

Pan Birmingham Falls Prevention Guidelines Report 2001

Trust Clinical Governance/R&D Department

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Doreen Harrison	Elderly Directorate Manager, BSCHT
Michelle Pillay	Nurse Consultant Elderly Care, BSCHT
Lucy Tye	Chief Officer, South East PCG
Debbie Szrejder	Development Manager, South East PCG
Linda Tomkins	Director of Nursing, BSCHT
Julie McCoy	BSCHT Clinical Governance Manager.

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- **Alistair Main (Chair)** - Consultant Geriatrician/ Associate Medical Director BSCHT
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- **Michael Kamalarajan** - Clinical Director, Birmingham Heartlands & Solihull NHS Trust
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- **Angela Mottram** - Falls Prevention Coordinator, North PCG
- **Marion Crundwell** - Development Nurse, Birmingham North East PCT
- **Ingrid Wilkinson** – Physiotherapist, City Hospital NHS Trust
- **Jed Rowe** – Consultant Geriatrician, Birmingham Specialist Community Health NHS Trust
- **Paul Dolan** – Performance Review Advisor Research User Involvement & Carers Unit, Social Services
- **Lorraine Thomas & Lydia Smart** - Hodge Hill PCG

- **Julie Twigg** – Adult Social Services Team Manager, Social Services
- **Susan Pylp** – Primary Care Manager, Heart of Birmingham PCG
- **Michelle Pillay** – Nurse Consultant, Birmingham Specialist Community Health NHS Trust
- **Carolyn Lindsey** – Specialist Health Visitor, Solihull PCT
- **Margaret Harries** – A&E, University Birmingham Hospital NHS Trust
- **Shirley Jobbins** – Specialist Nurse for Older People, North PCG

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2. Introduction

This project was initiated through the Birmingham Effectiveness Group (BEG). This group is co-ordinated by the Birmingham Health Authority (BHA). Birmingham Specialist Community Health NHS Trust (BSCHT) and Selly Oak PCG, which now forms part of the South East PCG (SEPCG), presented a bid to the BEG Group proposing that they fund a one-year project aimed at determining current “falls” prevention activity and developing guidelines for use in “falls” prevention across the City of Birmingham, *Appendix 1*. The bid was successful and funding awarded.

The Development Group, comprising of staff from the aforementioned organisations, advertised for and seconded a Project Co-ordinator. This post was managed through BSCHT’s Clinical Governance Department (CGD). The funding covered the Project Co-ordinator’s salary and associated on-costs. The Project Co-ordinator came into post in September 2000. The co-ordinator has a Senior Community Nurse background with experience of developing a “falls” Prevention Project within a PCG.

The Project Development Group was then reconfigured to establish a Steering Group for the project. The membership of this group is depicted in *Box 1*.

3. Background to “ Falls Prevention”

A fall is defined as

“ An unexpected event when the person “ falls” to the ground from any level, this also includes falling on the stairs and onto a piece of furniture” [Luukinen et al 1996].

The Government’s Public Health Strategy outlined in the document “*Saving Lives - Our Healthier Nation*” [DoH, 1998]

identified accidents including “falls” in the elderly as one of the four main areas for improving Health. The extent to which “falls” has impacted on individuals and society has been set out in the “*Slips Trips and Broken Hips*” campaign [DTI 1999] initiated by the Department of Trade

Membership of Project Steering Group

- Linda Tompkins - Director of Nursing and Localities - BSCHT
- Julie McCoy - Trust Clinical Governance Manager - BSCHT.
- Lucy Tye - Chief Co-ordinator - SEPCG.
- Debbie Szejder - Development Manager - SEPCG.
- Doreen Harrison - Elderly Directorate Manager - BSCHT.
- June Dadd - Project Co-ordinator - Secondment - BSCHT.

Box 1

and Industry (DTI) and the Health Education England (formerly the Health Education Authority). The campaign is to run between 1999 and 2002. During which time it aims to raise awareness of the risk and consequences of “falls” to the general public. It also aims to provide material for professionals to use and stimulate further research into the cause and prevention of “falls”.

Currently

- Every five hours an older person is killed by an accidental “ fall” in the home this equates to approx 1500 per year, [HAD, 1995].

- Sixty-seven percent of non-fatal “falls” happen to an older person at home, [HASS, 1995].
- The cost of a hip fracture is approx £12,124 (sterling) per person; annual costs per population £942 million (sterling), [Dolan P, Togerson D, 1998],
- Hip fractures are the most common major injury related to “falls” and accounts for 20% of all orthopaedic beds, [DTI 1999].
- Latest figures suggest that the cost of hip fractures in England costs the NHS around £1.7 billion and of this 45% of the cost is for acute care, 50% for social care and long term hospitalisation and 5% for drugs and follow up. [DOH, 2001].
- A fall can precipitate admission to long-term care. After a fracture, 50% of people can no longer live independently. Fear of falling can provide a significant limitation on daily activities. Falls in later life are also a common symptom of previously unidentified health problems, which need to be identified and managed, [DoH, 2001].
- A self reported survey revealed that approximately 50% of older patients who are discharged from A&E Departments following a “fall” related injury, showed an increase in dependency. During one week in England, in 1997, 470,000 households received home help or home care services. Of these:
 - 79,000 were aged 65-74
 - 178,600 were aged 75-84 and
 - 155,100 were aged 85 and over [DTI, 1999].

We are an aging society as the figures below demonstrate.

- By the year 2010 life expectancy at birth will be 77 years for men and 82 years for women,
- In 1999 it is estimated that 33% of the population in England will be over 50 years of age [DTI, 1999].

“Approximately 30% of people over 65 years of age and living in the community “ fall” each year, the number is higher in institutions. Although less than one “fall” in 10 results in a fracture, a fifth of “fall” incidents require medical attention” [Gillespie et al., 2001].

