

Evaluation of a health service delivery intervention to promote falls prevention in older people across the care continuum

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Abstract

Rationale, aims and objectives The incidence of falls and fall-related injuries in older age is predicted to increase concomitantly with global population ageing, representing a serious challenge to health care systems. In spite of the availability of policy and practice guidelines for the prevention of falls and fall-related injuries, a considerable gap remains between best practice and current health service delivery. This paper describes the method and results of the implementation and evaluation of a state-wide workforce enhancement strategy to promote the uptake of evidence-based falls prevention activities for older people.

Methods The project was undertaken in Queensland, Australia in 2008 across the community, acute and residential aged care sectors. Six Falls Safety Officers (FSOs) were appointed to implement a 1-year pilot of strategies aimed at enhancing workforce capacity to deliver a coordinated approach to falls prevention across the care continuum. The project was independently evaluated for process, impact and outcome. Both quantitative and qualitative data were extracted from records maintained by the FSOs for the evaluation and additional data were obtained from interviews with key stakeholders.

Results Considerable progress was achieved towards the project's objectives, including the wide dissemination of information and resources, as well as the establishment of working groups to continue falls prevention planning and implementation. Barriers and facilitators to the project's implementation were identified.

Conclusion The formal evaluation provides evidence for the development of a cross-continuum service delivery model for implementing coordinated state-wide falls prevention strategies for the prevention of falls in older people.

Introduction

With global trends in population ageing, many countries are developing and implementing healthy ageing policies to minimize disability and increase quality of life in later years [1]. A priority area for the promotion of health in ageing is the prevention of falls and fall-related injuries, given the substantial medical and economic impact of falls together with their high incidence in older age groups [2]. Falls are a leading cause of serious injury and disability among older people, with approximately one in three people aged 65 and over falling annually. The frequency of falls increases with age and frailty level [3]. Falls also result in functional decline, loss of independence, reduced quality of life, longer hospital stays, as well as death [3].

If current trends continue, the incidence of falls and fall-related injuries will increase concomitantly with population ageing, representing a serious challenge to health care systems in the near future [4].

A number of policy documents support the development of national plans for falls prevention among older people [5–7]. For example, the *National Service Framework for Older People* [7] set out a model for the integration of service provision for falls and bone health. In Australia, the *National Falls Prevention for Older People Plan: 2004 Onwards* [6] provided a strategic framework for coordinated action across the continuum of care. The plan was endorsed by the Australian Health Ministers' Advisory Council in July 2005 and adopted by state health departments, including Queensland Health.

Based on increasing evidence of the effectiveness of falls prevention strategies, guidelines have been developed for the prevention of falls [8,9] and fall-related injuries, such as hip fracture [10]. In Australia, national guidelines for the prevention of falls in older people in acute and residential care settings were released in 2005 [11]. Queensland Health, recognizing the gap in updated guidelines for the community, commissioned the *Queensland Stay On Your Feet® Good Practice Community Guidelines: Preventing falls, harm from falls and promoting healthy active ageing in older Queenslanders* [12].

In spite of the availability of policy and practice guidelines, there is a considerable gap between best practice and current health service delivery. Audits of clinical practice, nationally and internationally, have generally found poor compliance with evidence-based strategies for falls and fall-related injury prevention [13–16], although there have been recent successes in the USA [17–19]. The translation of research evidence into practice, however, is difficult and there are considerable challenges to including best practice falls prevention strategies into health service delivery [20–22]. While there is substantial trial-based evidence of some falls prevention measures, there is limited research evidence regarding the most effective approaches to changing health care practices, and the evaluation of system-wide falls prevention programmes is crucial for improving the translation of this evidence into practice [23].

This paper aims to address some of these evidence gaps, by describing the method and results of both the implementation and evaluation of a pilot project to build capacity to deliver integrated and sustainable evidence-based falls prevention activities for older people across the health continuum. The project was a workforce enhancement strategy and involved the appointment of six Falls Safety Officers (FSOs) across the state of Queensland, Australia. Their role was to support and coordinate efforts to improve the implementation of falls prevention activities for older people across the community, acute and residential care sectors. It was undertaken by the Queensland Department of Health in 2008 and independently evaluated by researchers at The University of Queensland.

