

The Role of Primary Care Providers in Managing Falls

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Falls threaten the ability of older adults to live independently in the community. Fortunately, national and state organizations have created tools that allow primary care providers to easily assess fall risk, and small changes in practice patterns can provide patients with the resources necessary to prevent falls, thus helping to reverse a costly, deadly epidemic.

A primary goal of elderly individuals is maintaining their independence—that is, the ability to do as they want without the assistance of another. Function and independent mobility are both important to the creation of an environment of independence and self-control or self-management. However, falling is one of the geriatric syndromes that threaten the loss of independence. Among elderly individuals living in the community, falls occur frequently; approximately one-third of such individuals fall at least once in the course of a year [1, 2].

Although most falls do not cause injury, 20%–30% of falls among adults aged 65 years or older cause moderate to severe injuries, including fractures, soft tissue injuries, and head injuries. In 2011 fall-related injuries in older adults resulted in more than 689,000 hospitalizations [2]. Falls can even be fatal; indeed, falls are the leading cause of death from injury for all ages, and the mortality rate from falls has risen over the past decade [3].

Morbidity from falls is a significant threat to independence among the elderly. Even if falls do not result in a serious injury, they may cause “post-fall syndrome,” which is characterized by dependence, loss of autonomy, and depression; loss of confidence in ambulation or family members’ anxiety about the potential for injury may also limit mobility. For those with the most restricted mobility, nursing home placement may be necessary. In fact, 40% of all nursing home admissions are related to falls [4].

The Centers for Disease Control and Prevention (CDC) estimated that direct medical costs of injuries from falls among adults aged 65 years or older totaled \$30 billion in 2010 [2]. This figure does not include indirect costs, such as lost time from work for caregivers who are needed when disability increases, nor does it include the social cost of reduced quality of life. As the population ages, both the number of falls and the costs of treating fall-related injuries are likely to increase. The CDC has projected that by 2020

the annual direct and indirect medical costs of falls will total \$67 billion (in 2012 dollars) [2, 5]. For these reasons, implementing effective fall prevention strategies is a public health priority of the World Health Organization, which held a conference on fall prevention in 2007 [6].

North Carolina is not immune to the nationwide epidemic of falls among elderly individuals. In 2011 unintentional falls among North Carolinians aged 65 years or older resulted in more than 17,000 hospitalizations [7]. Falls are the state’s third highest cause of death from unintentional injury, and they are the leading cause of death from unintentional injury among North Carolinians aged 65 years or older [7]. Between 2003 and 2012, the death rate following a fall increased 58.6% for all ages [7]. As the state’s population ages, this rate is likely to continue to rise, because individuals 85 years of age or older are 4 times more likely to die as a result of an injurious fall than are those aged 75–84 years [7]. In 2011 the median cost of hospitalization for injuries resulting from falls among all age groups in North Carolina was \$30,000 [7]. If preventive measures are not taken in the immediate future, the number of hospitalizations resulting from fall-related injuries is projected to double by 2030 [7].

Causes of Falls

Falls have both intrinsic and extrinsic causes. Risk factors for falls include gait, balance, and mobility issues; medications; postural hypotension; visual impairment; improper footwear; environmental hazards; cognitive impairment; and other acute or chronic medical conditions, such as osteoporosis or urinary incontinence. Risk factors are multiplicative. In a 1988 study [1], the incidence of falls was 8% among people with no risk factors and 78% among those with 4 or more risk factors.

Often patients are not forthcoming about falls or about functional decline that may put them at risk for falls. Therefore it is important for health care professionals to specifically inquire about falls. The primary care office is the

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Home-Based Primary Care: An Innovative Practice Model For Reducing Costs and Improving Quality of Care

Alan Kronhaus

“Better care at lower cost” has been the mantra of the health care industry for decades. The case for delivering high-value care has gained greater cachet over the past decade [1, 2], with added impetus from the Patient Protection and Affordable Care Act of 2010 and the ensuing creation of the Center for Medicare and Medicaid Innovation [3]. But the transformation to higher-value care has been hampered by a paucity of practice models offering a suitable operational framework for such care and by the absence of payment arrangements that create compelling incentives for clinicians to practice parsimoniously [4].

