

Fix and Fit to Age in Place

By

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Most of us want to grow old in our own homes, to age in place.

Social determinants of aging. These are features in someone's life, like neighborhoods, existing resources, occupation and income, which shape how an individual (or group) experiences growing older. These social and environmental factors can help create positive, helpful conditions or negative, unhelpful conditions.

We've written about how sidewalk curb cuts, accessible entryways, and walkability can facilitate fuller participation in work and community life for persons with physical and intellectual disabilities; there's also the role that removing policy barriers can play in enriching and "normalizing" the lives of individuals with disabilities.

Now come findings that simple improvements in housing, coupled with modest person-centered supports, can improve the health and daily lives of poor older adults with limitations, enabling them to age in place.

An interdisciplinary team of a registered nurse, an occupational therapist, and a handyman made minor improvements in the houses of poor elders and introduced simple assistive devices, each time focusing on the specific situation of the individual. Five months later, participating older adults had improved their ability to take care of themselves substantially, reducing by almost half the number of their impairments in Activities of Daily Living, and reducing their levels of depression.

Here's how it worked. Sarah Szanton, a nurse practitioner and associate professor of nursing at Johns Hopkins University, led a team at Hopkins (Sarah Szanton, Bruce Leff, Jennifer Wolff, Laken Roberts, & Laura Gitlin) in a project called CAPABLE (Community Aging in Place, Advancing Better Living for Elders), funded 2012-2015 by the Center for Medicare and Medicaid Innovation, focused on improving everyday physical functioning. Szanton has written elsewhere on the effect of poverty on physical functioning, cognitive ability, and mortality. This project's findings are in the September 2016 issue of *Health Affairs*.

The CMS Innovation Center is supporting projects to investigate if high-cost users of the health care system have problems that can be addressed cost effectively in ways other than usage of traditional health care processes, like brick-and-mortar medical centers. Difficulties with Activities of Daily Living (feeding oneself, bathing, dressing, walking, etc.) and Instrumental Activities of Daily Living (shopping, taking medications, doing laundry, etc.) strongly predict use of expensive chronic care services and institutionalization. Yet traditional health care services seldom address these.

CAPABLE is one of several investigations looking into ways to improve everyday functioning and thereby promote aging in place and reduce long-term care costs. Participants in CAPABLE had to be living in a house and could not be cognitively impaired, and be receiving skilled home health care services or have been hospitalized four or more times in the previous year. All were dually eligible for Medicare and Medicaid. Forty-five percent lived alone

The CAPABLE interdisciplinary team comprised an occupational therapist, who made six visits to each participant; a nurse, who made four visits; and a handyman, who labored up to a full day in providing home repairs, installing assistive devices, and making home modifications.

Participants worked with the occupational therapist (OT) and nurse in semi-structured interviews to identify up to three achievable goals with each of these two disciplines. The OT observed the participant's current behavior regarding these goals and identified barriers to achieving them. For instance, with safe bathing, barriers might include a slippery tub, muscle weakness, and lack of hand rails.

The OT created a work order for the handyman prioritized by the participant, with each participant's dwelling having a budget of up to \$1300. The handyman then made, within three weeks, all improvements needed for participants to overcome the barriers; if needed repairs exceeded the budget, the handyman made repairs as were most feasible. Spending on assistive devices and home repairs and modifications ranged from \$72 to \$1,398 for each participant.

The nurse helped the participant identify and prioritize up to three goals related to pain, depression, strength and balance, medication management, or communication with primary care providers.

CAPABLE built in procedures to help participants better face subsequent challenges, employing and testing problem solving strategies that might be useful later on. The nurse communicated with the primary care provider and the participant's family members about identified medical issues. In the next three visits, *"the nurse and participant brainstormed and planned incremental actions to address each of the participant's goals. For example, they might decide to try having the participant use the toilet at specified intervals and changing when the participant took a diuretic, so that he or she was less likely to have to rush to the bathroom at night and risk a fall."*

During the final visit, the nurse reviewed what the participant had found effective and helped him or her to consider how to apply what was learned to future challenges. The nurse also wrote to the primary care provider to summarize the participant's goals and how well he or she had achieved them.

CAPABLE involved 283 participants over a three-year period, with 234 providing complete data. Of these, 83 percent were women and 80 percent were African American. All of them lived at home with or without family members.

Results are impressive. At baseline, participants had difficulty with 3.9 of the 8.0 ADLs. At the end of the five-month CAPABLE program, these difficulties were reduced among 75 percent of

participants. Difficulties in ADLs dropped from an average of 3.9 activities to difficulties in 2.0 activities, a 49 percent improvement in physical functioning.

Difficulties with instrumental ADLs decreased in 65 percent of participants. The average decrease in difficulty was from 4.1 activities to 2.9 activities. Importantly, multivariate model analyses showed that age, race, and symptoms of depression at baseline were not significant predictors of functional improvements. The project itself and its person-centered focus seemed to make the difference.

Depressive symptoms improved in 53 percent of the participants. Home hazards decreased from an average of 3.3 hazards to 1.4 hazards.

Participants benefited equally from CAPABLE whether or not they had been hospitalized in the previous year.

The average cost of delivering the program was \$2,825 per participant. This included all ten clinician visits, mileage, care coordination, supervision, home repair and modification (including parts and labor), and assistive devices, as well as overhead paid to the handyman organization. This is lower than the costs previously reported in the CAPABLE pilot project because experience helped to reduce costs.

So the questions are: does the CAPABLE initiative ultimately save tax payer money by reducing more expensive chronic care and institutional costs? Do the findings reflect the “halo effect” where simply being paid attention to can improve outcomes? Cost benefits may become clearer through applications of CAPABLE in Michigan and Maine. And separately, the CAPABLE team is conducting an on-going NIH-funded randomized controlled study to help find out the role of social interaction. Control subjects will participate in sedentary activities of their choice through visits and time equal to what the CAPABLE participants received but without the focus on structural improvements and person-centered prioritized goals.

If aging in place is the goal, simple targeted improvements to one’s home and ability to function in it may be central.