

Step by Step: Integrating Evidence-Based Fall-Risk Management Into Senior Centers

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Purpose: Our purpose in this project was to conceptualize and implement evidence-based fall-prevention programming into senior centers. We present challenges to this process and strategies to overcome them. **Design and Methods:** We carried out a dissemination project in nine diverse senior centers in Connecticut. Participants included investigators from the Connecticut Collaboration for Fall Prevention (CCFP), senior center administrators, and trained staff interventionists implementing a program of fall prevention based on the Yale Frailty and Injury Cooperative Studies of Intervention Trials (known as the Yale FICSIT). Using CCFP materials that were based on the stages of change, senior center staff developed methods to integrate fall-prevention programming into their centers. We extracted implementation challenges, and the strategies that senior center staff developed to overcome them, from the minutes of monthly work-group meetings.

Monthly counts of individual assessments were also a source of data. **Results:** Challenges included staffing and the delineation of authority, structural issues, engaging senior center membership, cultural issues, and the modification of existing practices. Each senior center devised site-specific methods to overcome these challenges when CCFP investigators convened work-group meetings. We developed creative strategies to inform senior center membership about fall prevention, and in the first 18 months, 4% of members scheduled individual assessments. **Implications:** The challenges of integrating evidence-based fall-prevention programming into existing senior center services can be negotiated by collaboration among senior center administrators, health providers, the center membership, and researchers. This experience suggests that senior centers may be important venues to reach older adults with fall-prevention programming.

Key Words: Behavioral change, Dissemination of research into practice, Injury prevention

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Numerous studies document falling as a common and preventable source of morbidity. International guidelines recommend that older individuals be screened for fall risks (American Geriatric Society, British Geriatrics Society, and American Academy of Orthopaedic Surgeons Panel on Fall Prevention, 2001), yet only 34% of older adults receive fall-risk assessment and intervention (Wenger et al., 2003). The most successful fall-prevention interventions are multifactorial

(Chang et al., 2004; Gillespie et al., 2003; Tinetti, 2003), requiring the expertise of several disciplines as well as engaging older adults to modify their habits. These factors combine to make fall-prevention services particularly difficult to provide within the constraints of clinical care. Common barriers to providing preventive services such as fall prevention include lack of time during office visits, poor reimbursement, inadequate awareness and counseling skills of providers, and patient unwillingness to report problems or follow through with recommendations (Baker et al., 2005; Chou, Tinetti, King, Irwin, & Fortinsky, 2006; Yarnell, Pollak, Ostbye, Krause, & Michener, 2003).

We previously reported on a successful multifactorial fall-prevention intervention (Tinetti et al., 1994). A large-scale, multiyear effort, the Connecticut Collaboration for Fall Prevention (CCFP), is underway to disseminate those strategies into clinical practice (Baker et al., 2005). Having encountered multiple challenges in embedding prevention activities into clinical care, we identified senior centers as potential sites for reaching community-dwelling older adults. By definition, senior centers provide health and educational services, and since 1947 they have been providing essential services for older adults in the United States. Currently there are approximately 15,000 senior centers, which serve 10 million older Americans annually (National Council on Aging, 2006).

In this 3-year project, entitled Step by Step, we engaged a convenience sample of senior centers to re-examine the health services they offered. Project partners included the North Central Area Agency on Aging (NCAAA), the CCFP based in the Yale Program on Aging, and the Center on Aging at the University of Connecticut. The goal of Step by Step was to embed evidence-based fall-prevention programming in senior centers by enhancing knowledge and behaviors of staff and members, and by enhancing relationships between the senior centers and relevant local clinicians. Our specific objectives were to develop, implement, and evaluate a fall-prevention program, based on the Yale Frailty and Injury Cooperative Studies of Intervention Trials (known as the Yale FICSIT; see Tinetti et al., 1994). In this article we present the challenges that we encountered during development and implementation, as well as the collaboratively derived strategies to overcome them.