3.1 Society’s View

Experience and anecdotal evidence suggests that society views “falls” as an inevitable part of aging and indeed some clients have said that when visiting their General Practitioner after a “fall” they have been told “it’s your age what do you expect”. The belief that “falls” are an inevitable part of the aging process [Sheldon 1960] is not upheld by the definition of “falls” that they are “an unexpected event” [Luukinen et al., 1996]. Popular television programmes make much of other people’s misfortunes and who has not laughed when we have seen people “fall” over in a spectacular manner. Whilst most of us can get up easily the same is not true of older frailer adults. Where we may have sustained a bruise or two and possibly suffered some embarrassment to an older and more vulnerable person a “fall” can represent a major disaster in their lives. The results of a “fall”, a fracture (broken bone), a pressure related injury, an Infection, hypothermia (loss of body heat) all a result of lying in the same position unable to get help for even a relatively short period of time, or just the “fall” itself can bring about loss of confidence (being afraid to perform every day tasks or go out alone) and reduce mobility (not able to walk and move as easily as before) leading to social isolation and depression. A fall can increase dependency and disability. The effect is devastating in a “fit and active” older person but is even more so when it happens to a frail older person who may be suffering from a degenerative disease associated with aging. Sixty-six percent of people aged seventy-five and over reported having a long-term illness, [DTI, 1999]. Fifty-two percent of those aged seventy-five and over reported that their illness limited their lifestyle, [DTI, 1999].

3.2 Falls Prevention – How?

Conducting a literature search extracted the evidence; the “*Interventions for Preventing Falls in Elderly People*” [Gillespie et al., 2000 updated in May 2001] the “*Guidelines for the Prevention of Falls*” in Older People [Feder et al., 2000], and the “*National Service Framework (NSF) for Older People*” [DoH 2001] published in March 2001. These documents formed the evidence base for the development of the citywide falls prevention guidelines. The evidence suggests that the following types of intervention will, given the current evidence, be the most beneficial in reducing falls.

3.2.1. Multidisciplinary, Multifactorial, Health/Environmental Risk Factor Screening/ Interventions both for Unselected Community Dwelling Older People and for Older People with a History of Falling.

In their review of the evidence around multidisciplinary and multifactorial interventions [Gillespie et al., 2001] considered fourteen studies. The majority of assessments in the studies were made by a nurse or other trained person, who screened / assessed the participants for environmental, medical, functional and cognitive behavioural problems then provided advice and arranged referrals. These studies used a variety of methodologies. The conclusion was “that there is considerable evidence in support of the effectiveness of these interventions” but, suggests that is not easy to explain some of the diversity that remains in the results [Gillespie et al., 2001]. Many other researchers have also concluded that multiple risk factor interventions reduce falls [Tinetti et al., 1988 & 1994; [Close et al., 1999] another author concluded that his “multifactorial home visit approach” had not proved to be effective in the Dutch Health Care System and that the

majority of the evidence supporting this type of intervention was from the United States. [Van Haastregt, 2000]. This views are support by Gillespie et al; [2001].

The components of a Multidisciplinary, Multifactorial, and Health/Environmental Risk Factor Screening/ Intervention include:-

3.2.1.1 Environmental

The environmental factors for screening focus on the safety of the individual in their environment and include such things as; Adequate lighting to safely accomplish tasks and negotiate their way around the home, floor covering, obstacles that impede safe passage, position of household equipment and furniture for ease of access. They also include the use of and assessment for, suitability and correct usage of any current or required aids. (Tinetti et al; 1988). (DTI 1999)

3.2.1.2 Medical

The medical screening component would consider Poly-pharmacy (multiple medications). The presence and treatment of any disease process likely to contribute to “falls”. This would be through loss of balance` altered gait and reduction of mobility, hearing, eyesight and cognitive deficiency that may diminish safety. (Close et al; 1999) (Campbell et al 2000)

3.2.1.3 Functional

Functional assessment is concerned with activities of daily living that the person may find impossible or difficult [Victor C & Howse K 2000]. Support is given to enable the person to consider alternative ways of enabling them to continue to carry out the tasks for themselves. Aids and adaptations are also considered in order to attain optimum independence. These may also be used to enable more effective care from the carer and reduce the strains and tension thus reducing the associated risks for the carer, helping to maintain their health.

3.2.1.4 Cognitive/ Behavioural

This assessment looks at action taken by the person that may contribute to their fall for example turning or getting up too quickly and putting items on the stairs that may trip them up. Cognitive impairment may prevent the person from understanding how to alter their behaviour in order to keep them safe, hence the need for its inclusion in the assessment.

For all of these categories the Initial screening can be carried out by anyone with a basic level of “falls” awareness training. The more in depth assessment must be undertaken by a suitably trained health professional, who, will refer to other health professionals for specific interventions, then undertaking a review to determine if the interventions have reduced the clients risk factors, [Victor et al;2000].

3.2.2 Exercise

Exercise is seen as an important component in the sustaining and improving of health, (Marr J, Kershaw B 1998) Bortz (1992) as cited by Marr & Kershaw claims that regular exercise reduces the morbidity and mortality of aging, This is born out by the “*NSF for Older People*” (2001) however in “falls” prevention the evidence suggests that “exercise alone” interventions, apart from Tai Chi, do not prevent “falls” for older people where they have not been specifically identified as being at risk of “falls”. However as part of a multifactorial intervention programme exercise was seen to be very important [Feder et al., 2000]. The evidence by Gillespie et al [2000] suggests that individually tailored exercise programmes targeting the over eighties age group and administered by qualified professionals can be effective in the prevention of “falls”[Gillespie et al., 2000] & Feder et al., 2000].