For international readers, Queensland is the second largest Australian state in terms of area and covers over 1.7 million square kilometres (approximately seven times the area of the UK). It is the third most populous state with an estimated population of 4.3 million in 2008, with 12.3% of the population aged 65 and over [24]. More than half the population reside in the south-eastern corner while the majority of the remainder live in smaller regional areas along the Queensland coast and a minority live in rural and remote areas of the state's interior. Queensland Health provides public health services for all Queenslanders including community and hospital-based services as well as residential aged care. At the time this project commenced, Queensland Health was divided into three Area Health Services (AHSs; Northern, Central, Southern) which were further sub-divided into 20 Health Service Districts (HSDs).

Method

The Falls Safety Officer implementation pilot

The project was a trial of a workforce enhancement strategy at an AHS level within Queensland. The FSO project involved the

appointment of six FSOs – one for public hospitals and residential aged care facilities (H/RAC) and one for the community sector – in each of the three AHSs. The role of FSOs was to support and coordinate the implementation of evidence-based falls prevention practice, in particular the National Falls Prevention Guidelines for Australian Hospitals and Residential Aged Care Facilities [11] and the 'Queensland Stay on Your Feet®' Community Guidelines [12] and toolkit. These resources are available on the Queensland Health website (<http://www.health.qld.gov.au/stayonyourfeet>).

The project was to be implemented in 12 HSDs (four in each of the three AHSs), identified as priority areas using population ageing projections and hospital falls morbidity data, including hip fractures. Results of the project were to be used to inform the development of a cross-continuum service delivery model evidenced by a consistent, coordinated, evidence-based approach to falls prevention for older persons across the health continuum at HSD, AHS and state-wide levels. The *cross-continuum falls prevention model* was defined as:

The coordinated approach to the delivery of falls prevention programmes through communication, coordination and partnerships between all sectors from the wider community, primary health care, acute, residential aged care facilities and rehabilitation sectors.

The key strategies outlined in the project plan used by the FSOs included:

- 1 The identification of key stakeholders from the community, public hospitals and residential aged care sectors within each of the priority HSDs for the purposes of undertaking a stocktake of current falls prevention activities.
 - 2 Inviting key stakeholders from across the sectors to a District Planning Day. The format for a HSD planning day involved both the community and H/RAC FSO having concurrent educational sessions in which good practice guidelines were presented and current falls prevention activities and gaps in service provision further identified. The gap analysis was to inform the development of actions plans for each sector, from which a cross-continuum action plan was developed, based on the priorities of each sector.
 - 3 The establishment and/or maintenance/enhancement of HSD falls working groups (or equivalent) to oversee the ongoing implementation of HSD falls prevention action plans.
- The project plan is illustrated in Fig. 1.

Evaluation of the FSO pilot project

Key aims of the evaluation of the pilot project were:

- 1 to identify and assess the extent to which FSOs contributed towards the development of an integrated service delivery model within HSDs, AHSs and across the State for the prevention of falls in older people across the health continuum encompassing community, acute-care and residential sectors;
- 2 to investigate and assess the extent to which FSOs assisted HSDs and other key stakeholders to implement falls prevention action, as supported by relevant State and National documents, and
- 3 to make recommendations regarding the ongoing role of FSOs within AHSs, particularly with regard to the sustainability of falls prevention implementation.

Both qualitative and quantitative data were collected for process, impact and outcome evaluation.

