Benefits of Technology in Philadelphia PACE Program: A Case Study

The concept of enabling the disabled and elderly to live in the community outside of nursing homes is not new. In fact, the seeds of the idea germinated in the North Beach/Chinatown neighborhoods in San Francisco with the advent of the nation's first Program of All-Inclusive Care for the Elderly (PACE) program. The PACE program began officially in 1990, when those initial San Francisco initiatives and replication programs began to receive Medicare and Medicaid waivers to operate. The PACE program has expanded across the United States, serving elderly and those with chronic disease in both rural and urban areas.

What is new and unique, however, is the role of technology as an enabler. The collaborative PACE and housing initiatives that NewCourtland operates in Philadelphia illustrate how remote monitoring can be a contributing factor in driving down the cost of the program and promoting the independence of residents. Technology and other supportive services in use by NewCourtland have enabled individuals to move out of nursing homes and back into the community without compromising their safety and at a significantly lower cost. In one notable instance, an annual savings of more than $1.8 million was reported by employing remote monitoring technology to enable 33 residents to move from traditional nursing home care to supportive housing. [See Appendix for a list of assumptions used in calculations.]

Background

NewCourtland LIFE in Philadelphia, which is modeled after the nationally recognized Program of All-Inclusive Care for the Elderly (PACE), provides an individualized and holistic approach to providing healthcare and social services to the seniors it serves. These services target a population aged 60 and older that has been assessed as in need of nursing home care. In December 2008, the first of 30 nursing home transition residents began moving into NewCourtland Square as a result of collaboration between the housing organization and NewCourtland LIFE. A transition team was established to manage the 90-day transition, including members of NewCourtland housing as well as the LIFE interdisciplinary team that assessed the clients for their ability to transition without 24-hour caregivers. Each client had a personalized plan that include therapies for maximizing physical functioning, nursing for medication training, financial training to help residents manage their finances, and technology training to teach residents how to use the in-home Healthsense® remote monitoring solution.

Home Care Combined with Technology

Instead of staffing individuals at the client location, the Courtland HT powered by **Healthsense eNeighbor**® system enables regionally located staff to respond in a timely fashion to alerts that are generated either by the client or the system. The overall system includes sensors placed around the home, biometric devices as appropriate, medication dispensing devices and a check-in button in each apartment. If any problem or unwarranted change is detected, a monitoring center contacts the client to check on them. According to Jim Reilly, Director of Courtland HT, "The NewCourtland Square supported service model with housing, LIFE, and technology allows seniors to continue

living in a less expensive, independent, less-resource-intensive environment with a high quality of life."

<div align="center">Benefits</div>

The obvious benefits are that the system saves money – from a state and federal perspective, offering a less-expensive option than a nursing home placement. In addition, the program reduces staffing requirements, using fewer home care hours and freeing up home care workers to do real home care that enhances quality of life. As Reilly noted, "Keeping even one person out of the hospital can pay for all systems for a PACE program for one year. And more important, the individuals we helped were motivated to leave a nursing home and move into the community, making the extra effort to participate in rehab as well as relearn their ADLs." (see Figure 1).

Number of Units/Rooms	Annual Technology Cost	Annual Home Care Cost	Total Annual Cost*	Total Nursing Home Cost	Annual Savings
26	$39,000	$249,600	$288,600	$2,135,250	$1,846,650

Figure 1: Housing with Technology

NewCourtland also provides DOM Care services to individuals requiring a bit more care, in the form of group housing. DOM care is traditionally a two-to three-person domiciliary care home; in NewCourtland's DOM Care Home, up to eight individuals (all of whom were previously in a nursing home or in the community on the verge of nursing home placement) can be supported by a caregiver in the home combined with intermittent morning and evening support. Individuals can be supported by a single caregiver combined with a modified eNeighbor® WiFi wireless solution that includes a wireless nurse pull cord at the bedside and in the bathroom that connects via phone to the onsite

caregiver; bed and motion sensors to detect when clients are getting out of bed; and nighttime hourly alerts prompting the caregiver to physically push check-in buttons located in each bedroom (see Figure 2).