Individually prescribed home programmes of muscle strengthening and balance retraining by a trained health professional or a fifteen week Tai Chi group exercise programme were advantageous in preventing “falls”[Gillespie et al., 2001]. A study on home exercise programmes previously undertaken successfully by physiotherapists showed that it was equally effective when run by trained nurses and that the programme was cost effective in people aged 80 years and above when compared with younger people [Campbell et al., 2001]. The study used targeted exercise interventions designed to improve balance, strength, gait and mobility.

3.2.3 Medication

The review of medication is included in a multifaceted “ falls” prevention programme with the rationalisation of medications wherever possible. [Feder et al., 2000]. Usually a client on four or more medications (polypharmacy) is considered to be “at risk”. The presence of psychotropic medication drugs that affect the mind for example antidepressants, stimulants, sedatives and tranquillisers and its withdrawal is considered beneficial [Gillespie et al., 2001] although not always easy to achieve [DTB September 2000, Vol. 38, no. 9]. Changes that are age related affect consumption and actions of medication in the body [Victor & Howse 1995].

3.2.4 Home hazard assessment and modification that is professionally prescribed for older people with a history of falling.

This assessment looks at the safety of the person who is at risk of falling. It introduces those modifications thought to be appropriate by the health professional to reduce the risk of falling. Gillespie et al., [2001] says that this type of intervention is beneficial, however

“The association of domestic hazards with “falls” in the home is controversial, despite its face validity” [Gillespie et al; 2001]. However, three trials with a substantial home hazard modification component [Carter, 1997; Cumming, 1999; Hornbrook, 1994] have now reported data, which support its effectiveness. Despite this some authors [Cumming, 1999] conclude that “this effect is unlikely to be caused by home modifications alone “ since the reduction in “falls” was not confined to “falls” inside the home. This is true also of the reduction in the number of participants reporting two or more “falls” [Carter, 1997], where “falls” in the yard/garden associated with the dwelling were also eligible. While the evidence supports interventions designed to reduce home hazards the exact mechanism of the effect remains unclear [Hornbrook, 1994]. There is some evidence that those interventions, which set out to target single risk factors, may have an unintended multifactorial effect, that is [Cumming 1999] when discussing the finding stated, “an occupational therapy home visit seemed to be equally effective in reducing the risk of falling at home and away from home. He hypothesized that “occupational therapists take into account the characteristics of the person living with the hazard such as poor mobility and poor vision when they assess a home for hazards and this visit is likely to have the effect of raising awareness of “falls” and their prevention”, the same could be said for other health professionals interventions [Campbell, 1997 and Robertson, 2001].

4. Methodology

The project was split into two stages. Stage one looks at mapping current falls projects and provision. Stage two is concerned with the establishment of a group to agree the evidence base and develop a set of guidelines that will ultimately lead to a care pathway for falls prevention in line with the Governments NSF for Older People.

4.1 Stage One ~ Baseline Falls Prevention Activity

By visiting sites across the city currently involved in “falls” prevention, baseline data was collected using a semi structured interview technique. Kvale (1996) defines the interview as “a conversation that has a structure and a purpose” [Kvale, 1996,p6]. The most important advantage of using an interview as the method of data collection is in data quality [Judd et al., 1991]. Personal interviews have the highest response rate of any survey technique [Judd et al., 1991]. The face to-face interviewer can establish the rapport and motivate the participant to give a full and accurate account that improves the quality of data gained [Judd et al., 1999].

4.2 Stage Two ~ Evidence Review & Guideline Development Group (ER&GD)

A group was established using a system of nominations from all interested parties to agree the evidence base and to develop guidelines based on that evidence. In order to reduce bias it was decided to include people with knowledge of, but no experience, in “falls” prevention work.

To establish the evidence base for the guidelines a literature search was undertaken. The steering group agreed that this evidence could be presented to the ER&GD group for them to decide if the documents are to be used as a base from which to develop the citywide “falls” guidelines.

The ER&GD group, chaired by Dr A Main Consultant Geriatrician and Associate Medical Director of BSCHT, was comprised of representatives nominated by the Chief Officers of PCG'S, Medical Directors of NHS Trusts and Social Services Managers. Membership of the ER&GD group reflected the different geographical locations, primary and secondary health care and social services staff. It was also felt that the membership should have the support and agreement of their organisation to effect change and implement the guidelines when complete and signed off by the ER&GD and the Steering Group. The membership of the ER&GD is depicted in *Box 2*.

The groups inaugural meeting took place on March 2001 where the membership agreed to use the documents “*Interventions for preventing falls in elderly people*” [Gillespie et al., 2001]“*Interventions for preventing falls in the elderly*” [Gillespie et al., 2000] and “*Guidelines for the prevention of falls in older people*” [Feder et al., 1999] suggested by the steering group as a base for developing the city wide guidelines. The evidence base was agreed following dissemination to all group members and discussion as to the validity of the reviews done.

The remit and terms of reference for the group was also agreed, *Appendix 2*. The terms of reference were referred to throughout the process to ensure that what was suggested or planned was in line with our goal. Health professionals are busy people and there are many facets of their work vying for their attention. It is essential in a project like this that

removes them from their clinical setting that the time they give is appropriate and benefits them and their patient /client group.

This can only be achieved by a clear aim and objectives. Good chairmanship of the meetings with work allocated outside of the meeting times, written terms of reference which state the purpose of the group and the group members responsibilities enable this and encourages participation and ownership of the project, [Prince 2]. As one of the group said she found herself thinking about all the different things that could be done but then reminded herself that the goal was the development of the guidelines.

