THE CHARTERED SOCIETY OF PHYSIOTHERAPY



guideline for the

Audit pack

collaborative, rehabilitative

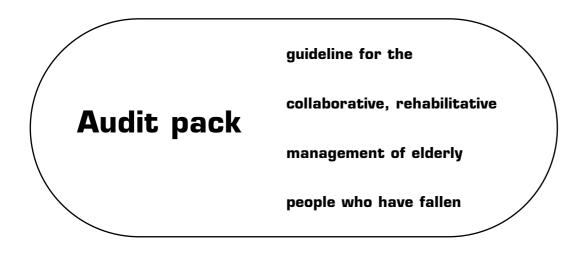
management of elderly

people who have fallen



COLLEGE OF OCCUPATIONAL THERAPISTS





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Foreword

Falls are a major cause of disability and the leading cause of mortality due to injury in older people aged over 75 in the UK (Health Education Authority, 1999).

Even minor falls can have significant consequences for an older person, such as an on-going fear of falling and loss of confidence in moving around safely, or a reduction in mobility which can lead to social isolation and depression. All these can impact on the independence and control an older person has over their life. In addition, osteoporosis, a condition characterised by a reduction in bone mass and density increases the risk of fracture when an older person falls.

Many older people will need rehabilitation after a fall whether they have been treated in hospital or remain at home. Exercise therapy will form a significant component of the rehabilitation programme, aiming to prevent further falls and fractures by improving muscle strength, exercise tolerance and balance, thereby reducing the risk of falling (Simpson et al, 1998; CSP, 1999)

Standard 6 of the National Service Framework for Older People (Department of Health, 2001) states:

- 'The NHS, working in partnership with councils, takes action to prevent falls and reduce resultant fractures or other injuries in their populations of older people.
- Older people who have fallen receive effective treatment and rehabilitation and, with their carers, receive advice on prevention through a specialised falls service.'

This audit pack will form an important resource for trusts, with which to evaluate their conformance with the National Service Framework. It should be used by therapists and others working with older people to assure the quality and effectiveness of their services and contribute to the reduction of falls and subsequent disability among older people.

Professor Ian Philp National Director of Older People's Services Professor of Health Care for Elderly People, University of Sheffield

Introduction

The audit tool presented in this document was originally developed for the National Sentinel Audit for the Collaborative, Rehabilitative Management of Elderly People who have Fallen, which took place in 1998/9 (Chartered Society of Physiotherapy & College of Occupational Therapists, 2000). Its refinement into the format in this document, and its wide dissemination to facilitate further, local audit, was a recommendation of the national audit. Amendments were made following consultation with audit rofessionals and the original audit project working group, comprising physiotherapists and occupational therapists involved with the management of elderly people who have fallen. A subsequent pilot of the refined tool took place on three sites.

The purpose of this audit tool is to assist local services compare clinical practice with the clinical management as set out in the Guideline for the Collaborative, Rehabilitative Management of Elderly People who have Fallen (Simpson et al, 1998a, Simpson et al, 1998b). This guideline was developed by members of Clinical Interest Groups with a special interest in elderly people, Chartered Physiotherapists working with Elderly People (AGILE), the Association of Chartered Physiotherapists in the Community (ACPC) and Occupational Therapists with Elderly People (OCTEP). The recommendations in the guideline are based on the best available evidence at the time it was developed.

The information in this pack addresses the following recommendations from the national falls audit, which were identified as the responsibility of national professional organisations:

- Review the audit tool in the light of feedback received during the project.
- Make available for use a nationally developed audit tool as a basis for carrying out regular local re-audits.
- Publish and disseminate the revised tool to all trusts in the UK.
- Develop, disseminate and implement an agreed framework for the assessment of elderly people who have fallen.
- Develop, disseminate and implement a minimum data set, which reflects the physiotherapy and occupational therapy components of the guideline.

It is hoped that the use of the material in this pack will facilitate the implementation of a number of further recommendations, which require local action:

- Standardised tests and outcome measures should be used routinely in the assessment of elderly people who have fallen.
- Improve communication between members of the care team who are involved with the rehabilitation of an elderly person who has fallen.
- Improve the skills and knowledge of therapists in successful change management.
- Involve elderly people who have fallen in the development of best practice in physiotherapy and occupational therapy. Guidance on how to achieve this can be found in the publication 'Involving older people in local audit activity' (Kelson, 1999).