Methods

Setting and Participants

The NCAAA invited a convenience sample of 3 senior centers with active administrators and diverse memberships to participate in the project. All centers were located in towns with a relatively high older adult population, and all agreed to participate. After 1 year of developing and pilot testing the project, we issued invitations to the other 25 senior centers in the NCAAA region; 8 expressed interest, and 6 of the 8 joined the project (2 decided not to participate as a result of limited staffing and attendance).

Among the final group of nine participating senior centers, six served predominantly White suburban communities, two served urban Hispanic communities, and one served an urban African American community. A survey of the administrators revealed a variety of funding mechanisms and membership definitions. Four senior centers were town funded and responsible for all older residents of the town; three defined membership on the basis of user fees. The two Hispanic senior centers had faith-based funding with membership primarily defined by language. The estimated total population served by all nine senior centers was 11,700 older adults, with service to an average of 1,200 older adults a day. By state standards the senior centers were small, medium, and large, with estimated daily attendance ranging from 20 to 325 older adults.

Staffing

Eight of the nine participating senior centers had existing nurse-run screening clinics. In three of these senior centers, administrators replaced existing visiting nurses with colleagues deemed to be more suited to project activities. A visiting nurse was recruited to start health programming in the ninth site, and staff members at all sites received specific instruction to become the project interventionists. Nurses experienced in providing community-based care and who were near-age peers with the senior center population readily adapted to the interventionist role and were well received. We negotiated consulting agreements with individuals, visiting nurses, or public health agencies for the interventionists to allocate up to 4 hours per week per senior center to organize and implement fall-prevention activities. Seven senior centers had existing exercise classes. We recruited staff members to start programs in the other two centers, which were the Hispanic centers.

To ensure fidelity to the fall-prevention protocols, we had each interventionist receive one-on-one classroom and clinical training and mentoring from the CCFP investigators who had conducted Yale FICSIT. We conducted and recorded the individual assessments, based on Yale FICSIT protocols, by using a scripted tool linking examination techniques and results to interventions using CCFP patient education materials. Initial classroom and clinical training for these interventionists was accomplished in 4 hours.

Recognizing the collaborative nature of clinical practice (Timmermans & Mauck, 2005), we formed administrative and clinical work groups. The administrative work group typically used electronic communications for NCAAA staff to guide the CCFP investigators regarding administrative and political issues. The clinical work group, comprising CCFP investigators and the interventionists from each senior center, met monthly to share ideas, develop methods, standardize our approach, identify barriers, and develop solutions. Between meetings there was ongoing e-mail contact to maintain fidelity to our assessment and intervention protocols. Collaborative relationships developed between CCFP investigators with expertise in fall prevention, the senior center interventionists,

and NCAA staff with expertise regarding the local resources. These relationships were fostered with an understanding that everyone was more likely to adopt and sustain programming that they had participated in developing (Wagner, Austin, & Von Korff, 1996).

Conceptual Basis

The strategy for engaging senior center staff and older adults in fall prevention followed a series of plan-do-study-act cycles (Berwick, 1998). We convened focus groups with older adults in each senior center and then with the staff to plan how fall prevention could be embedded into programming in each center. We collectively developed, tested, evaluated, and revised our approach by meeting with senior centers staff at monthly work sessions to identify challenges and test new strategies.

We communicated fall-prevention information to senior center staff and members by using CCFP materials that were based on the stages of change, which are widely accepted techniques to stimulate behavioral change by matching the intervention to the recipient's stage of readiness to act (Prochaska, 1991). As described in the intervention that follows, we provided messages and services at each senior center to reach members in precontemplation about their risks of falling, and to move them toward identifying their personal risks and taking action to reduce them.

