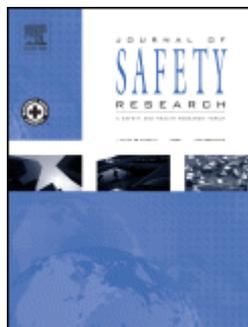


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Dean Fixsen, Vicky Scott, Karen Blase, Sandra Naoom, Lori Wagar. *When evidence is not enough : the challenge of implementing fall prevention strategies.* Pages 419-422.

Problem: As the evidence-based movement has advanced in public health, changes in public health practices have lagged far behind creating a science to service gap. For example, science has produced effective falls prevention interventions for older adults. It now is clearer WHAT needs to be done to reduce injury and death related to falls. However, issues have arisen regarding HOW to assure the full and effective uses of evidence-based programs in practice. Summary: Lessons learned from the science and practice of implementation provide guidance for how to change practices by developing new competencies, how to change organizations to support evidence-based practices, and how to change public health systems to align system functions with desired practices. The combination of practice, organization, and system change likely will produce the public health benefits that are the promise of evidence-based falls prevention interventions. Impact on public health: For the past several decades, the emphasis has been solely on evidence-based interventions. Public health will benefit from giving equal emphasis to evidence-based implementation. Impact on Industry: We now have over two decades of research on the effectiveness of fall prevention interventions. The quality of this research is judged by a number of credible international organizations, including the Cochrane Collaboration (<http://www.cochrane.org/>), the American and British Geriatrics Societies, and the Campbell Collaboration (<http://www.campbellcollaboration.org/>). These international bodies were formed to ponder and answer questions related to the quality and relevance of research. These developments are a good first step. However, while knowing WHAT to do (an evidence-based intervention) is critical, we also need to know HOW to effectively implement the evidence. Implementation, organization change, and system change methods produce the conditions that allow and support the full and effective use of evidence-based interventions. It is time to focus on utilization of implementation knowledge in public health. Without this focus the vast amount on new evidence being generated on the prevention of falls and related injuries among older adults will have little impact on their health and safety.

- **Keywords:** Public health policy; Fall prevention; Implementation; Practitioner competency; Organization change

Jacqueline M. Tetroe, Ian D. Graham, Vicky Scott. *What does it mean to transform knowledge into action in falls prevention research?* :

perspectives from the Canadian Institutes of Health Research. Pages 423-426.

Introduction: The concept of knowledge translation as defined by the Canadian Institutes for Health Research and the Knowledge to Action Cycle, described by Graham et al (Graham et al., 2006), are used to make a case for the importance of using a conceptual model to describe moving knowledge into action in the area of falls prevention. Method: There is a large body of research in the area of falls prevention. It would seem that in many areas it is clear what is needed to prevent falls and further syntheses can determine where the evidence is sufficiently robust to warrant its implementation as well as where the gaps are that require further basic research. Conclusion: The phases of the action cycle highlight seven areas that should be paid attention to in order to maximize chances of successful implementation.

- **Keywords:** Falls prevention; Knowledge translation; Conceptual models; Synthesis; Implementation

Rita K. Noonan, David A. Sleet, Judy A. Stevens. Closing the Gap : a Research Agenda to Accelerate the Adoption and Effective Use of Proven Older Adult Fall Prevention Strategies. Pages 427-430.

Introduction: To make an impact on the public's health, evidence-based interventions must be disseminated broadly, supported by training and technical assistance, adopted widely, and implemented as designed. Many effective older adult fall prevention interventions have been identified, but too few have gained wide community acceptance and little is known about the best ways to encourage their broader use. Therefore, as in many other fields, fall prevention suffers from a wide gap between scientific discoveries and their everyday use. Method: This article articulates the key activities embedded in Step 4 of the public health model—specifically translation and dissemination to ensure widespread adoption and use—in order to illuminate critical research needs in older adult fall prevention. Conclusions: These needs, if addressed, will help close the gap between research and practice.