As previously stated membership of the group was

through nominations. This method enabled the Medical Directors and Chief Officers of

Membership of Evidence Review and Guidelines Development Group

- Alistair Main (Chair)
Consultant Geriatrician, Associate Medical Director, BSCHT.
- Sandra Mason
Primary Care Development Manager - SEPCG.
- Ann Thake
General Practitioner - Heart of Birmingham PCG
- Angela Mottram
“ falls” Prevention Co-ordinator BSCHT/Sutton PCG.
- Marion Crundwell
Development Nurse - Birmingham North East PCT
- Ingrid Wilkinson
Physiotherapist - City Hospital NHS Trust.
- Jed Rowe
Consultant Geriatrician - BSCHT.
- Rose Gilbert
Sister Day Hospital – City Hospital NHS Trust.
- Michael Kamalarajan
Clinical Director - Heartlands Hospital NHS Trust.
- Roz Grant
Physiotherapist - University Hospital NHS Trust.
- Paul Dolan
Performance Review Advisor - Research User Involvement & Carer Unit Social Services.
- Lorraine Thomas & Lydia Smart
Assistant Primary Care Manager - Hodge Hill PCG.
- Susan Pylyp
Primary Care Manager - Heart of Birmingham PCO.
- Michelle Pillay
Nurse Consultant for the Elderly - BSCHT.
- Carolyn Lindsey
Specialist Health Visitor - Solihull PCT.
- Margaret Harries
Accident and emergency - University Hospital NHS Trust.
- Shirley Jobbins
Specialist Nurse for Older People - BSCHT
- Julie Twigg
Social Services Team Manager - Birmingham Social Services
- June Dadd
City Wide “ falls” Prevention Co-ordinator - BSCHT.

Box 2

Trusts and Social Services Managers to delegate membership to those who had considerable skill, knowledge and or interest in this area. The list of nominations was taken to the Steering group for consideration and a selection was made based on geographical area, area of expertise and professional group. The successful nominations were contacted and appointed. This method was chosen as it ensured citywide representation. Another approach discussed was open invitation; this method has the advantage of giving a greater number of people the opportunity to attend. It is likely though to create extremes of numbers and representation both professionally and geographically.

The nomination method gave us a group of nineteen; the evidence suggests that having more group members will increase the reliability of group judgment. However, where the group members interact, large groups may cause co-ordination problems within it. Although theoretically it is likely that group size will affect decision-making, the effects are subtle and difficult to detect. Its likely that to have below six participants, reliability will decline quite rapidly, while above twelve, improvements in reliability will be subject to diminishing returns [Health Technology Assessment 1998;vol 2:No.3]. Between nine and thirteen members attended each meeting giving us the optimum number as suggested by the evidence for reliability, while everyone was given the opportunity to contribute to the development of the guidelines by emailing and mailing our amendments being available for comments.

There are advantages and disadvantages of consensus development which influence the decision making process. The advantages include the wider knowledge and experience of a group versus an individual; a group carries more weight than an individual when it comes to influencing the behaviors of others. The interaction of group members stimulates

discussion and consideration of new ideas and challenges old ones. Where one individual dominates, this can be a disadvantage as it can when the group rejects idiosyncrasies wrongly because they don't all see things that way. The majority of the disadvantages can be reduced by the choice of participants and by ensuring the topic for guideline development is one, which there is a mismatch between clinical practice and available research evidence (Health Technology Assessment 1998; Vol. 2:No.3 p1&63)

5. Findings and Interpretation

5.1 Stage One ~ Data from Citywide Visits to Falls Prevention Programmes

As previously stated the data was collected using a semi structured interview technique and is confidential to the coordinator. This method was chosen in order to critically appraise the projects in line with the evidence and avoid the potential for criticism of individual projects. It is not the aim of this report to be critical of the current level of falls prevention work; rather to identify good practice and with the help of the guidelines enable other areas to set up appropriate, evidence based falls prevention work.

Birmingham is a multicultural City with a variety of different needs in different areas. It has areas of deprivation and affluence as well as a high elderly population and a high teenage pregnancy rate. Each of the project sites took account of their client population's varying needs and is situated in a variety of areas across Birmingham.

5.1.1 Project Sites

The Project coordinator visited fifteen sites across Birmingham. Of the fifteen sites twelve had a programme in place, one had been operating but had recently evaluated the service and were in the process of implementing changes to the programme. ("Falls" work was still an integral part of the areas work). Two areas had not formally initiated falls work, one expressed an interest and was visited to explain about the project and were willing to participate in the development of the guidelines in order to more effectively establish their own work. Another area was working to integrate "falls" work into its managing vulnerability project; this was in the development stage. Therefore thirteen projects will be

described. The writer is aware that “falls” work is not necessarily confined to projects and does take place as an integral part of care where knowledge and awareness of falls prevention exists.

5.1.2 Project Personnel

Table 1 depicts the range of professional groups who led on the Falls Projects across Birmingham.

<i>Project Led By</i>	<i>Number of Projects</i>
Nurse	9
Nurse & 2 Physiotherapists	1
Consultant	1
Multidisciplinary Team	1
Nurse led with Consultant input	1

Table 1

5.1.3 Project Funding

Two projects had funding for staff, one at thirty and the other fifteen hours per week. They also had funding for: -

1. Training in falls prevention,
2. Related literature
3. Extend exercise training for volunteers to increase the number of exercise classes in the area.

One project had initial funding for the purchase of equipment and literature. Whereas another project funded a Nurse on a consultancy basis. The other nine projects have not had additional funding.

5.1.4 Project Location

Table 2 shows the range of locations where the Falls Projects across Birmingham where set.