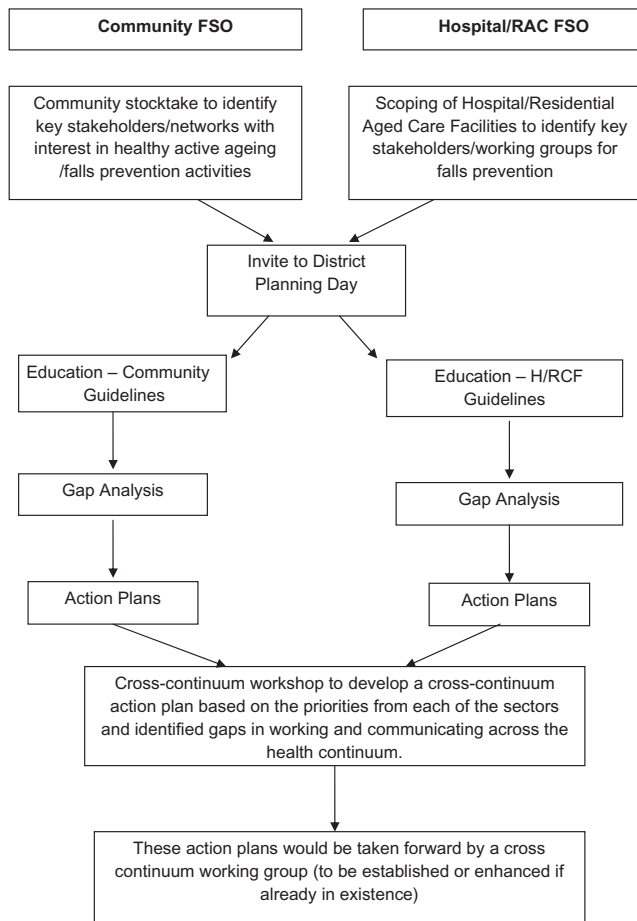


Figure 1 Falls Safety Officer (FSO) project plan.

Process evaluation

Process evaluation measured the following Key Performance Indicators (KPIs), which had been outlined in the project plan:

- 1 number and range of stakeholders engaged;
- 2 number of district planning days held;
- 3 percentage of Queensland Health facilities provided with the opportunity for relevant staff/falls working groups to receive workforce skill enhancement/training.

Impact evaluation

The impact of the project was measured by the following KPIs:

- 1 development of integrated falls prevention action plans across the service continuum appropriate for each HSD;
- 2 establishment and/or maintenance/enhancement of HSD falls prevention working groups (or equivalent).

Although it had also originally been intended to evaluate the extent to which actions plans conformed to, and built upon best practice principles, this was not undertaken because action plans remained in the development stage at the project's conclusion.

Outcome evaluation

The outcome of the FSO Pilot project was evidenced by: development of a consistent, coordinated, evidence-based approach to falls prevention for older persons across the health continuum at HSD, AHS and state-wide levels.

Measures

Daily activity logs

Process logs were required to be maintained by the FSOs recording daily activities using the Queensland Health electronic project activity logging system. Daily activities were evaluated for process measures of stakeholder engagement, resources disseminated and other activities such as administration, travel, preparation and planning. Facilitators and barriers were noted under these activity headings.

Monthly status reports

The FSOs completed monthly status reports in which details of the month's activities and progress achieved towards KPIs and outcomes were recorded. Issues identified in these reports were made available to the evaluation team to inform the process and impact evaluation.

Falls planning days reports

The evaluation team was provided with details of invitees/attendees, agendas/session plans and material presented from the planning days as well as copies of the evaluation questionnaires completed by attendees for the purpose of programme evaluation.

Key stakeholder interviews

Interviews with a cross-section of key stakeholders were conducted by the evaluation team at the project's commencement to assess the baseline level of community capacity to implement falls prevention activities for older people within each HSD. Follow-up interviews were conducted at the end of the project to determine whether capacity had been developed or had changed over the lifetime of the project within their local area. The interviews were semi-structured and were based on the Community Capacity Index [25]. This index measures capacity across four key domains including network partnerships (the relationships between groups and organizations within a community or network), knowledge transfer (the use and transfer of knowledge between the groups and organizations within a community or network), problem-solving ability (the ability to use well-recognized methods to identify and solve problems that arise in the development and implementation of a programme or activity) and infrastructure (the level of investment in a network by the groups and organizations that comprise the network). The index identifies available resources and capacity in the local community as well as barriers and facilitators to the implementation of a project. For this evaluation, the follow-up interviews primarily focused on the capacity for network partnerships as it was considered that, if change occurred within the project's timeframe, it would be most apparent within this domain. Hence, the results for the Community Capacity Index domains of knowledge transfer, problem-solving