- **Keywords:** fall prevention; dissemination; adoption; implementation; capacity building

Terry P. Haines, Nicholas G. Waldron. Translation of falls prevention knowledge into action in hospitals: What should be translated and how should it be done? Pages 431-442.

Introduction: Falls prevention evidence has changed and evolved over time with positive and negative studies revealing that a “one-size fits all” approach is not the solution. Care must be taken to critically appraise the evidence and the potential applicability of that evidence to the specific hospital setting. Method: A narrative account of the evolution of research evidence in this field is first presented. How this evidence should be applied in clinical practice is challenging, with a lack of translational evidence for the hospital setting we draw on broader theory of translating knowledge to action. Conclusions: The journey should begin with formation of a management and engagement committee. A review of existing practices and the difference between existing practice and evidence-based practice should be undertaken to identify the “evidence-practice gap.” Engagement with staff is recommended to inform a plan for practice change. Plans for resourcing, targeting, and evaluating these strategies should also be undertaken. Impact on Industry: This paper will assist hospitals to identify and implement evidence based falls prevention strategies leading to an improvement in patient safety.

- **Keywords:** Falls; Hospital; Injury; Prevention

Victoria Goodwin, Tracey Jones-Hughes, Jo Thompson-Coon, Kate Boddy, Ken Stein. *Implementing the evidence for preventing falls among community-dwelling older people : a systematic review. Pages 443-451.*

Problem and objective: The translation of the evidence-base for preventing falls among community-dwelling older people into practice has been limited. This study systematically reviewed and synthesised the effectiveness of methods to implement falls prevention programmes with this population. Methods: Articles published between 1980 and May 2010 that evaluated the effects of an implementation strategy. No design restrictions were imposed. A narrative synthesis was undertaken. Results: 15 studies were identified. Interventions that involved the active training of healthcare professionals improved implementation. The evidence around changing the way people who fall are managed within primary care practices, and, layperson, peer or community delivered models was mixed. Impact on industry: Translating the evidence-base into practice involves changing the attitudes and behaviours of older people, healthcare professionals and organisations. However, there is a need for further evaluation on how this can be best achieved.

- **Keywords:** Falls prevention; Implementation; Older adults; Evidence-based practice; Systematic review

Mark Speechley. *Knowledge translation for falls prevention : the view from Canada. Pages 453-459.*

Researchers have now conclusively demonstrated that many falls in older adults can be prevented, and that the interventions can produce cost-savings. Because most falls are multifactorial, falls prevention interventions can involve several approaches delivered by numerous health care professions in multiple settings. These complexities may make knowledge translation (KT) more challenging than with simpler interventions for specific diseases. After describing these complexities and reviewing the evidence base for falls prevention, this paper examines the few published demonstrations of KT in falls prevention. It continues with a description of the visibility and accessibility of falls prevention Clinical Practice Guidelines (CPGs) on the websites of four key Canadian health professional associations: nurses, occupational therapists, physical therapists, and physicians. The paper concludes with a review of published studies of KT in falls prevention in Canadian health care settings, including research on care or treatment gaps in falls prevention and the uptake of CPGs. Impact on Industry: Those in the long term care and hospital industries may use the findings when considering fall prevention programs. This paper does not cover occupational falls, and participants in the referenced studies will be past conventional retirement age.

- **Keywords:** Knowledge translation; Unintentional falls; Prevention; Older adults

Sebastiana Zimba Kalula, Vicky Scott, Andrea Dowd, Kathleen Brodrick. *Falls and fall prevention programmes in developing countries : environmental scan for the adaptation of the Canadian Falls prevention curriculum for developing countries. Pages 461-472.*