Definition of a fall

For the purpose of this audit pack a fall is defined as:

When a subject unintentionally comes to rest on the ground or at some other lower level, not as a result of a major intrinsic event (e.g. stroke, syncope). (Adapted from Tinetti et al, 1988)

The audit pack

This pack consists of a number of documents.

- The Guideline for the Collaborative, Rehabilitative Management of Elderly People who have Fallen.
- Framework for the assessment of elderly people who have fallen.
- Outcome measures for the evaluation of the rehabilitative management of elderly people who have fallen.
- Guidance on carrying out the audit.
- Guidance on completing the audit tool.
- Audit Tool for the Guideline for the Collaborative, Rehabilitative Management of Elderly People who have Fallen.
- Glossary and Bibliography.

All of the documents may be freely photocopied.

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Guideline for the collaborative, rehabilitative management of elderly people who have fallen

Chartered Physiotherapists working with Elderly People (AGILE) Association of Chartered Physiotherapists in the Community (ACPC) Occupational Therapists with Elderly People (OCTEP)

This guideline and its supporting evidence is intended to assist physiotherapists, occupational therapists and nurses working in the community, acute care or long term care in making decisions about appropriate treatment for elderly people who have fallen, especially frail, very old people who feel at risk of falling again. Frail elders are in danger of having to endure a 'long lie' on the floor i.e. one hour or more, with the attendant risks of pressure sores, hypothermia and bronchopneumonia (Isaacs, 1992). This guideline is also applicable to all elderly people who, although they may not have fallen i.e.unintentionally coming to rest on the ground or at some other lower level (Tinetti et al, 1988), consider themselves to be at risk of doing so.

It has been constructed by rehabilitation professionals and has been widely circulated for comment and revision. It will be reviewed, and if necessary, revised regularly. Responsibility for initiating this process will rest with the Research Officers of AGILE, ACPC and OCTEP.

Good practice points

- A physician should examine a faller to identify any underlying medical reasons.
- A plan of intervention is agreed with the elderly person (and when relevant his/her carer).
- Establish baselines of appropriate measurements about the elderly person's pre-intervention state against which his/her post-intervention state can be compared. From this the effectiveness of the interventions can be estimated, taking account of any plausible, alternative explanations for any change observed.
- Establish the extent to which the elderly person (and his/her carer) are likely to be able to cooperate with an intervention programme in terms of memory ability and willingness to participate.
- Note any relevant signs or symptoms of contributory factors which may have led to the fall, that need to be brought to the attention of the elderly person's doctor.

Aim 1

To improve elderly peoples' ability to withstand threats to their balance.

Assess to identify the impairments, likely to respond to rehabilitative intervention, that probably contributed to the person's previous falls or might lead to further falls.

Intervene to increase the elderly person's stability during standing, transferring, walking and other functional movement, e.g. by

- a) balance training
- b) strengthening the muscles around the hip, knee and ankle
- c) increasing the flexibility of the trunk and lower limb
- d) providing mobility aids and appliances if really necessary.

Supporting evidence ***

'There is some evidence to suggest that exercise, such as balance training, is effective in reducing the risk of falls in older people' (Effective Health Care Bulletin, 1996).

Recent community-based studies further support this conclusion (Shumway-Cook et al, 1997; McMurdo et al, 1997; Campbell et al, 1997).

Aim 2

To improve the safety of elderly peoples' surroundings.

Assess to identify any environmental hazards, that contributed to previous falls and that might lead to further falls (including clothing and footwear).

Intervene by

- a) with the person's consent, removing, replacing or modifying any hazards
- b) teaching the person to be aware of hazards and how to avoid them.

Supporting evidence ***

'Home visits and surveillance to assess and, where appropriate, modify environmental and personal risk factors can be effective in reducing falls. This can be carried out by nurses, health visitors, occupational therapists or trained volunteers.'

'Older peoples' footwear may be important in affecting their balance and stability.' (Effective Health Care Bulletin, 1996).

Aim 3

To prevent elderly people suffering the consequences of a long lie.

Assess to establish how the elderly person (and his/her carer) coped following previous fall and if they have any strategies for coping following a fall in the future.

Intervene by teaching the person how to

- a) get up from the floor (if this is possible)
- b) summon help
- c) move about, keep warm etc. while on the floor.

Supporting evidence *

There has been very little research in this area. In very few cases only is it possible to teach elderly people to get up from the floor using the traditional method (Simpson and Mandelstam, 1995). However, a small, non-randomised trial showed that success is more likely using the backward chaining method (Reece and Simpson, 1996).