<i>Project Setting</i>	<i>Number of Projects</i>
Acute Hospital	3
Community/Cottage Hospitals	3
Community	3
Acute Hospital Day Hospital	1
Health & Social Services Day Centre	1
Health and Social Services Rehabilitation	1

Table 2

5.1.5 Project Design

Nurse Led Projects

The design of project varied for the nine Nurse Led Projects. The three community hospitals having a referral system from consultants, General Practitioners (GP's) and Community Nurses with GP consent. A brief history is required by all three prior to assessment, one community hospital visited patients in their own home to assess for suitability prior to attendance at the course. This screening process identifies those who

would not benefit, for example, those with cognitive impairment that rendered them unable to utilize the information given. The clients attended a six to eight week course that included health promotion, exercise, and practical sessions on how to avoid a fall, what to do, how to get up or get help, if you do fall. A reassessment is carried out at the end of the course to determine level of improvement. Two of the community hospitals had an assessment by the Nurse, who identified individual risk factors, targeting those and initiating interventions to address those risk factors and referred to other appropriate professionals

The three Nurse Led Community projects trained carers and professionals of any organisation or individual involved in the care of older people to: raise their awareness of falls, interventions that help prevent falls, and services available to people who fall. The two projects trained across their PCG's. Two were Nurses involved in falls prevention work in their own practice setting. Of these two, one took referrals for assessment of fallers across the PCG, whilst the Nurses in the other project worked in their own setting. Nurses in both projects assessed for risk factors and when these were identified referred to other professionals as necessary and worked with the clients themselves to reduce their risk factors. A Nurse, employed on a consultancy basis for a project, organised appropriate training for one group of community staff for the pilot phase of the project. Referral for the Community Nurses came from their own caseloads depending on their post, GP's, District Nurses (DN), Health Visitors (HV), Clients, Relatives, Social Workers (SW) and other Carers.

Of the three other Nurse Led initiatives one runs a falls group once a week, the client is usually already attending the facility and is referred internally or by the GP, DN, HV, Carer or SW. Another Nurse led project uses the same type of programme, it is generally part of

a larger rehabilitative process and the client is resident in the facility. Referral is generally from an acute setting although it can also be via the GP and Social Services (SS). The third Nurse led initiative was based within an Accident and Emergency Department of a local Acute Hospital. Referrals were made to a Nurse attached to the unit who was aware of the needs of the older person who had fallen. She would assess them, identify risk factors and with the client decide on appropriate interventions and refer to other appropriate services or professionals prior to their discharge home from A&E.

Consultant Led Falls Clinics

One project was a Consultant led clinic based in a community hospital and operates in conjunction with its Nurse led clinic. The Consultant receives referrals from other Consultants, GP's, Nurses and the Nurse led clinic. This Clinic looks at the medical causes and effects of falls that require specialist intervention and has been developed through the interest of the Consultant in the subject of falls over the years.

Another project is by Consultant referral only. The Nurse leads the programme on the Consultant led unit and therefore any request for a place has to be via the Consultant. The Nurse assesses the clients and refers appropriately, and then a set programme of health promotion, exercise and practical demonstrations of how to get up following a fall is followed over a period of eight weeks. Reassessment is carried out at the end of the course to determine what level of improvement has been reached and if any further follow up and or interventions are necessary.

5.1.6 Evidence Base

The evidence used for the existing falls projects varied according to each project or service. Those advocating an individual and targeted approach cite evidence to support this as opposed to those who favour a more all-inclusive programme.

All projects have considered the evidence when developing their projects but not always in sufficient depth. New research is constantly being published and the projects need to be aware in order to alter their projects / services accordingly.

5.1.7 Outcome Measures

An improvement in pre assessment levels following prevention programmes through a process of reassessment, reduction in falls and reduction of associated risks following interventions are outcome measures used by the projects.

5.1.8 Evaluation

Evaluation takes place in all the projects through a variety of methods. Including patient and training feedback, questionnaires as to the user perspective of the tool, compliance of staff in completing risk assessment tools and total number of falls where these can be easily identified. Follow up of clients and the recording of any further falls during a predetermined period following intervention. All of the outcome measures were used in the evaluation.

5.2 Stage Two ~ The Guidelines

The flow diagrams, *Appendix 3*, represent the process by which a practitioner would utilize an evidence-based approach to falls prevention.

5.2.1 Assessment Process Flow Diagram (*Appendix 3, Section 1*)

This diagram looks at the overall assessment process and acts as a guide to the practitioner.

5.2.2 Falls Prevention Process Flow Diagram

5.2.2.1 Identification of People at Risk of Falling

These are the target groups for screening as illustrated in *Box 3*. This list is based on evidence. The ER&GD Group discussed the apparent inclusivity of this list and decided that as the evidence has identified these groups as being at risk, the group felt that the list could not be further refined to reduce the apparent inclusiveness.

The category “those not seen by Health and Social Services” was discussed and how they could be identified if not seen by the services. It was decided by the group that the GP Age Sex Register would be the most appropriate way of identifying

Screening should target those most likely to be at risk

- Those that are not seen by Social and Health Care Service
- The Vulnerable Frail, socially isolated, high dependence, on family or services, living alone
- Those over 75
- Opportunistic screening for those over 65 and under 75

Box 3

those previously unseen and a system of screening and assessment implemented.

Concern was raised as to the efficacy of the interventions if people were not in contact with Health and Social Services, questioning their willingness to comply. Efficacy can only be determined through initiating the screening, assessment, intervention and then evaluating the interventions and auditing the service to determine its effectiveness. Training for staff in areas such as change management, health promotion, effective communication and advanced assessment may be necessary to ensure that this group is not excluded from receiving appropriate care.

5.2.2.2 Screening

The screening tool, *Table 3*, was adapted from work done originally in Romford PCG, (2000). The adaptations focused on simplifying the tool to enable non-health professionals and carers to opportunistically carry out the screening. Training on the use of the tool and the raising awareness of the risk and prevention of falls are considered to be the basic level from which people using the screening tool could operate. However in terms of health promotion and the general public it was thought that if a publicity campaign was mounted to raise awareness of falls then this simple criteria could be used as a basis for enabling the general public to recognise if they or someone they knew was at risk from falling, this will be further discussed in the recommendations section of the report.