Problem: Falls in older persons in developing countries are poorly understood, and falls prevention and health promotion programmes for this population are largely lacking. Methods: A systematic review was carried out of relevant literature on falls and prevention programmes, and falls prevention education, and a scan undertaken of health promotion programmes for older persons in a representative country - South Africa. Results: Studies on the risk and prevalence of falls are largely retrospective and hospital-based, with varied methodology, including study period, sampling method and sample size. Falls prevalence is based largely on self-reports in studies on general trauma in all age groups. Falls incidence varies from 10.1% to 54%. No reports could be traced on

sustained falls prevention or health promotion programmes. Conclusion: Scant research has been conducted and little preventive education offered on falls in older persons. Adaptation of the Canadian Falls Prevention Curriculum for developing countries will help to fill gaps in knowledge and practice. Impact on industry: With rapid increase in the populations of older persons in developing countries, research on age related disorders such as falls is required to guide policy and management of falls.

- **Keywords:** Falls; fall prevention; health promotion; developing countries; older persons

Brian E. Maki, Katherine M. Sibley, Susan B. Jaglal, Mark Bayley, Dina Brooks, Geoff R. Fernie, Alastair J. Flint, William Gage, Barbara A. Liu, William E. McIlroy, Alex Mihailidis, Stephen D. Perry, Milos R. Popovic, Jay Pratt, John L. Zettel. *Reducing fall risk by improving balance control : development, evaluation and knowledge-translation of new approaches. Pages 473-485.*

Problem: Falling is a leading cause of serious injury, loss of independence, and nursing-home admission in older adults. Impaired balance control is a major contributing factor. Methods: Results from our balance-control studies have been applied in the development of new and improved interventions and assessment tools. Initiatives to facilitate knowledge-translation of this work include setting up a new network of balance clinics, a research-user network and a research-user advisory board. Results: Our findings support the efficacy of the developed balance-training methods, balance-enhancing footwear, neuro-prosthesis, walker design, handrail-cueing system, and handrail-design recommendations in improving specific aspects of balance control. Impact on Knowledge Users: A new balance-assessment tool has been implemented in the first new balance clinic, a new balance-enhancing insole is available through pharmacies and other commercial outlets, and handrail design recommendations have been incorporated into 10 Canadian and American building codes. Work in progress is expected to have further impact.

- **Keywords:** Balance training; Falls prevention; Footwear; Handrails; Mobility aids

Wendy L. Watson, Yang Li, Rebecca J. Mitchell. *Projections of hospitalised fall-related injury in NSW, Australia : impacts on the hospital and aged care sectors. Pages 487-492.*

Projections of the number, rate and cost of fall-related hospitalised injuries for individuals aged 65 years and older in New South Wales (NSW), Australia were estimated to 2051 for two scenarios: (1) demographic change only using 2008 admission rates; and (2) modelled change using negative binominal regression taking into account current trends in admission rates. Based on demographic change alone, the number and cost of fall injury hospitalisations among older people is expected to increase almost three-fold by 2051. Transfers to permanent residential aged care will also increase 3.2 fold. However, if the fall-related hospitalisation rate sustains its current trend, these increases are projected to be more than ten-fold by 2051. Even with demographic change alone, there will be a significant impact on the resources required to care for older people suffering a fall injury hospitalisation over the next forty years in NSW. The impact on the hospital and aged care sectors will be considerable unless significant improvements occur in the prevention and treatment of fall-related injury in older people.

- **Keywords:** Falls; Injury; Older persons; Projections; Cost of injury

Laurence Z. Rubenstein, Rebecca Vivrette, Judith O. Harker, Judy A. Stevens, B. Josea Kramer. *Validating an evidence-based, self-rated fall risk questionnaire (FRQ) for older adults. Pages 493-499.*

