

## IN BRIEF

**FALLS AMONG OLDER PERSONS AND THE ROLE OF THE HOME:  
AN ANALYSIS OF COST, INCIDENCE, AND POTENTIAL SAVINGS FROM HOME  
MODIFICATION****Introduction**

An estimated 1.8 million falls led to an emergency room visit among Americans age 65 or older in 2000, and falls are the leading cause of death from injuries among older persons. One approach for reducing falls is to modify the home in order to eliminate or abate common hazards for frail persons. This In Brief summarizes the findings of the AARP Public Policy Institute Issue Brief “Falls Among Older Persons and the Role of the Home: An Analysis of Cost, Incidence, and Potential Savings from Home Modification.”<sup>1</sup> The Issue Brief reviews the literature on the effectiveness of home modification programs designed to prevent falls. It also uses sensitivity analysis (an exercise which explores how conclusions change when the initial assumptions are allowed to vary) to explore financial challenges that such programs would need to address if the goal is to reduce the cost of falls. The purpose of the paper is to provide guidance for future research on costs and benefits, and to illustrate the role of home modifications in efforts to reduce the cost of fall injuries.

**Key Findings**

- Among the 34.7 million persons age 65 and older in 2000, there were an estimated 1.8 million falls leading to an emergency room visit.
- The total direct cost of those falls was an estimated \$16.4 billion, with an average direct cost per fall of nearly \$9,400. This includes the medical and long-term care cost of falls that resulted in an emergency room visit, but excludes prescription drugs (due to lack of reliable data). Indirect costs (such as lost wages, quality of life, and informal caregiving) were not part of the empirical analysis, but are also important consequences of fall injuries.
- About 48 percent of costs were paid by Medicare, 16 percent by federal Medicaid funds, 11 percent by state Medicaid funds, and 25 percent from other sources (including private insurance and out-of-pocket payments).

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<sup>1</sup> AARP Public Policy Institute Issue Brief #56, by Andrew Kochera.

- Among older persons, the majority (55 percent) of fall injuries occurred inside the house. An additional 23 percent occurred outside, but near, the house, and 22 percent took place away from the home.
- Approximately 43 percent of indoor and outdoor fall injuries among older persons occurred at floor or ground level (that is, not from a height). Fourteen percent of falls took place on stairs or steps, 11 percent from a curb or sidewalk, and nine percent from a chair, bed or other furniture. Around four percent involved the bathtub, shower or toilet. Locations for 26 percent of the falls were unspecified or “other.”
- Around 51 percent of older households containing at least one person with a physical limitation did not have any type of home modification at all; 23 percent reported one modification, 10 percent reported two modifications, and 12 percent reported three or more. The most common modifications reported were: extra handrails or grab bars (29 percent), wide doors/hallways (10 percent), accessibility features in the bathroom (10 percent), and ramps (9 percent).
- It is difficult to determine from existing research the extent to which home modification leads to fall reduction, the types of home modification that are most effective, and the categories of persons who are most likely to benefit from home modifications. More comprehensive research that includes detailed information on residents and home features, with a large sample size to adequately test the statistical significance of various factors, is clearly warranted.
- Sensitivity analysis demonstrates that small changes to assumptions about incidence and cost of intervention can have a large impact on whether cost savings can be achieved. In addition, the sensitivity analysis illustrates three major issues that a study of the potential savings from a program of fall prevention must consider:
  - 1) *Treatment Group*. Savings can only be achieved if the reduction in the cost of falls for those individuals who experience them exceeds the cost of the program for the larger target population. Any broad preventive program will necessarily serve persons who would not fall even without some intervention. However, because it is not known ahead of time which individuals will fall, everyone in the group incurs the cost of the intervention. Therefore, identifying and targeting a treatment group that has a relatively high incidence of falls becomes important if a program is going to be cost effective.
  - 2) *Intervention Costs*. The study must also consider the cost of the intervention program. The lower the cost of the program, the more likely it is to achieve net savings.
  - 3) *Effectiveness in Reducing Falls*. The third issue to consider is the effectiveness of the program in reducing falls. The more effective the intervention, the more likely it is to generate savings.