Doctors Making Housecalls (DMH) is a private medical group that has pioneered the innovative practice model formally known as home-based primary care. Encompassing the greater Triangle, Triad, and Charlotte areas, this growing practice specializes in caring for frail, elderly patients with complex needs—the 5% of Medicare beneficiaries who account for more than 50% of Medicare expenditures. DMH’s staff of 45 full-time clinicians includes primary care physicians, physician assistants, and nurse practitioners who make roughly 65,000 home visits a year; each clinician cares for a panel of 150 to 200 patients. Twenty percent of the practice’s patients live in private residences, and 80% live in assisted living communities where the practice provides onsite care to residents who choose DMH clinicians as their primary care providers.

DMH currently serves over 115 assisted living communities throughout the state. Its rapid growth within such facilities has occurred in part because comprehensive onsite medical care improves the health of residents and allows them to age in place with as much dignity and independence as possible; as such, it postpones or eliminates the need for transfer to a nursing home. For facilities, onsite care reduces the cost of transporting residents to physician offices, and it eliminates the need for facility personnel to get orders and approvals from offsite clinicians who may be unfamiliar with the facility’s needs.

A growing body of evidence supports the contention that DMH’s practice model significantly reduces the cost of care while improving quality of care and patient satisfaction [5, 6]. Those claims are being further tested in a nationwide project of the Centers for Medicare & Medicaid Services (CMS) called the Independence at Home Medical Practice Demonstration Program [7]. Established by section 3024 of the Affordable Care Act [8], the Independence at Home program also tests a novel compensation arrangement that combines fee-for-service payments with a shared savings bonus. For a participating medical

practice to earn a bonus, the total cost of care for patients enrolled in the demonstration program must be at least 5% less than the expected cost of care under usual circumstances. The practice must also satisfy numerous quality measures specified by the demonstration program.

The 18 medical practices participating in the demonstration program, including DMH, share a cost reduction strategy that starts by visiting patients where they live to eliminate the formidable barriers to access that keep frail elderly patients from connecting with their primary care providers. Given better access, clinicians can see patients often and in depth, actively manage multiple comorbid conditions, and provide care that is proactive and prevention-oriented rather than reactive and crisis-driven. By keeping patients on an even keel, minimizing crises, and reducing the risks and high costs associated with unnecessary emergency department visits and hospitalizations, the home visit strategy has the potential to save money. It may also minimize the number of untoward clinical events that befall frail elderly patients during a hospitalization or a sojourn in the emergency department.

The benefits of shifting the locus of care out of institutions and into the patient’s home extend beyond eliminating barriers to access. Clinicians can obtain better information from patients who are more relaxed and forthcoming by virtue of being seen in their own environment. They can more accurately assess the patient’s compliance with medication regimens—by tracking down medication vials, if necessary. Environmental hazards can be identified and rectified, and coordination of care becomes easier when all members of the multidisciplinary health care team can convene “at the bedside.” Home visits also reduce the burden on family caregivers by eliminating the need to transport the patient somewhere to receive physician and ancillary services, which often requires taking time off from work and long waits with loved ones who cannot be left alone in outpatient venues of care.

DMH clinicians provide comprehensive, ongoing care in the patient’s home, including all laboratory and imaging services that may be required, with the exception of computed tomography and magnetic resonance imaging. The practice has no vested interest in ancillary services, which are provided on a contract basis by firms with whom the practice has vendor agreements. Those services include plain-film radiographs, ultrasonography, electrocardiography, and cardiac impedance studies, as well as phlebotomy services and specimen transport. DMH also coordinates services across all venues and levels of care. For example, our clinicians can visit patients within 48 hours after an

emergency department visit or hospital discharge, which enables the clinician to reconcile medication regimens and intervene at the earliest signs of a change in the patient's condition. This strategy has the potential to dramatically reduce the number of readmissions within 30 days of hospital discharge.