Background: Falls are a common, serious, and often unrecognized problem facing older adults. The objective of this study was to provide an initial clinical and statistical validation for a public health strategy of fall risk self-assessment by older adults using a Fall Risk Questionnaire (FRQ). Methods: Adults age 65 + (n = 40) were recruited at a Los Angeles Veterans Affairs (VA) medical facility and at a local assisted living facility. Participants completed the FRQ self-assessment and results were compared to a "gold standard" of a clinical evaluation of risks using the American/British Geriatrics Society guidelines to assess independent predictors of falls: history of previous falls, fear of falling, gait/balance, muscle weakness, incontinence, sensation and proprioception, depression, vision, and medications. For the comparison, we used an iterative statistical approach, weighing items based on relative risk. Results: There was strong agreement between the FRQ and clinical evaluation (kappa = .875, p < .0001). Individual item kappa values ranged from .305-.832. After dropping one FRQ item (vision risk) because of inadequate agreement with the clinical evaluation (kappa = .139, p = .321), the final FRQ had good concurrent validity. Conclusions: The FRQ goes beyond existing screening tools in that it is based on both evidence and clinical acceptability and has been initially validated with clinical examination data. A larger validation with longitudinal follow-up should determine the actual strength of the FRQ in predicting future falls.

- **Keywords:** Falls; Fall prevention; Geriatrics; Risk assessment

Vicky Scott, Elaine Gallagher, Anne Higginson, Sarah Metcalfe, Fahra Rajabali. *Evaluation of an evidence-based education program for health Professional : The Canadian Falls Prevention Curriculum© (CFPC). Pages 501-507.*

Introduction: A staged, mixed methods approach was applied to the development and evaluation of an evidence-based education program for health care professionals and community leaders on how to design, implement and evaluate a fall prevention program. Stages included pre-development, development, pilot testing and impact on practice. The goal of the evaluation was to determine if the Canadian Falls Prevention Curriculum met the needs of the target audience and had an impact on learning and practice. Methods: Methods included a needs assessment, systematic reviews, pre-post tests of learning, follow-up surveys and interviews, and descriptive reports of stakeholder involvement. The needs assessment and systematic review of existing programs indicated that there was a demand for a comprehensive, evidence-based curriculum on fall prevention and that no similar curricula existed. Pre-post test findings showed significant increases in learning and follow-up surveys showed a positive impact on practice. Impact on industry: Evidence shows that the most effective fall prevention efforts are those that address the multifactorial nature of fall risk, with proven interventions provided by trained clinicians. The Canadian Falls Prevention Curriculum provides evidence-based training for clinicians and community leaders using a public health approach to fall prevention that includes instruction on how to define the problem, assess the risk, examine best practices, implement the program, and conduct evaluation of the program's effectiveness.

- **Keywords:** Education; Curriculum; Evaluation; Fall prevention; Health care providers

Tiffany E. Shubert, Mary Altpeter, Jan Busby-Whitehead. *Using the RE-AIM Framework to translate a research-based falls prevention intervention into a community-based program : Lessons Learned. Pages 509-516.*

Problem: Exercise-based research interventions demonstrate reduced risk and rates of falls for community dwelling older adults; however, little is known about effective mechanisms for the translation, implementation, and maintenance of these interventions in community settings. Method: The RE-AIM framework was used to assess the translatability of an effective exercise-based research intervention in a community setting. Questions included: Reach — Would the target population attend? Effectiveness — What was the adherence and compliance to the program? Were there individual improvements in falls risk factors? Adoption: Would staff at the center adopt the program and offer it past the funding period? Implementation — What adaptations, including optimal frequency and duration, should be made to meet the community needs, still adhere to core elements and achieve similar outcomes? Maintenance — Would the program be sustained by our community partners? Discussion: The process of translating a controlled research intervention targeting older adults at risk of falls into a community setting was challenging. Licensed professionals developed the infrastructure to safely and effectively deliver the program. The end product was highly appealing program to our target audience, resulted in improved outcomes and was successfully adopted and maintained by the community partner. Summary: Partnerships between community and healthcare providers are key to successful implementation of falls prevention interventions. Lessons learned from this experience can be applied to the translation of future exercise-based falls prevention interventions.