Table 1 Summary of process and impact evaluation results

Indicators	Evaluation results
Process	
Number and range of stakeholders engaged	<p>Stakeholder contacts:</p> <ul style="list-style-type: none"> • Northern Area – over 520 stakeholders contacted; • Central Area – over 210 stakeholders contacted; • Southern Area – over 240 stakeholders contacted. <p>Stakeholders included staff from a range of Queensland Health hospitals, residential care facilities, community health and population health departments, as well as local government and non-government organizations.</p> <p>Stakeholders completed a total of 182 stocktake surveys:</p> <ul style="list-style-type: none"> • Northern – 28 from community and 16 from hospital/RAC; • Central – 43 from community and 26 from hospital/RAC; • Southern – 45 from community and 24 from hospital/RAC.
Number of district planning days held	<p>Northern Area:</p> <p>9 planning workshops (4 community, 1 hospital/RAC and 4 cross-continuum) were attended by 352 participants. Separate education sessions were held for 2 community and 12 hospital/RAC groups.</p> <p>Central Area:</p> <p>12 planning/education sessions (8 community, 1 hospital, 3 cross-continuum) were attended by 283 participants.</p> <p>Southern Area:</p> <p>18 planning/education sessions (6 community; 9 hospital/RAC; 3 cross-continuum) were attended by 285 participants.</p>
Percentage of Queensland Health facilities provided with the opportunity for workforce skill enhancement/training	<p>Northern Area: 62.2%</p> <p>Central Area: 75.9%</p> <p>Southern Area: 66.7%</p>
Impact	
Development of HSD-specific falls prevention action plans	<p>At the completion of the project, action plans were in various stages of development. Those underway included:</p> <ul style="list-style-type: none"> • Northern: 5 community; 4 hospital/RAC; 2 cross-continuum • Central: 1 community; 5 hospital/RAC; 2 cross-continuum • Southern: 3 community; 6 hospital/RAC; 5 cross-continuum
Establishment and/or maintenance/enhancement of HSD falls prevention working groups (or equivalent)	<p>Northern:</p> <p>8 working groups (including 2 cross-continuum) were established/maintained/enhanced</p> <p>Central:</p> <p>14 working groups (including 3 cross-continuum) were established/maintained/enhanced</p> <p>Southern:</p> <p>19 working groups (including 5 cross-continuum) were established/maintained/enhanced</p>

RAC, residential aged care; HSD, Health Service District.

ability and infrastructure are not reported in this paper but are available from the authors upon request.

Interviewees were identified by the FSOs as individuals with a sound knowledge of falls prevention activities for older people in their local area and included representatives from a range of organizations involved in falls prevention including acute hospitals, residential facilities and older peoples' organizations. Twenty-five baseline and follow-up interviews were conducted via telephone and in the majority of cases (95%), the same respondent completed both interviews.

Interviews with FSOs and project managers

Mid-term and post-project interviews were undertaken with FSOs and project management staff to identify facilitators and barriers to the project's implementation.

Results

Process and impact evaluation

The results of the process and impact evaluation are summarized in Table 1. While the results are presented by AHS, the areas are not meant to be compared because of differences in demographics, geographic size as well as types of health services provided. Throughout the project, FSOs contacted almost 1000 stakeholders across the community, acute and residential sectors, who completed 182 scoping tools/stocktake surveys. Stakeholders included staff from a range of Queensland Health hospitals, residential care facilities, community health and population health departments, as well as local government and non-government organizations. In addition, over 900 participants attended one of the 39 planning days held and the majority of Queensland Health facilities were