Fall-Prevention Intervention

We based our intervention on Yale FICSIT (Tinetti et al., 1994) and the subsequent clinical trials (Gillespie et al., 2003), focusing on the following fall-risk factors: balance, gait, and vision impairments; postural hypotension; multiple medication use; and home hazards. To reach those in precontemplation regarding their fall risk, CCFP staff developed consciousness-raising educational pieces consistent with Yale FICSIT for posters, print media, closed-circuit television, group classes, and screenings at health fairs, thereby reaching each senior center's entire membership with consistent, evidence-based messages regarding the epidemiology of falls.

Senior center staff developed mechanisms for those individuals who were contemplating or ready to take action to schedule individual appointments for a CCFP-scripted assessment. These individual assessments taught the members what their personal fall-risk factors were, followed by detailed instruction regarding how to personally reduce that risk and suggestions for reporting concerns to their primary care providers. Each assessment included use of detailed CCFP teaching materials on how to reduce risks. Interventionists encouraged the maintenance of behavior changes by means of invitations for return visits for reassessment to quantify accomplishments and potentially receive instruction to increase the level of exercise. All interventions were provided at no cost to the participants. Each assessment and reassessment appointment was scheduled for between 1 and 1.5 hours.

Data Collection

The Institutional Review Board at Yale University School of Medicine approved all procedures. We had the minutes of each work-group meeting recorded and transcribed. Two CCFP investigators independently reviewed the minutes to extract key themes regarding challenges and the strategies that senior center staff developed to overcome those challenges. We resolved discrepancies between the two reviews by critique from the interventionists themselves. We tracked the number of individual assessments from counts that each interventionist reported to the CCFP each month.

Results

To reach the 11,700 members, raise consciousness about falling, and stimulate those persons in precontemplation to begin contemplating their personal risks, the senior center directors kept an ongoing stream of fall-prevention information in center-based and media messages. Those individuals who had participated in the focus groups were among the first to schedule assessments. A tabulation of the interventionists' monthly reports revealed that, in the first 18 months after all nine senior centers were fully operational, 457 members (4% of the total membership) scheduled individual fall-risk reduction assessments and counseling. Of these, we invited the first 375 to a 4-month reassessment of progress; 323 (86%) agreed, whereas 21 (6%) refused. The remaining 31 (8%) individuals were unable to return due to: personal or spousal illness (18); death (8); nursing home admission (3); or moved away (2). When asked, most participants reported learning about the assessments through senior center newsletters or fliers (63%) or senior center fairs or presentations (34%).

The directors of all senior centers indicated the intention to continue the programming; of these, five are integrating fall-risk assessments into preexisting services. Two small senior centers with preexisting health services still lack sufficient membership to justify staffing assessments, but both are continuing the exercise programming. Services have been interrupted in two senior centers as a result of staff turnover and focus on a capital campaign for a new facility that will include space for fall-risk assessments and exercising. The consensus among directors was that fall-prevention programming was most sustainable by means of integration into ongoing services.

Implementation Challenges and Strategies to Overcome Them

The evidence-based approach to fall-risk assessments and intervention was well defined and tested by CCFP investigators attempting to implement it in senior centers. However, a review of the monthly work-group meeting transcripts revealed several implementation challenges as described in the following

paragraphs, followed by the strategies that were developed to address them.

Tailoring the Intervention to Senior Centers

Experienced senior center staff cautioned that most members, believing they were not at risk, were unlikely to attend specific fall-prevention activities. They explained that members want to have fun and do not appreciate sober reminders that aging can be accompanied by failing health. A member's candid comment captured this sentiment: "They try to keep us healthy here but they just about drive us crazy in the process—every day there is something more to worry about."

CCFP investigators reviewed the literature but were unable to locate uniform standards for senior center health services. Staff described spending a significant amount of time planning events, and, other than seasonal themes and autumn flu clinics, most described scheduling programs according to the availability of presenters. Therefore educational events were provided in a somewhat random order, possibly contributing to the members' sense that every day there was another worrisome issue.