Aim 4

To optimise elderly peoples' confidence and, whenever relevant, their carer's confidence, in their ability to move about as safely and as independently as possible.

Assess to identify any psychological consequences of the fall that might lead to self-imposed restriction of activity.

Intervene to help the elderly person regain confidence in his/her balance ability and functional competence, by encouraging the person to cope successfully with increasingly severe threats to his/her balance and increasingly demanding functional tasks.

Supporting evidence **

Fears and concerns about falling are highly correlated with postural instability among elderly inpatients (Simpson et al, 1997).

Elderly participants in a controlled trial who received balance and transfer training, leg muscle strengthening and review of their medications increased their balance self-confidence a small but statistically significant amount compared with the control group who received friendly visits (Tinetti et al, 1994).

The evidence is weighted as follows:

- *** Generally consistent findings in a majority of acceptable studies.
- ** Either based on a single acceptable study or a weak or inconsistent finding in some of multiple acceptable studies.
- Limited scientific evidence available, which does not meet all the criteria of 'acceptable' studies.

Based on ratings used in:

Clinical Guidelines for the Management of Acute Low Back Pain, Royal College of General Practitioners, London.

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Framework for the assessment of elderly people who have fallen

Introduction

This framework for assessment has been developed from the Guideline for the Collaborative, Rehabilitative Management of Elderly People who have Fallen (Section II). It is designed to be used as a prompt or checklist to guide physiotherapists and occupational therapists during the assessment of elderly people who have fallen. Following this framework will improve compliance with the guideline and therefore subsequent audit results.

The findings of each of the items listed below should be documented in the record.

Pre-assessment considerations

- Consider the inclusion of outcome measures as part of the assessment process (see Section IV)
- Ensure the elderly person who has fallen has been examined by a doctor.

Securing the involvement of the elderly person who has fallen

- The treatment plan is discussed and agreed with the elderly person
- The treatment plan is discussed with carers when appropriate.

Assessment process

- History of previous falls
- Reason for the most recent fall
- The elderly person's fear of future falls
- The person's confidence in their ability to move about safely
- The carer's confidence in the person's future safety
- Strategies to get up from the floor after a fall
- Strategies to summon help after a fall
- Strategies to move about the floor after a fall
- Strategies to keep warm while on the floor after a fall
- Balance
- Range of movement
- Lower limb muscle weakness hip, knee, ankle
- Lower limb flexibility
- Trunk weakness (flexibility)
- Walking ability (gait)
- Mobility
- Transfers
- Personal activities of daily living
- Domestic activities of daily living
- Clothing hazards
- Footwear hazards
- Mobility aids and appliances
- Home visit assessment
- Assessment of home hazards
- Person's awareness of home hazards and how to avoid them

Where problems are identified, it should be clearly stated in the record how these will be managed, either by the therapist or by a referral to another agency.

Outcome measures for the evaluation of the collaborative, rehabilitative management of elderly people who have fallen

Introduction

The Guideline for the Collaborative, Rehabilitative Management of Elderly People who have Fallen states, as a good practice point, 'establish baselines of appropriate measurements about the elderly person's pre-intervention state against which his/her post-intervention state can be compared'. From this information the effectiveness of the intervention can be estimated, 'taking account of any plausible, alternative explanations for any change observed'.

A recent national audit of the use of these guidelines found that 63% of records had no evidence of any use of a measure (Chartered Society of Physiotherapy & College of Occupational Therapists, 2000). Reasons why measures were not used more are not explored in detail in the audit report. However there have been other attempts to explain their lack of use in other circumstances (e.g. Chesson, 1996; Cole, 1994). Two barriers to wider use of measures are

- Lack of knowledge of measures that are available (Cole, 1994)
- Lack of easy access to them (Greenhalgh et al, 1999).

One recommendation from the audit was for the Chartered Society of Physiotherapy (CSP) and College of Occupational Therapists (COT) to suggest measures for use. A CSP/COT working party has had the opportunity to review the range of measures available and this Section seeks to answer this call. It aims to facilitate the selection of appropriate measures for use by therapists in their rehabilitative management of older people who have fallen. Ideally the choice of a measure should be evidence – led through an appraisal of information about the measure, match the aims of intervention with individual patients, and be collected in a rigorous manner.

What measures have been published?