- **Keywords:** Falls prevention; Translational research; Aging; Community-based; Balance

Stephen R. Lord, Catherine Sherrington, Ian D. Cameron, Jacqueline C.T. Close. *Implementing falls prevention research into policy and practice in Australia: Past, present and future. Pages 517-520.*

Introduction: Falls in older Australians are a significant public health issue with one in three older people falling one or more times each year. Method: Many fall prevention randomized controlled trials have been conducted in Australia as well as across the world. Results: The findings of these studies now constitute a substantial evidence base that can provide direction for health and lifestyle interventions for preventing falls in older people. This research evidence has contributed to health policy in Australia to some extent, but is yet to be widely implemented into practice. This opinion piece overviews previous policy initiatives and describes a new Partnership research program funded by the Australian National Health and Medical Research Council (NHMRC), which seeks to further influence health policy and address the ongoing research-practice gap.

- **Keywords:** Accidental falls; Aged; Fall prevention; Implementation research; Knowledge translation

Bonita Lynn Beattie. *The National Falls Free™ Initiative, working collaboratively to affect change. Pages 521-523.*

Introduction: Since 2004 the National Council on Aging (NCOA) has been working in collaboration with a growing number of national, state, and local organizations through the Falls Free© Initiative to address the growing public health issue of falls and fall-related injuries among older adults. Through collaborative leadership, evidence-based interventions, practical lifestyle adjustments, and community partnerships we are working to reduce the number of older adult falls. Impact on industry: The many activities of the national and state coalitions have brought recognition to the issue of fall prevention, education, and training to providers and greater investment in programs and services resulting in tremendous momentum and community activism. While we have yet to realize an impact on rates of falls, this strategic investment in building the infrastructure needed to affect change is the first step toward reducing the growing number of falls among older adults.

- **Keywords:** Fall Prevention; Coalitions; Collaborative leadership; Evidence-Based Programs; National Action Plan

Anne MacLaurin, Heather McConnell. *Utilizing quality improvement methods to prevent falls and injury from falls: Enhancing resident safety in long-term care.* Pages 525-535.

Introduction: Internationally, the growing evidence related to preventable adverse events within healthcare settings has resulted in the creation of numerous patient safety and quality improvement initiatives. In Canada, Safer Healthcare Now!, a national patient safety initiative of the Canadian Patient Safety Institute, and the Registered Nurses' Association of Ontario, the professional association representing registered nurses in Ontario, have partnered to combine quality improvement expertise with evidence-based practice expertise to accelerate improvement in the area of falls prevention and injury reduction. The synergistic relationship between Safer Healthcare Now! and the Registered Nurses' Association of Ontario has resulted in the evolution of the Safer Healthcare Now! national Falls Prevention intervention. The ultimate goal of the Falls Prevention intervention is to improve care by translating "what we know" into "what we do," by supporting quality improvement teams to make changes at the local level to enhance the patient experience. Method: This article provides an overview of Safer Healthcare Now! as a national patient safety initiative, and highlights the results of a National Collaborative on Falls Prevention as a knowledge translation strategy utilized within the long-term care setting. A description of expanding supports for knowledge translation will also be provided.

- **Keywords:** falls reduction; injury prevention; knowledge translation; resident safety; quality improvement; collaborative; long-term care

Nancy C. Edwards. *Preventing falls among seniors : the way forward.* Pages 537-541.

There is a growing body of research about the etiology and prevention of falls. However, the persistently high incidence of falls among seniors calls for renewed efforts to develop, test, implement, and scale-up fall prevention strategies for older adults. This paper considers advances in the field and describes three priority areas for generating research and translating knowledge on fall prevention. Clinical practice guidelines, systems change approaches and environmental risk factors are discussed. Recommendations include transcending our health sector view of the fall prevention problem, supporting comparative research on system-oriented approaches to fall prevention, and examining ways to sustain and scale-up fall prevention efforts.

- **Keywords:** Elderly falls; Seniors; Built environment; Intersectoral action; Clinical practice guidelines; Population health