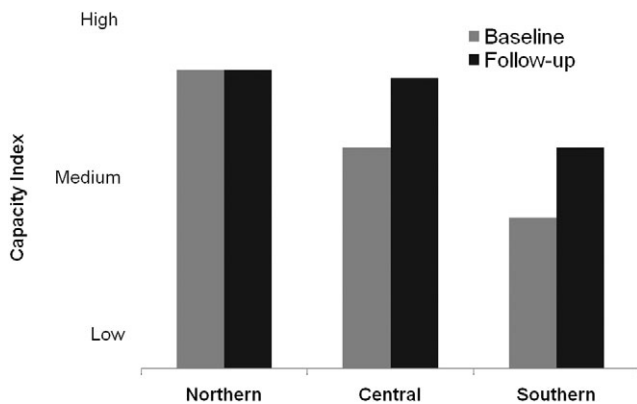


Figure 2 Capacity for network partnerships.

provided the opportunity for workforce skills enhancement/training.

While the project effectively reached large numbers of stakeholders, it is not known what proportion of stakeholders this number represents, nor how representative this group is of the stakeholders in a particular region. In terms of the project's impact, Table 1 shows that 33 action plans were in various stages of development at the project's completion (none had been implemented) and 41 working groups had either been established or supported with a resultant increase in the number and scope of participants. Of the working groups, 10 were established with cross-continuum membership, which was ultimately the aim of the project.

Outcome evaluation

Outcome evaluation was assessed using the Community Capacity Index [25] to measure the organizational capacity to work collaboratively to implement a cross-continuum model to address falls among older people across the health continuum, within each priority HSD. The capacity for network partnerships as assessed at baseline and follow-up is shown in Fig. 2. The Community Capacity Index yields a qualitative measure of capacity. For the purposes of evaluation a quantitative value was assigned according to capacity categories of high, medium and low, summed and averaged across the priority HSDs for each AHS.

Overall, there was evidence of a modest increase in capacity for network partnerships across HSDs from baseline to follow-up. Most of the observable change occurred within the Southern and Central AHSs. These areas had lower levels of capacity at baseline than did the Northern AHS, where no discernable change was observed. The purpose of the graph is to demonstrate change within an area pre and post implementation, rather than to compare AHSs (or HSDs) against each other.

Key learnings for project implementation

Perceived barriers and facilitators to the project's implementation were obtained from the process logs and status reports maintained by FSOs and from information provided by key stakeholders. The data were synthesized and analysed to identify key themes in relation to the role of FSOs, organizational readiness, stakeholder

engagement, planning workshops, and working groups, as well as general facilitators and barriers which influenced the longer-term sustainability of the project.

Role of FSOs

On the whole, this approach of having two FSOs (one for community and one for the acute and residential aged care sector) was effective when they worked as a team and had complementary skills. Feedback from stakeholders indicated that FSOs played a valuable role coordinating falls prevention activities, providing ongoing training, resources and support as well as providing strategic direction for the working groups. There was general consensus that FSOs should have a permanent role at district level to provide education and advice in relation to care planning and consultancy and undertake data reporting and feedback. Within each HSD there should be one FSO who is facility based and one who is community based to focus on primary prevention. Recruiting people with the right skill mix for the FSO role was an important project facilitator.

Organizational readiness

The evidence from key stakeholder interviews in the initial phases of project implementation highlighted the lack of local readiness and capacity, especially in the acute sector, to undertake falls prevention. The prior falls prevention activities may not have been sufficient (due to limited resources and capacity) and the health provider characteristics, organizational context and the attitudes held may not have been conducive to effectively translate evidence-based policy into practice. Requesting sectors to work across the health continuum requires major collaboration and an organizational change process. The project initially encountered strong resistance, when sectors were unable to see the benefit of working outside their own area and felt the need to 'get their own house in order' first. There is therefore a need to determine the readiness of the organization and practitioners to adopt change before programme implementation can be successful. Including falls prevention as a performance requirement within role descriptions for Chief Executives of Districts, Executive Directors of Nursing, Allied Health, Aged Care and Community Health would also ensure that there is a flow down effect for promoting falls prevention as 'everybody's business'.