There is also a strong business case for the new job role created by the home-based primary care practice model—often referred to as a “residentialist.” On a fee-for-service basis, our clinicians earn in the top 5% of primary care providers in similar communities, and our practice is more profitable overall than the typical primary care office practice, primarily because we have learned to use cutting-edge technology to operate efficiently and effectively, with about 20% less overhead. In addition, DMH physicians document their clinical encounters in a comprehensive way that supports billing for the highest level of service appropriate to the encounter. We have also demonstrated the ability to earn significant additional income from CMS's Medicare Shared Savings Program, which bolsters the total compensation of DMH's clinical staff and should allow us to attract the additional providers needed to deploy the service on a much larger scale.

Home-based primary care could do more than merely “bend the cost curve”—it could break its back [9], even while improving quality of care and patient satisfaction. **NCMJ**

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ideal setting for evaluating fall risk and for intervening when appropriate. Fall risk management is therefore a Healthcare Effectiveness Data and Information Set (HEDIS) performance measure for primary care providers. Measuring performance on this measure for 2012, the National Committee for Quality Assurance found that practitioners discussed the risk of falls with only about one-third of the Medicare enrollees for whom such a discussion would have been appropriate; however, among those with whom falls were discussed, more than half received some sort of fall risk intervention [8].

When to Evaluate Risk

A clinical practice guideline for prevention of falls in older persons has been developed by the American Geriatrics Society (AGS) and the British Geriatrics Society (BGS); it suggests that all older adults should be questioned at least yearly about falls, frequency of falling, and difficulties with gait or balance [9]. In addition, fall risk should be addressed following every hospitalization and transition of care. A study by Mahoney and colleagues [10] found that, among individuals aged 65 years or older, falls occurred at rate of 8 falls per 1,000 person-days during the first 2 weeks following a hospitalization, compared with a rate of 1.7 falls per

1,000 person-days 3 months later. A study of people who had fallen while in the hospital [11] found that, in the first month after they returned to their homes, their fall rate was 25.4 falls per 1,000 person-days. Considering that up to 1% of falls in elderly individuals result in a hip fracture [12] and that 20%–30% of falls result in other moderate to severe injuries [2], falls have the potential to increase the 30-day rehospitalization rate tremendously.

Practice-Based Fall Risk Assessment

Evidence-based guidelines for assessing the risk of falls are available from a number of sources [9, 13, 14], but screening rates remain low. Barriers to use of risk-assessment guidelines include not only the sheer number of guidelines available but also physicians' lack of knowledge, lack of self-efficacy in performing screening, reliance on peers rather than medical literature to inform practice, and concern that patients will not follow recommendations. In a study that looked at self-reported practices and barriers [15], physicians stated that adding time to a patient encounter in order to perform more screening tests was not an option.

To address low rates of fall prevention screening, the CDC's National Center for Injury Prevention and Control created the STEADI (Stopping Elderly Accidents, Deaths,

and Injuries) Tool Kit for Health Care Providers [16]; this tool kit can be accessed at <http://www.cdc.gov/homeandrecreationalafety/Falls/steady/index.html>. This online program for use with older adult patients who are at risk of falling (or have fallen) provides information and tools for assessing and addressing the fall risk of older patients. The tool kit is based on an algorithm for fall risk assessment and intervention [17] that can be incorporated into medical practice on a daily basis. While in the waiting room, patients complete a questionnaire that asks about falls, unsteadiness, lack of strength, and incontinence, all of which are risk factors for falls. Patients bring this questionnaire into the office visit, and their score guides the physician in selecting the appropriate workup. The algorithm, which is based on the guidelines of the AGS and the BGS, suggests that the physician first ask whether the patient has fallen in the past year, feels unsteady when standing or walking, or worries about falls. If patients answer yes, then the physician should proceed to gait and balance testing, medication review, vision evaluation, evaluation for orthostatic hypotension, and home evaluation for safety optimization. Additional components of the tool kit are posters, patient brochures, and other publications that assist in the comprehensive evaluation and treatment of falls and fall risk. Physicians must do more than simply ask about falls; referrals for fall prevention programs or for gait or balance retraining are also important, as are interventions that preserve patient function.