Strategy.—Mindful of these caveats, we developed an overall approach to senior center health programming to present messages that would address a core set of risk factors that contribute to a number of adverse outcomes, including falls (Tinetti, Inouye, Gill, & Doucette, 1995). For example, interventions to manage diabetes, heart disease, arthritis, obesity, and falls share exercise as recommended intervention (Fiatarone Singh, 2002). On the advice of a nurse practitioner in practice at one senior center, we developed a calendar to present simple prevention messages consistent with relevant monthly National Health Observances, customized to highlight each senior center's on-site services and illustrated with photographs of that senior center's members engaged in risk-reduction behaviors. The calendar was a checklist for members and helped staff organize a predictable yearly cycle of comprehensive health programming. CCFP investigators developed teaching materials to correspond to each monthly theme.

Delineation of Authority and Responsibility

Initially, it seemed logical that project activities within a senior center become the responsibility of the nurses and exercise leaders responsible for other health programs. However, these individuals were typically part-time staff who lacked the presence and authority within the senior center to be readily available to members, track daily activities, impact overall programming, and provide timely follow-up. Differing views regarding the delineation of responsibility and authority between interventionists and senior center administrators complicated efforts to modify or initiate programming.

Strategy.—NCAAA staff members were instrumental in streamlining communication between organizations in order to efficiently accomplish our mutual goals. As we added new senior centers, we were careful, up front, to secure administrative support and define the essential role of nonclinical senior center staff. Change requires increased effort, and staff members in senior centers are already overextended, so CCFP investigators teamed up with senior center staff to support the interventionists. For example, CCFP investigators developed newsletter items to relieve senior center staff from that writing so they could take on other responsibilities such as scheduling assessment appointments.

Structural Issues

Although many senior centers had made a visible commitment to health and exercise programming, some lacked the space, and privacy needed to conduct evaluations or to engage seniors in exercise. Computing capabilities were typically not available in senior center health offices, which impeded the interventionists' ability to access Web-based materials or communicate by e-mail. Given the geographic dispersion of collaborators in this project, this absence created a challenge.

Strategy.—Engaging the administrators early on helped us to develop strategies to reallocate resources to integrate and sustain project activities. As a way to check older adults' postural blood pressure, senior centers lacking needed facilities acquired massage tables that were dismantled when not in use. Some interventionists conducted late afternoon assessments to have space and privacy. Fortunately, most of the interventionists had home computers that they were willing to use for project activities. For those who did not have this capacity, the process remained cumbersome, and costly.

We found that senior center members used health programming when it was made conveniently available. Centers that had full-time health staff, such as an exercise trainer, demonstrated a distinct advantage in implementing new programming over those centers with part-time staff, because daily presence added program credibility and visibility. Full-time staff had the flexibility to work around a member's schedule rather than expecting the reverse. These factors combined to give fall-prevention efforts ongoing momentum in well-staffed senior centers. In one senior center, the director became an exercise leader and was quite successful in embedding exercise into the daily routine of a previously sedentary group.

Engaging Senior Center Membership

Because many senior center members have not fallen, they do not perceive themselves to be at risk; it is challenging to engage them in fall-prevention activities. The readiness to hear fall-prevention messages varies by individual, and evolves over time,

necessitating ongoing programming to be available when at-risk individuals are ready to use it.

Strategy.—To initiate the program, center administrators identified member opinion leaders at the senior center who would participate in focus groups with the project evaluator, CCFP investigators, and interventionists. We used these focus groups to introduce the project to senior center members and to glean site-specific implementation advice that was invaluable because strategies that were useful in one senior center were sometimes viewed as inappropriate in another. Getting buy-in from opinion leaders not only influenced the general membership but also provided support and advice to the interventionists who were trying to effect organizational change (Kotter, 1996).