Stakeholder engagement

Establishment of effective working relationships takes time. FSOs reported that, because of the short timeframe of the project, there was limited available time in which to identify all stakeholders, meet with them and make the necessary investment required to establish partnerships. Service directories and/or a comprehensive, up to date electronic database of stakeholders aided the ability of FSOs to readily contact and engage key stakeholders. Stakeholders were more readily engaged by explaining the purpose and benefits of the falls prevention cross-continuum model using the definition and resources developed. Lack of engagement of medical staff, including general practitioners, was noted as a barrier in implementation. It was recommended that to engage clinicians, health professionals, non-government organizations and older people

Table 2 Barriers and facilitators to key elements of the Falls Safety Officer (FSO) project

	Barriers	Facilitators
Stakeholder engagement	Lack of organizational readiness Initial lack of marketing of project and resources Insufficient time to conduct needs analysis and scoping Geographical size of districts	FSO skills and knowledge Availability of up-to-date contact directories Explanation of purpose and benefits of falls prevention cross-continuum model
Planning days/workshops	Staff availability Lack of administrative support Inflexible programme format	Access to resources and networking opportunities Facilitator skills and knowledge Population Health, Patient Safety Officer support
Working groups	Staff willingness to embrace cross-continuum membership District restructuring with abolition of Area Health Services and amalgamation of Health Service Districts	'Falls champions' Executive sponsorship Established district structure Development of Terms of Reference
Project sustainability	Time-limited nature of the project	Incorporation of falls prevention performance requirements into district executive role descriptions

themselves, a statement of benefits needs to be formulated and clearly articulated, that includes system and personal benefits (e.g. improved services, efficiency of service delivery, risk management and reduction).

Planning days

In general, the evaluation by attendees at planning days was positive and the opportunity for networking and learning about cross-continuum activities was appreciated by participants. Participants reported that planning days had been very informative and that the programme content was excellent. Planning days raised awareness of resources and aided access to information. The use of local data, as well as case studies of best practice across the care continuum, was effective in facilitating learning.

Working groups

Working groups have been a feature of strategies to audit, disseminate and implement evidence-based practice in falls prevention. In this project, working groups were facilitated when 'falls champions' were identified and district governance structures were established with the support of executive sponsors. Cross-continuum working groups needed to ensure that all sectors were represented, including organizations external to Queensland Health.

Project sustainability

The barrier most frequently reported and considered to be the most important obstacle to the longer-term sustainability of the project was the time-limited nature of project. It was considered by many, that without ongoing support for falls prevention activities by way of continuing funding for a dedicated staff member, the goals of the project would not be sustainable. The provision of education on a regular basis was considered by many respondents to be the most pressing need to maintain sustainability, due to both staff turnover and the use of agency staff who may not be aware of the falls guidelines. It was also considered important that such education be delivered in a flexible manner including providing education sessions at times to suit staff and delivering education in a

variety of formats (e.g. posters, handouts, video) to ensure the information is well disseminated.

The facilitators and barriers to project implementation are summarized in Table 2.

Discussion

In spite of the project's limitations and barriers to its implementation, stakeholders acknowledged that considerable progress towards key objectives and KPIs was achieved. First, the project effectively raised the profile of falls and falls prevention activities for older people as important issues and the value of a cross-continuum approach in reducing falls and their impact was highlighted. The project was also successful in disseminating a large volume of information and resources regarding falls prevention for older people. Considerable progress was made towards three KPIs, namely conducting district planning days in each HSD, providing staff within Queensland Health facilities with the opportunity to receive evidence-based, best-practice training in falls prevention, and establishing/enhancing working groups. The Community Good Practice Guidelines [12], the National Guidelines [11] and other resources developed as part of the Stay On Your Feet® toolkit were widely distributed and well received through the planning days, workshops and staff education sessions.

Feedback from the FSOs and other respondents indicated that the project's planning days provided excellent opportunities for networking and improved communication across the sectors by providing attendees with an opportunity to share information regarding local falls prevention initiatives. The planning days laid the foundation for the development of local and strategic partnerships between key stakeholders and the establishment of linkages across the community, acute and residential sectors that were formalized through the establishment/enhancement of HSD falls prevention working groups. The requirement for working groups to formalize goals, objectives, roles and responsibilities through the development of action plans was considered to be important for the sustainability of the project by providing the groups with direction for future action.