Initially the screening tool could have been interpreted so that all those being screened would be identified as being at risk, it was therefore decided to add, “that affects his or her balance, safety or confidence to each of the four questions and a note at the commencement of the screening tool to prevent this. As it has not been possible to audit the use of the screening tool this would need to be done to determine its efficacy and validate the tool.

Suggested screening criteria

NB This screening is to identify those “at risk “ of falling and this should be borne in mind when asking the questions. Simply having a difficulty will not put them at risk but if it affects their confidence and/or their ability to do things safely then they are at risk

		Yes	No
1	Has the person fallen at home or broken a bone as a result of a fall in the previous year. Ask person		
2	Is the person taking sleeping tablets or four or more medicines either from the doctor or chemist ask person how many medicines he/she is taking and what type		
3a	Do they have a serious disease such as Parkinsons disease, Dementia, Arthritis of the knees or hips, had a Stroke or anything that seems to affect their balance. Ask person or carer		
3b	Is he or she able to rise from a chair of knee height easily (a chair where their feet are flat on the floor and knees are at right angles) if not already observed ask the person to sit and then stand up from a chair of knee height.		
3c	Does the person have a problem with their eyesight that affects their confidence or reduces their ability to perform tasks safely? Ask person about their eyesight and how it affects		
4	Does the person report any problems with dizziness that has not previously been investigated and or causes them difficulties with their balance that affects their safety? Ask person or carer		

Table 3

The format for the screening was related to the assessment in order that each screening question corresponded with an area of assessment. It was agreed that one positive response to the screening as apposed to Romford’s two should trigger a referral for assessment because any one of the screening criteria could put the client at risk of a fall.

Once a risk is identified a referral is made to a health professional to do an in-depth assessment to determine the area and level of risk. Again the group discussed who should do this assessment; it was agreed that it should be qualified Nurses, Doctors, Physiotherapist and Occupational Therapists that have been trained to undertake falls assessment. The group came to this decision because in their experience, although the

majority of health professionals have an understanding of falls and their prevention, there is evidence of a lack of knowledge and understanding of recent relevant research evidence, resulting in inappropriate interventions and referrals.

5.2.2.3 Interventions

The next stage on the flow diagram illustrates the intervention paths depending upon the area or areas identified during initial screening. The interventions are coded with a solid line surround and the assessment with a dotted line surrounding, *Appendix 4*. Each intervention is in accordance with the evidence and this is marked on the guidelines document. All the interventions have been discussed in the group and consensus reached. The final version of the guidelines is discussed in this report. Each section of the guideline is illustrated on a one-page format to facilitate ease of reading and assimilation, *Appendix 3*. This format was not considered by the group to be the most user-friendly for professionals in practice, so a more comprehensive form of documentation has been produced, *Appendix 4*.

5.2.3 Health Promotion Flow Diagram (*Appendix 3, Section 2*)

The Health Promotion Flow Diagram sets out the topic areas, methods of presenting the information and the people who could deliver the information. There is no empirical evidence to suggest that this type of intervention actually prevents falls. There is however evidence that Health Education and Promotion give people information by which they can then make informed choices. “No smoking campaigns” have highlighted the dangers of smoking on smokers, and others, who passively inhale their smoke, health and this has brought about the revolution in which large numbers of organisations now have no smoking policies. By educating people about the possible risk factors for falls and

promoting healthier and safer alternatives this may influence people and affect their attitudes and behaviours and thereby prevent and reduce the number and severity of falls.

5.2.3.1 Topics

To reduce the risk of falls further we need to explore lifestyles and the aspects of healthy and safe living.

- An active independent lifestyle with social interaction and support networks can help to reduce the risk of depression and contributes to the value and enjoyment of life. Whereas a sedentary lifestyle with little social interaction and little or no support network which can reduce mobility, which in turn increases dependency, reduces enjoyment of life and increases the risk of falling because of the decreasing circle of life.
- Healthy Eating, this reduces the risk of heart disease, hypertension and obesity whilst increasing the ability to fight infection and repair damaged tissue.
- Exercise, improves stamina, maintains or improves mobility, agility, and balance. It also promotes a feeling of well being and keeps the heart and lungs in shape.

Avoidance of the risk factors associated with falls

- Home Safety, is about identifying those areas around the home that are potential accidents waiting to happen.
- Footwear/ Foot Care, inappropriate footwear can cause or contribute to a fall or cause foot problems that affect the ability to walk and perform tasks. This is due to the shoe not fully supporting the foot.

Inadequate foot care can lead to a variety of difficulties such as hard skin and excessively long toe nails that could in turn affect mobility.

- Hearing & Sight difficulties if not corrected or identified can contribute to a fall because the person is not aware of his difficulty and does not take alternative actions. For example the person who does not hear a car coming and steps into the road or the person who gets up from bed in the night and doesn't turn the light on and falls over something or misses his footing because his sight already not perfect is reduced still further by the lack of light.

By addressing these issues through assessment alternative behaviours to reduce these risks are explored and the person is supported to achieve the necessary changes. Without the assessment and change the ability of the older person to care for himself, the risk of reduced mobility and a reduced quality of life are increased.

5.2.4 Assessment “Fall in the previous year and or a broken bone following a fall” Flow Diagram (Appendix 3, Section 3)

A fall in the previous year or previous fracture is the best predictor of further falls (Campbell et al 2000). Therefore the question “Fall in the previous year and or a broken bone following a fall” is used to identify potential risk factors.

