



Effective Public Health Practice Project Summary Statement

October 2006

This is a summary statement written to condense the work of the authors of a systematic review. The reference for the full review is below. The intent of this summary is to provide an overview of the findings and implications of the full review. For more information on individual studies included in the review, please see the review itself.

Reference for Review: McClure, R., Turner, C., Peel, N., Spinks, A., Eakin, E., Hughes, K. (2005). **Population-based interventions for the prevention of fall-related injuries in older people.** *The Cochrane Database of Systematic Reviews 2005, Issue 1.* Art. No.: CD004441. DOI: 10.1002/14651858.CD004441.pub2.

Issue

The Mandatory Health Programs and Services Guidelines on chronic disease prevention for Ontario include objectives to “reduce the rate of fall-related injuries in the elderly (aged 65+ years) that lead to hospitalization or death by 20 per cent by the year 2010” (Ontario Ministry of Health and Long-Term Care, 1997).

In 2003-2004, 24,057 elderly Ontarians were hospitalized because of falls; 1,859 of these patients died in hospital (Canadian Institute for Health Information, 2006). Over 390 million dollars in direct costs resulted from treating falls among the elderly in Ontario in 1996 (SmartRisk, 1999). Much of this cost was related to hip fractures, which accounted for 40% of hospitalizations resulting from falls. In addition to injuries leading to hospitalization, a large number of injuries result in visits to the emergency department, are treated outside of hospital or limit activity in the elderly in the short-term (Sahai et al., 2005). In addition to pain, suffering and disability, having a fall is associated with an increased probability of entry into care (Wilkins, 1999) and restriction of activity because of fear of falling again (Fletcher et al., 2004).

A systematic review conducted for the Ministers responsible for seniors across Canada concluded that there was evidence to support the use of some forms of exercise and home modification as effective strategies for reducing falls in the elderly. Education as part of multi-faceted risk-reduction programs, clinical assessment by nurses or physicians and withdrawal of psychotropic drugs may also be helpful, but more evidence is required (Scott et al., 2001). This document also identified a need for research to address the delivery of fall-prevention programs and for data on the impact of these programs on fall-related injury rates. The review by McClure et al. summarized below addresses these questions, to some extent, by evaluating the effectiveness of population-based interventions and examining their impact on fall-related injuries rather than on falls in general.

Review Content Summary

This systematic review examined the evidence on the effectiveness of coordinated, community-wide, multi-strategy initiatives for reducing fall-related injuries requiring medical treatment in people aged 65 or older. Evidence was available from five comparative cohort studies conducted in Scandinavia (4 studies) and Australia (1 study). All five studies observed a decrease in fall-related injuries in intervention communities, but the magnitude of these benefits relative to control rates is not clear. While the evidence available is encouraging, randomized multi-centre trials are needed to establish effectiveness.

Comments on this Review's Methodology

In addition to contacting experts, the reviewers searched health and psychosocial databases, key journals, reference lists and trial registers to locate prospective community trials with contemporaneous controls. Eligibility criteria for selecting studies for the review were well described. Only studies with well-matched controls and where the unit of analysis was the entire community were included. Study quality was assessed independently by two reviewers using four criteria from a published checklist: baseline measurements, characteristics of the control site, protection against contamination between sites, and reliability of outcome measures. Because of important differences among studies, data were not pooled. Outcome measures varied from study to study and included hospitalizations, fall-related fractures, all fractures and all injuries. Study reports included little detailed information about the specific activities undertaken in the intervention communities.

None of the studies used random allocation to intervention or control, all studied a single intervention community or area, only two described the control community as matched to the intervention community on sociodemographic variables, baseline measurements were not available for one study, and there was insufficient information to determine if there was adequate protection against contamination or reliable outcome assessment for several studies.

Evidence and Implications for Practice & Policy

Evidence points *ARE NOT* weighted or ranked according to strength

What's the evidence?	Implications for practice and policy:
<ul style="list-style-type: none"> > In one study, there was a 20% decrease in fall-related hospitalizations (relative to a control community) following a four-year intervention that used community education, policy development and engagement of health professionals to target knowledge, attitudes, behaviours, medication use, footwear, home hazard reduction and other risk factors (relative risk, 0.80; 95% confidence interval, 0.76 to 0.64). > Another study failed to find a significant effect on fall-related injuries one year after implementing a set of safety initiatives that employed mass media, education, home visits, community walking programs and 	<ul style="list-style-type: none"> > Population-based programs show promise for preventing fall-related injuries among the elderly. > When designing programs, practitioners and policy makers should consider long-term interventions (i.e., longer than 12 months). > Randomized trials should be conducted to provide high-quality evidence.

What's the evidence?	Implications for practice and policy:
improvements to lighting, roads and walkways (odds ratio, 0.89; 95% CI, 0.77 to 1.03).	
> In three additional studies, rates of fall-related fractures were reduced in the intervention communities by 6% to 15%, but differences between intervention and control groups were either not statistically significant or not reported.	> Data on fracture rates from all five studies should be obtained from investigators and pooled to estimate the overall effect of population-based programs on fracture rates.
> Three studies used the WHO Safe Communities model, which does not specify program components. None of these studies detected significant benefits.	> Investigators, practitioners and policy makers should focus on interventions that are well described and have shown some benefit in studies.
General Implications: The evidence is encouraging but incomplete. Well-defined long-term population-based programs for preventing fall-related injuries in the elderly should be implemented as part of well-designed randomized controlled trials.	

Cost Benefit or Cost-Effectiveness Information: Not included in the review.

Related Documents from the Effective Public Health Practice Project (EPHPP)

The EPHPP has produced Summary Statements on three related reviews.

Hill-Westmoreland et al. (2002) published a systematic review of randomized and quasi-randomized trials of fall prevention programs in the elderly. Meta-analysis of data from 12 trials detected a small (4%), but statistically significant, reduction in falls overall and in a subgroup of community-based studies. Interventions included exercise (alone or with risk modification), comprehensive risk assessment, and community education.

The systematic review with meta-analysis by Gillespie et al. (2003) included 47 randomized trials involving elderly people living in the community. Individually targeted exercise or physical therapy interventions, assessment and modification of safety hazards in the home, and multifactorial risk factor screening/intervention programs were all found to be effective at preventing falls.

As part of a review on modification of the home environment to reduce injuries in various age groups, Lyons et al. (2003) listed three RCTs that detected statistically significant reductions in falls among older people with a history of falls or at high risk for falls.

References Used to Outline Issue

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Other References

- Gillespie, L.D., Gillespie, W.J., Robertson, M.C., Lamb, S.E., Cumming, R.G., Rowe, B.H. (2003). Interventions for preventing falls in elderly people. *The Cochrane Database of Systematic Reviews* 2003 (4). Art. No.: CD000340. DOI: 10.1002/14651858.CD000340.
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