Many senior centers held kick-off events including three key elements for success: fun, free, and food. The events included speakers, door prizes (e.g., nightlights, pedometers, grocery gift cards), and coupons for free fall assessments. Attractive offerings included a fire chief demonstrating how to get up after a fall; a state legislator explaining how a fall changed her life; Ms. Senior Connecticut (a senior center exercise leader) describing how exercise improves daily life; and a belly dancer who engaged the group in dancing for exercise. Media coverage of these events reached a large audience and stimulated new networking between the senior centers, local clinicians, and municipal and state officials. Many were working on fall prevention from different perspectives and were unaware of opportunities to dovetail their work with others to create a uniform message for the public.

As individual interest in fall prevention evolves over time, we developed, prominently posted, and repeated messages for each level of readiness throughout the senior centers. Center staff creatively integrated fall-prevention messages about individual risk factors such as hydration, safer use of medications, and exercise into every possible venue, such as closed-circuit television, bulletin boards, restroom posters, newspaper articles, banners, and senior center staff and community provider presentations. In addition, we developed a series of Voices of Experience pieces, worded as advice from someone who had fallen, to provide brief fall-prevention tips that would easily fit into monthly newsletters. Staff in the senior center identified and referred at-risk individuals for fall-risk assessments, and we developed systems to follow up with any member known to have fallen or been ill.

Older adults who had fall-risk assessments gave positive reviews to the senior center directors regarding the comprehensive evaluation and personalized, uninterrupted session with a clinician. To capitalize on word-of-mouth marketing, we gave participants who had completed an evaluation “free fall assessment” coupons for their friends. Older adults repeatedly acknowledged they were previously unaware that falls are so common, unaware of their risks, and appreciative of the practical, inexpensive suggestions to reduce those risks. Interventionists noted that, over the course

of the project, an unspoken taboo seemed to lift. Members began to more openly discuss their falls and present for assessment.

In the interest of supporting the directors’ efforts to attract new members, CCFP investigators updated and delivered informational materials to local health providers and fitness centers; as a result, some physicians, visiting nurses, and pharmacists referred patients to the senior center for fall-risk assessments or to participate in programs after home or outpatient therapy ended. To foster local relationships, CCFP investigators used senior center facilities to host meetings of home care and outpatient rehabilitation providers, which included touring the facilities to refresh their images of available programming. As community awareness grew, the interventionists also tested programming to reach homebound older adults and individuals in assisted living.

Cultural Issues

To communicate effectively, we found it necessary to reformat the fall-prevention message to accommodate differences in language, literacy, imagery, customs, disabilities, and health beliefs regarding prevention, ageism, exercise, and clinician–patient relationships.

Strategy.—To reach our diverse population, we translated a number of materials into Spanish and used Web-based materials available in Polish and Russian. We produced large-font educational materials for those with vision impairments. We recruited Spanish-speaking interventionists to conduct assessments, intervene, and provide classes in the Hispanic senior centers. We learned that it was important to have bilingual staff who also understood cultural values regarding health and aging. CCFP investigators responded to the interventionists’ advice to be sure that educational materials were illustrated with images consistent with the culture of each senior center.

Modifying Existing Practices

Because the goals of senior centers include the provision of health services, we revisited some common practices. Examples of these practices include sub-optimal exercise programs; refreshments or meals containing excessive portion sizes, calories, sugar, salt, or fat; programming that encouraged participants to sit for prolonged periods of time; and health programming that repeatedly screened for the same risks or cued people to be screened more often than medically recommended. In many instances, we found that limited resources, including the participants’ time, were not being used to the best advantage.

In spite of numerous recommendations that older adults exercise to maintain flexibility, strength, endurance, and balance, in most senior centers only a small proportion of members participate in exercise classes,

while the remainder assess classes as being more vigorous than they could tolerate.

Strategy.—CCFP investigators convened a meeting of experienced exercise leaders for advice regarding how to attract more senior center members to exercise. They suggested that senior centers should repeatedly link exercise to daily function rather than future benefits, and that senior centers should offer one class that incorporates a range of movements to accommodate a wide range of physical ability, rather than several “leveled” classes. The advantages of this approach were that it was simple to administer; gathered a larger group and thereby created more momentum; allowed the leader to function as a peer versus an authority figure; stimulated group participation; and encouraged progression rather than plateauing at a comfortable level. It was difficult to dislodge members who were set in familiar, but ineffective, classes.