If “Fall in the previous year and or a broken bone following a fall” is highlighted during screening the assessor identifies the circumstances around the fall and works with the client to reduce the likelihood of this occurring again. This is done by

- a) Teaching the client about risk, how to avoid unnecessary risks and reduce risks in every day situations.
- b) Explaining how to move more safely, effectively and with confidence.
- c) An exploration of the effect that the fall has had on confidence and identifying together possible interventions to enable the client to overcome any confidence loss.

- d) An assessment of the environment in which the client lives and then working with the client to identify and alter behaviours that increase risk.
- e) Specific exercise interventions designed for the individual to improve strength and balance.
- f) The assessment of current exercise status and discussion as to what exercise may be undertaken to improve their health. (Specific exercise intervention to improve balance and strength is required to reduce risk factor).

Where the history indicates that it may have been or still is a clinical reason precipitating the fall the assessor would carry out a physical examination or refer to an appropriate colleague if unable.

Referral Options (Dependant on professional undertaking assessment)

- 1) **Physiotherapist** for specific exercise interventions, assessment of mobility and for interventions within their role
- 2) **Occupational Therapist** for aids and adaptations that the assessor is not skilled and or not permitted to supply.
- 3) **Medical Practitioner GP or Consultant** for medical and osteoporosis assessment.
- 4) **Nurses** for nursing care related to management of client. Health Promotion and Education
- 5) **Social Services/ Private Care Agencies** for domestic help and support

5.2.5 Assessment “Four or more medications” Flow Diagram

(Appendix 3, Section 4)

The assessor should do a review of the medication where the screening indicates that a person is on four or more medications.

The review should look at:

- a) Types of medications (including over the counter medications) hypnotics in particular are thought to be a contributive factor in falls.
- b) Dosage whether it is correct for client and for purposes it is given.
- c) Whether the client is taking the medication and if so is he taking it correctly.
- d) Whether the client understands why he is taking the medication.
- e) Possible interactions.
- f) Side effects.
- g) If taking hypnotics review sleep pattern and discuss possible alternatives to medication.

Where a client continues to take a medication that increases his or her risk of falling the assessor and the client should discuss the risk and develop a strategy to either reduce to an acceptable level or eliminate any risk associated with taking their medication.

Referral Options (Dependant on professional undertaking assessment)

- 1) **GP** for discussion about suitability of prescription and decisions about medication regime.
- 2) **Pharmacist** for advice and information about medication and possible alternatives.
- 3) **Professionals** who offer alternative help for sleep problems.
- 4) **Nurses** for Health Education and Promotion. Support of client in managing change.

5.2.6 Assessment “ Balance Gait and Mobility” Flow Diagram

(Appendix 3, Section 5)

The assessor looks at all aspects of gait, balance and mobility. Observing and discussing activities associated with daily living and what help they need to enable them to perform these tasks.

- a) Teaching the client about risk, how to avoid unnecessary risks and reduce risks in every day situations.
- b) Explaining how to move more safely, effectively and with confidence particularly in new situations and on uneven surfaces.
- c) Assessment for equipment that may reduce risk factors.
- d) An assessment of the environment in which the client lives and working with the client to identify and alter behaviours that increase risk. To compensate for any disability and maximise safety and so that daily activities do not require stooping or reaching overhead if this is potential risk point.
- e) Specific exercise interventions designed for the individual to improve strength and balance.
- f) The assessment of current exercise status and discussion as to what exercise may be undertaken to improve their health. (Specific exercise intervention to improve balance and strength is required to reduce risk factor).

Referral Options *(Dependant on professional undertaking assessment)*

- a. **Physiotherapist** for evaluation of range of movement, strength, balance or gait exercises and transfer exercises.
- b. **Occupational Therapist** for aids and adaptations. More in depth assessment of functional capabilities.

- c. **Nurses** for nursing care related to management of client. Health Promotion and Education
- d. **Medical Practitioners** for assessment of surgical or medical intervention
- e. **Social Services/ Private Care Agencies** for domestic help and support.

5.2.7 Assessment “Dizziness” Flow Diagram *(Appendix 3, Section 6)*

A history is taken of any episodes of Dizziness, the preceding movements that may have caused the dizziness, the character of the dizziness and the associated symptoms. How these episodes affect the person and their activities of daily living is considered. If, following investigation, there are no appropriate interventions that will prevent the dizziness, then a discussion with the client about how they could reduce the risk of a fall and or injury should be undertaken.

Referral Options *(Dependant upon professional carrying out assessment)*

- 1) **Medical Colleagues** to take more detailed history and refer appropriately according to Algorithm.
- 2) **Nursing Colleagues** to undertake relevant history and develop with the client a plan of behavioural changes designed to prevent untoward effects of dizziness.

5.2.8 Assessment “Hearing, Eyesight, Cognitive Impairment and Depression” Flow Diagram *(Appendix 3, Section 7)*

This assessment is around identifying through discussion with the client exactly what these difficulties mean to them and how they affect them in their activities of daily living.

Hearing.

- a) Examining the ear for signs of infection or wax compaction
- b) Discussion about how their hearing affects them.

Eyesight.

- a) History of any difficulty with eyesight.

Cognitive Impairment

- a) Assessment of cognitive ability using recognised scoring method
- b) Discussion with client / carer about how this affects them and how they obtain help and support.

Depression

- a) Assessment of Depression.
- b) Discussion with client about how this affects them and how they obtain help and support.

Referral Options (*Dependant upon professional carrying out assessment*)

- 1) **Medical Colleagues** for in depth assessment of depression and or cognitive impairment and medical or surgical interventions.
- 2) **Optician** for assessment and interventions
- 3) **Audiologist** for assessment and interventions
- 4) **Social Services** for domestic help and support.
- 5) **Nurses**, General and Psychiatric for Health Education, Promotion advice and support.