Number of Units/Rooms	Annual Technology Cost	Annual Home Care Cost	Total Annual Cost*	Total Nursing Home Cost	Annual Savings
7	$10,500	$219,500	$229,500	$574.875	$345,375

Figure 2: Domiciliary Care with Technology

One Client's Story – At Home with Family

A LIFE member living in a private home with her adult daughter was continually wandering away from the house at all hours of the night. Although both preferred remaining in the community, the worried daughter asked a social worker to place her mother in a nursing home. After assessment by the LIFE team, they asked the daughter if she would try the eNeighbor® technology to keep her mother safe and out of the more costly nursing home environments. Courtland HT installed a modified version which to date has successfully kept her mother safe, living in the community and with her daughter for the past two years (see Figure 3).

Number of Units/Rooms	Annual Technology Cost	Annual Home Care Cost	Total Annual Cost*	Total Nursing Home Cost	Annual Savings
1	$1,500	$9,600	$11,100	$82,125	$71,025

Figure 3: LIFE Member at Home with Technology

Factors to Consider in Deploying Technology in PACE Programs

It is clear from NewCourtland's success with technology that PACE clients can live more independently and less expensively than in nursing homes. PACE programs that use technology to monitor clients are more likely to reduce the incidence of hospitalization, and use of technology as part of PACE programs can reduce the FTE caregiver staffing requirements. Reilly observed: "PACE programs should view the initiative by thinking about the example of subscription cost of the eNeighbor® system of $125/month versus $6000/month of nursing home expense."

Avoiding the ER, Hospitalization, Pneumonia, and Long Lie Times

Beth Cwiklinski, Center Director at NewCourtland LIFE, described the technology as providing a safety net for members who live alone and are at a high risk of falling. She said, "The sensor system helps us detect changes in behavior pattern over time that could indicate a clinical issue. For example, one of our members was getting up frequently at night instead of his normal pattern of getting up once. Our nurse contacted him and discovered that he had bronchitis turning into pneumonia. She started him on antibiotics and he was able to avoid a visit to the ER and subsequent hospitalization."

In other situations, Cwiklinski noted that the technology has helped identify nutrition issues (discovered by lack of activity in the kitchen), avoid long lie times after a fall (sending staff when no motion is detected), and draw attention to other changes in behavior that could indicate a medical problem. She said, "We are our own health insurer – we must cover risk associated with all members' healthcare needs. It is in our interest to be proactive and manage issues tightly – avoiding ER and hospitalization. The cost per resident of $100/month has paid for itself many times over. This benefits our

members, of course, who stay out of the ER and hospital, and have a greater sense of security, knowing that someone can get to them if they should need help."

The Key to Success – A Tech-enabled Service Plan

NewCourtland's experience over the past two years has demonstrated that PACE participants can live safely in the community with fewer hospitalizations and longer deferral or avoidance of nursing home placement. Said Cwiklinski, "We've learned that technology enables a new and improved care model. If something goes wrong, we can intervene – enabling our staff to respond quickly is reassuring to clients and families. Beyond responding to emergent alerts, we can also detect pattern changes and forward them daily to an inter-disciplinary team so that they can make modifications to the care or service plan."

Cwiklinski 's advice to other programs? "PACE programs should consider the initiative in terms of participant quality of life as well as efficient utilization of resources; the preventive dollars spent on the minor monthly cost of passive monitoring systems and telehealth versus the high cost of hospitalizations or nursing home stays. The key to success is a progressive provider that knows how to use technology to facilitate sustained independence."

Appendix of Assumptions

Number of Units/Rooms	33 LIFE/Pace participants living independently in supportive housing complexes rather than traditional Nursing Homes
Annual Technology Cost	$125/month (per unit/room)
Annual Home Care Cost	Housing ($800/month (per unit)) and Domiciliary Care (30 hrs/day with average rate of $20/hr)
Annual Nursing Home Cost	$225/day