It became obvious that when exercise equipment and staff were readily available, older adults made use of them. Hence the challenge was partially about the process of engaging members, and also about the process of engaging administrators in efforts to restructure the facilities and staffing. Throughout the 3 years of the project, CCFP investigators met with senior center staff to review existing health services and identify new programming opportunities.

Changing the routines required a concerted joint effort of administration and health providers within each senior center to peacefully change established routines. For example, blood pressure levels can now be reliably self-assessed, thereby freeing clinician time for counseling or other assessments. Some senior centers have paramedics or firefighters, rather than nurses, conduct blood pressure screenings.

Local health care providers were a source of up-to-date information and were often willing to market their programs by providing education or consultation to senior centers. For example, physical therapists were willing to review and modify general exercise recommendations for the senior center population and even helped orient staff to safe use and progression with exercise equipment.

Role modeling was an important mechanism for changing behavior on several levels. The CCFP investigators mentored the interventionists, who developed new speaking, assessment, and intervention skills. They, in turn, served as role models to the senior center membership by modeling desired behaviors and acting as peer-mentors. Because senior center administrators are not clinicians, they generally appreciated the suggestions of interventionists and CCFP investigators regarding evidence-based health programming. To improve balance, we had member volunteers of varying ability videotaped demonstrating the CCFP balance exercises. These tapes were played just prior to serving lunch, when all members could use their chairs for support. Seeing their peers modeling the exercises heightened interest and participation. When the group determined that it was ready to progress, a video was produced demonstrating the next level of difficulty.

Discussion

This experience suggests that senior center programming can be refreshed when center administrators and health staff can draw on the health care expertise in their communities or academic settings. When senior centers offered up-to-date programming, opinion leaders from the senior center membership responded by helping plan implementation, participating in group and individual assessments, and successfully encouraging their peers to do likewise. In the first 18 months after all nine centers were fully operational, 457 individuals received assessment and intervention, contradicting predictions that senior center members are healthy and not interested in fall-prevention services. The interventionists found that older adults, like many clinicians, lack awareness of the evidence that falls are very common and many can be prevented. The CCFP investigators have several years of firsthand experience regarding how difficult it is for clinicians—and potentially older adults—to focus on fall prevention in the context of care to manage disease. In our area we are confident that these senior centers are the only place older adults can secure a complete multifactorial fall-risk assessment accompanied by individualized instructions and age-appropriate educational materials. On the basis of the successes of these first nine senior centers, and aware of the significant impact of falls on the state budget, the Department of Social Services provided funding to initiate the program in a 10th senior center.

We demonstrated that, with administrative support, it is feasible to conduct comprehensive, multifactorial fall-risk assessments and interventions in senior centers. Members of the senior centers made use of fall-prevention services and responded positively to the one-on-one counseling that they received, delivered by credible senior center-based health care providers. Research is underway to evaluate whether and to what extent there were reductions in risk factors and the incidence of falls among participants. Meanwhile, given the time constraints and disease-management focus of clinicians in health care settings, this experience suggests that senior centers have the potential to be an important venue for reaching community-living older adults with fall-prevention programming.

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The Online Clearinghouse for Internships and Fellowships in Aging

ExperiencInAging.com is a new web service created by AGHE, and made possible by funding from the Retirement Research Foundation. It is an online clearinghouse of internships and fellowships in the field of aging. The goals of the website are to

- create a centralized resource to assist students and recent college graduates in locating, comparing, and applying for aging-related internships and fellowships;
- assist academic institutions in placing students in aging-related internships and fellowships;
- provide a single, national source of qualified students to aging-related organizations; and
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