6. Discussion

The above guidelines represent Health and Social Services expertise and experience from across the City of Birmingham. The implementation of these guidelines will provide a framework from which falls prevention services can meet the needs of the community of Birmingham and provide an equitable, evidence based service for all. The commitment of all care service organisations is needed to ensure the equity of service for all. The NSF for Older People requires a specialised falls service by the year 2003. The production and implementation of these guidelines will be the first step towards that service.

The citywide method of developing these guidelines means that each individual organisation does not have to spend valuable time and waste precious resources developing their own guidelines, instead they are free to implement and adapt the guidelines to their own particular setting. Teaching and training are essential components of service and workforce development (NHS plan 1999). A commitment to training for effective use of the guidelines is essential to ensure an effective service. A citywide approach to training would further reduce replication of effort and ensure a seamless approach to falls prevention citywide.

7. Recommendations of the ER&GD Group

In the implementation of the guidelines: -

- 1) **The guidelines** are adopted citywide
- 2) **Identify / Fund** a co-ordinator, in conjunction with the already established ER&GD Group, to:
 - a) **Find / Develop** an appropriate training package using the guidelines as a basis that can be disseminated to and used by organisations citywide
 - b) **Support** organisations in their development of action plans to implement the falls prevention guidelines and service provision.
 - c) **Develop** a citywide falls prevention health promotion strategy to raise public awareness, encouraging earlier identification of and reduction of risk.
- 3) **Training/skills** needs analysis to be performed by each organisation to determine which level of **training** is required for each member of staff.
- 4) **Identify/employ appropriate** personnel within each organisation to carry out and/or implement training, *Members of the guidelines development group highlighted that there is a service and cost implication when removing existing staff from their duties both to train and undertake training so organisations need to identify/bid for adequate funds for training purposes.*
- 5) **Funding** is identified to support organisations in their implementation of the guidelines particularly in the area of training.
- 6) **Using** the already established ER&GD Group to establish a citywide falls prevention network. The ER&DG Group, with funding, could act as a resource to the City, highlighting advances in evidence and using the group as a forum, review the evidence and effect changes in the guidelines as appropriate
- 7) And finally **Validate the Screening Tool**

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9. APPENDICES

APPENDIX ONE

~ The Aims & Objectives of the Project

The Aim and Objectives of the Project

The aim of this project is to reduce the incidence of “falls” and subsequent injuries by developing guidelines specifically for the care of older adults who are at risk of falling. The guidelines will include:

- the early identification of those at risk
- implementation of evidence-based prevention measures (including the intrinsic and extrinsic factors)
- referral to appropriate services

The Project objectives are to:

- Identify and describe existing practice, initiatives and services, for example, “falls clinics, prevention strategies and staff awareness through targeted training programmes
- Identify referral practices and criteria for receiving services
- Identify assessment techniques / tools for identifying those at risk
- Establish a city-wide network for “falls”
- Raise public awareness through the media
- To agree preventative measures to reduce and manage risk, based on the available evidence
- Agree referral routes and criteria
- Agree outcome measures for “falls” prevention
- Introduce targeted training of identified groups of professionals (health and social services), formal and informal carers, and voluntary sector workers.
- Identify stages of “falls” prevention and the appropriate intervention in each of the stages, leading to the development of guidelines for “falls” prevention.

Measures of Success

The benefits of this project will be measured by:

- The reduction of incidence of hospital admissions due to “falls” among older adults
- the reduction in the incidence of injury due to “falls”.
- the development of guidelines specifically for care of older adults at risk of “falling”
- an increased awareness of “falls” prevention among healthcare and other professionals.

APPENDIX TWO

~ Terms of Reference of the Evidence Review & Guidelines Development Group

BIRMINGHAM SPECIALIST COMMUNITY NHS TRUST**CITY WIDE FALLS PROJECT STEERING GROUP****1. BACKGROUND**

Over a number of years falls have been highlighted in various accident prevention guidelines as being a major problem for Health and Social Services with both financial and service implications. Carer's organizations have also highlighted the growing dependency of older adults who fall. Injury itself is not always the major influence in increased care needs. Loss of confidence and a diminishing circle of activity and life are also factors. The National Service Framework guidelines for older adults, due to be published in the autumn, will highlight falls prevention as a major area for improvement.

2. INTRODUCTION

A number of falls and accident prevention initiatives currently take place across the city. These initiatives whilst very good, do not give equity of service to all. The Health Authority has therefore commissioned audit for these initiatives. The audit will produce guidelines that will assist in providing an integrated service across many professional / voluntary sector groups and health trusts across the whole city. Funding has been agreed for a term of one year. A Steering Group has been formed from interested parties and a nurse has been seconded to the Clinical Audit department as a project officer, for the post of City Wide Falls Project Co-ordinator.

3. MEMBERSHIP J McCoy, L Tomkins, D Harrison, L Tye, D Szrejder and J Dadd

4. FREQUENCY OF MEETINGS Quarterly

5. QUORUM 4

6. TERMS OF REFERENCE FOR THE STEERING GROUP

- a) Ensure delivery of project
- b) Monitor and review budget
- c) Identify objectives.
- d) Monitor progress against agreed time plan.
- e) Identify and implement alternative strategy to cope with problems.
- f) Deliver final report to the Health Authority

7. RESPONSIBILITIES OF GROUP MEMBERS

- a) Attend quarterly meetings
- b) Support project officer by
 - 1) Providing resources in terms of experience and knowledge
 - 2) Assisting in the identification of personnel, development and facilitation of any sub groups formed.
 - 3) Promoting the project and encouraging / enabling others to participate
- c) Identify and provide opportunities for additional finances where agreed.
- d) Play an active role in presenting and promoting the pilot & completed guidelines
- e) Report to the Birmingham Effectiveness Group (BEG).

APPENDIX THREE

~ The Guidelines

APPENDIX FOUR

~ The A4 Summary of Guidelines