Proven Interventions

Exercise that focuses on strength and balance is a mainstay of function preservation and fall prevention. The CDC has compiled descriptions of exercise programs that have been shown to be effective in preventing falls [18]. Tai chi classes have been proven to increase balance, and participants have been shown to have fewer falls and fall injuries. One randomized controlled trial found that participants who took tai chi classes 3 times per week for 6 months had a 55% lower risk of multiple falls compared with a control group who did stretching exercises [19].

Another exercise option that has been tested extensively in 5 trials [18] is the Otago Exercise Program—a program that combines walking and an individually tailored regimen of muscle strengthening and balance-retraining exercises of increasing difficulty. Overall, the fall rate of participants in this program was 35% lower than that of those who did not take part in the program. Participants aged 80 years or older who had fallen in the previous year benefited most [18].

The National Institute on Aging has also developed an entire exercise and physical activity campaign (Go4Life) to assist senior citizens in adding activity to their daily life [20]. The exercises focus on endurance, strength, flexibility, and balance.

Finally, an evidence-based, community-based group exercise program called Matter of Balance is designed to reduce the fear of falling and to increase activity levels among older

adults. Research has shown that participants in the program improved significantly in their confidence in their ability to perform everyday activities without falling; their perceived ability to manage the risk of falling; and their level of exercise, level of social activity, and number of falls [21].

Moving From Assessment to Intervention

Because of time constraints and physician knowledge deficits, it is often necessary for an entire team of health care professionals to collaborate to reduce the risk of falls. For patients who have fallen or are at high risk for falls and who must make an extreme effort to leave home or are homebound, home health is the best way to improve gait and balance, to accurately review medications, and to evaluate the home environment. The number of home health visits is finite, based on patient needs and payer restrictions. To maintain the benefits achieved during a course of home health, outpatient, or clinic-based therapy, the patient must continue working to decrease his or her fall risk by increasing balance and strength, as well as taking other steps that may be required.

Patients therefore need to be connected to ongoing community-based programs. Finding these programs may seem difficult, but resources that consolidate information about community programs are readily available. For example, each county in North Carolina is covered by an Area Agency on Aging. Created through the Older Americans Act of 1965, these agencies serve as federally funded local units that provide comprehensive services for older adults [22]. Because these agencies have a federal mandate to provide health promotion programs, their staff can provide training for any primary care practice regarding programs in the local community that have been proven to work. In addition, the North Carolina Division of Public Health has formed the North Carolina Falls Prevention Coalition [23], which has local units across the state. The purpose of these units is to bring together researchers, planners, health care providers, housing specialists, aging services providers, and others to reduce the number of falls and fall-related injuries among North Carolinians. One outcome of this effort has been the development of regional fall prevention coalitions that primary care offices can access to obtain information on community programs designed to decrease the incidence of falls [23].

With the help of these organizations and the STEADI tool kit, practices can reinforce the need to be proactive about fall risk and fall prevention by making educational materials available to patients and family members throughout their offices. With 2 hours of training or less, a primary care practice can create the infrastructure needed to share the responsibility for fall prevention with patients [24].

Conclusion

Maintaining functional independence is a goal of community-dwelling older adults, but falls can be a deterrent to that

achieving that goal. Mitigating the national and statewide epidemic of falls is also a focus of the CDC, the National Institute on Aging, and the North Carolina Division of Public Health. Primary care practices need to not only develop an infrastructure for fall risk assessment and intervention but also connect patients to local community resources that can provide evidence-based interventions that promote lifelong exercise and preserve function. **NCMJ**

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