The results of this project and its evaluation demonstrate that a multi-faceted workforce enhancement strategy such as the FSO

initiative can effectively promote the dissemination and uptake of falls prevention activities. Many of the elements of the FSO project that were found to be effective have also been previously identified as important elements in the delivery of effective falls prevention interventions. These include the dissemination of falls information and the provision of education and resources for staff [26,27], the establishment of provider working groups [20] and planning workshops to develop action plans based on nationally identified gaps in service delivery [28]. The involvement of 'falls champions', joint working across boundaries, clear goals and objectives, top down influence, falls steering group and finance and funding have also been reported as being important factors in the development of a successful falls prevention service [28].

Good communication between key stakeholders has previously been identified as critical to the development of coordinated falls prevention activities and necessary for sustainable action [29]. Other facilitators applicable to this project that have been documented in the literature include working with partners for whom activities are already part of core business; sharing knowledge and expertise among partners and across disciplines so each understands their context, roles and responsibilities in addressing falls prevention and exploring mutual benefits; and considering at the outset, who might have a role in ongoing implementation and engaging them early to ensure sustainability [30].

Barriers identified in this project have also been documented in the literature [21] and included time limitations and competing staff demands; lack of a mandate to address falls; lack of staff knowledge and skills; and fragmentation and lack of coordination. The main barrier was the time-limited nature of project. A consequence of the project's limited timeframe was that only modest change in community capacity was observed, which is not surprising given that capacity building requires a long-term effort from all involved [3]. To overcome these barriers it was recognized that there is a need to coordinate and refer across settings and provider groups to understand each other's roles and skills and that dedicated people are needed for coordination [21]. It also needs to be recognized that many components of the programme are outside the health care system and service delivery is dependent on the availability of multidisciplinary professionals.

Limitations

A limitation of this project and evaluation is that it is not possible to state, with any degree of accuracy, the extent of the programme's 'reach' and whether the programme targeted all those who might benefit. As previously mentioned, the project effectively reached large numbers of stakeholders; however, it is not known what proportion of stakeholders this number represents, nor how representative this group is of the stakeholders in a particular region. A second limitation is the lack of data regarding the cost-effectiveness of the project as it was outside the scope of the evaluation. Although it is likely to be difficult to evaluate the cost-effectiveness of this project as the full effects may not be seen for some time, it is important to know whether the health care dollars invested in the project result in savings in the system (e.g. reduced hospital costs due to a decline in the falls rate) or whether the money might be better invested elsewhere. A further limitation of the project was that outcomes in relation to reductions in falls or falls-related injuries among older people were not demonstrated.

As this project was a pilot project of a workforce enhancement strategy and not an intervention directly targeting older people, it was not expected that there would be a reduction in falls or fall-related injuries over the 1-year timeframe of the project, nor could any such reduction if it did occur, be attributed to the project.

Conclusion

One of the project's aims was to inform the development of a state-wide cross-continuum service delivery model for falls prevention for older people across the health continuum evidenced by a consistent, coordinated, evidence-based approach. To this end, the following recommendations were made.

- 1 Each element of the model needs to be clearly defined at the outset. The elements include:
 - the settings and context in which the intervention will occur
 - the target group
 - the stages of progression (levels of care)
 - the interventions
 - workforce roles and responsibilities
 - resources available/required
- 2 The model should be based on a needs analysis, work within existing structures, and be integrated with other services for older people.
- 3 Any model needs to be simple and flexible. As districts differ in many important characteristics including geography, climate, demographics, priority issues and resources, it is important that a model can be readily adapted to meet the needs and requirements of the local area. A 'one size fits all' approach will not be effective.
- 4 To be sustainable the model will require adequate funding and it was almost unanimously agreed that falls prevention requires a 'driver' – a permanent staff member to coordinate and promote falls prevention activities at the district level.

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