>2</sup>
- People with chronic disease cost 3.5 times as much to serve compared to others, and account for 80% of all hospital bed days and 96% of home care visits.<sup>2</sup>

#### *Acute Illness*

- 17.6% of all Medicare hospital admissions are readmissions, and a majority of these are avoidable.<sup>3</sup>
- Readmissions cost \$15 billion annually.<sup>3</sup>
- If successfully prevented, Medicare could save \$12 billion of the \$15 billion in readmissions costs.<sup>3</sup>

#### *Injuries*

- In 2004, falls were the leading cause of injury deaths among older adults and

were responsible for about 14,900, or almost 43%, of all unintentional injury deaths in this age group.<sup>4</sup>

- Over 1.8 million seniors were treated in U.S. hospital emergency departments for fall injuries, and one out of four was subsequently hospitalized.<sup>4</sup>
- Getting help quickly after a fall reduces risk of hospitalization by 26%<sup>5</sup> and death by over 80%.<sup>6</sup>
- Those who fall are 2 to 3 times more likely to fall again.<sup>7</sup>
- In a study of 100 people with dementia, patients fell over 400 times per year<sup>8</sup> and estimates of wandering ranged from 6 to 100%.<sup>9</sup>

### RPM for Chronic Disease Management and Post-Acute Care

#### *Chronic Disease Management*

Many people have the potential to live long, active lives despite the presence of a chronic health condition. If these conditions are detected early and managed and monitored diligently, many can avoid serious health complications and avoid the attendant costs. RPM technologies provide significant opportunity to maintain independence, prevent health complications and reduce expenditures. RPM technologies can facilitate six components of chronic disease management including 1. early intervention, 2. integration of care, 3. coaching, 4. increased trust, 5. workforce change, 6. increased productivity.<sup>10</sup>

- Findings from comparative studies conducted on 17,025 patients enrolled in the VHA Care Coordination/Home

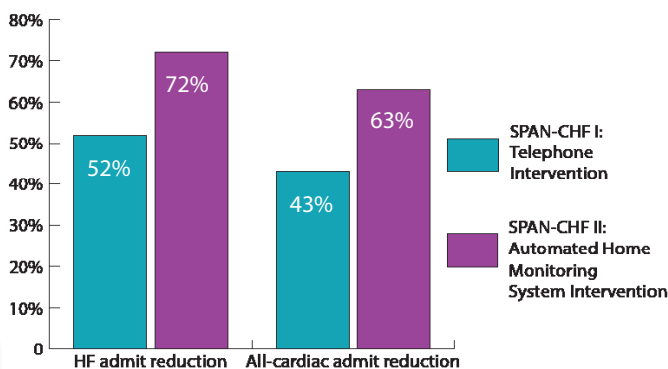
- Telehealth (CCHT) program in 2006 and 2007 utilizing an in-home monitor show a 25% reduction in bed days of care, 20% reduction in numbers of admissions, and mean satisfaction score rating of 86%.<sup>11</sup> The cost of the program is \$1,600 per patient per annum compared to the direct cost of VHA's home-based primary care services of \$13,121 per patient per annum, and market nursing home care rates that average \$77,745 per patient per annum.<sup>11</sup>

#### Post-Acute Care Management

Personal health records and RPM technologies support or enable care models that reduce avoidable readmission rates by improving coordination across the continuum of care and promoting seamless transitions from the hospital to home, skilled nursing care, or home health care. Similar to applications in chronic disease management, RPM technologies enable better post-acute care self-management, early intervention, and other improvements mentioned in the previous section.

- The Specialized Primary and Networked Care in Heart Failure Studies (SPAN-CHF I and II) study found that the combination of in-home monitoring and coaching after hospitalization for congestive heart failure (CHF) reduced rehospitalizations for heart failure by 72%, and all cardiac-related hospitalizations by 63%.<sup>12,13</sup>

### Preventing Readmissions: The Specialized Primary and Networked Care in Heart Failure Studies (SPAN-CHF I and II)<sup>12,13</sup>



### RPM for Patient Safety Monitoring and Injuries

To promote safety and prevent injuries among older adults, many technology developers are focusing their attention on RPM technologies that detect and ultimately prevent falls and wandering. The incidence of falls among older adults is high, as are the associated health care costs. Additionally, older adults with dementia are at increased risk of both falling and wandering.

Fall detection, fall prevention, and location tracking technologies monitor patients in terms of their location, balance, and gait. Such devices allow caregivers and other parties to assess patient mobility and safety.

#### Fall Detection Technologies

The primary goals of fall detection technologies are to distinguish falls from activities of daily living (ADL) and then contact authorities who can quickly assist the individual. Devices range from:

- active systems like PERS and pull cords requiring older adults to manually activate the system
- passive devices, which utilize a variety of sensors, including motion and pressure sensors, accelerometers, and gyroscopes to monitor location, position, immobility, speed of motion, and distance covered.

#### Fall Prevention Technologies

Most of the fall prevention technologies are in the development phase and have not been thoroughly evaluated or experienced widespread deployment. Such technologies are expected to predict likelihood of falls by passively observing movement and gait patterns as well as pressure distribution.

#### Location Tracking Technologies

Location tracking technologies enable providers and family caregivers to locate older adults who are prone to wandering, such as those with Alzheimer's disease and other

cognitive impairments. These technologies vary by range and accuracy of location due to selected tracking techniques, signal activation methods, and technology support systems.

### Center for Technology and Aging Initiatives

To help improve medication use in older adults, the Center for Technology and Aging launched a Remote Patient Monitoring Initiative in January 2010. This included the Center's Remote Patient Monitoring Diffusion Grants Program. The initiative aims to encourage further use of technologies that:

- Reduce the use of emergency department and hospital services by older adults (60+ years old).
- Enable independent living and the ability to live in the setting of one's choice.
- Lead to improvements in the cost and quality of care.
- Reduce the need for older adults to move to more intensive, higher-cost care settings.
- Reduce the burden on formal and informal caregivers.
- Work in the home, as well as long-term and post-acute care settings.
- Include monitoring devices for chronic conditions, post-acute care, and patient safety monitoring for wandering and falls.

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