An internet database search of Pubmed, the online version of Medline (1966–2000) was performed. The search terms were 'outcome and process, falls, risk, measures, scale'. A reiterative search to 'related articles' in Pubmed from the references found was also undertaken. A subsequent search of AMED and CINAHL was performed using the title of the measure as a keyword to look for further studies of the measure.

Inclusion criteria

The criteria for inclusion were:

- a) The target population for the measure included fallers and older people
- b) The measure included at least one of the following domains:
 - Falls
 - Physical function
 - Performance
 - Gait
 - Balance
- c) The measures were at the disability level i.e. as defined by the World Health Organisation (WHO, 1980).

Generic measures were excluded, as were measures published in a non-English language journal.

Appraisal of measures

20 measures met the inclusion criteria and were assessed in accordance with the criteria outlined in Table I. A brief descriptive summary of each measure is given on pages 18–19 and details of the results of the appraisal can be found in Table 3. Interested readers may wish to consult more detailed texts for additional information (See Bibliography).

Table 1 Criteria used to assess outcome measures (from Fitzpatrick et al, 1998)

Property to consider	How is this property appraised?
Appropriateness (Is the content of the measure appropriate to the context of the intervention?)	Opinion: therapists should decide if the contents of the measure match the aims of their intervention
Reliability (Does the measure produce results that are reproducible and internally consistent?)	Reproducibility: test-retest reliability: (e.g. intraclass correlation coefficient) Internal consistency: e.g. Cronbach's alpha
Validity (Does the measure record what it claims to record?) i. Content validity	Opinion: e.g. by determining how rigorous the developers were in involving clinicians, and patients in selecting items
Validity ii. Concurrent (include construct and face validity)	e.g. correlation with a 'gold standard' measure, factor analysis
Responsiveness (Does the measure detect changes over time that matter to the patient?)	e.g. effect size, standardised response mean
Interpretability (How interpretable are the scores?)	Is there information about what the scores mean? e.g. minimal clinically important difference (MCID)
Acceptability (Is the measure acceptable to the patients?)	Opinion: therapists can decide this for local use e.g. completion rates, time to complete, language, cultural applicability
Feasibility (How easy is the measure to administer and process)	Opinion: therapists should decide this for local use

Discussion

The range of measures published, and the varying aims and levels of information on each make it inappropriate to stipulate one measure as being superior to all others.

The nature of the topic, location for treatment, variability of patients and the aim of the intervention also mean making specific recommendations unrealistic. Therapists should therefore retain the freedom to choose measures most appropriate to their situation, according to the aims of intervention, treatment location, local agreements, and acceptability to patients.

It may be useful to group the measures into sections or domains to permit a more readily digestible selection from the range of measures available (See Table 2). By providing the best available evidence to support each measure, clinicians can then make more informed choices. It should be recognized when interpreting this table, that some measures overlap domains, and domain names are given for the purpose of simplicity.

Table 2 Linkage of measures with broad domain headings

Domain name	Outcome measure
Mental status	Abbreviated Mental Test
ADL/Mobility/Independence	Barthel Index Elderly Mobility Scale Rivermead Mobility Index Timed Sit to Stand
Balance	180° turn Activity-specific Balance Confidence Scale Berg Balance Scale Fast Evaluation of Mobility, Balance, and Fear Functional Reach Performance Orientated Assessment of Mobility Timed Unsupported Steady Standing Timed Up and Go
Walking	Dynamic Gait Index Modified Gait Abnormality Rating Scale Timed walk
Confidence	CONFbal Scale Falls Efficacy Scale
Hazard/Risk screening	Home Falls and Accident Screening Tool Westmead Home Safety Assessment

IV

Conclusion

This Section aims to provide evidence and information on the range of measures that have been published to help clinicians evaluate the outcomes of their practice. There are many measures available. Not all measures have had complete studies performed to assess their quality, and as such there is no one perfect measure to recommend. A range of measures are described, information given about how to obtain each measure and a brief appraisal provided of each one. There are sufficient measures available that provide therapists with the opportunity to record changes in patient performance which will contribute to the evaluation of the effectiveness of intervention. Decisions about which measure is appropriate will depend on the aims of the

intervention, the location in which the patient is seen and how the information is to be used.

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Description of measures

Mental status

Abbreviated Mental Test (AMT)

Staff-completed 10-item test of memory and orientation. Devised for use with in-patient older people.

ADL/Mobility/Independence

Barthel Index

Staff-completed 10-item activity of daily living assessment. Values assigned to each item based on time and amount of physical assistance required to perform the activity. Devised for use with older people.

Elderly Mobility Scale (EMS)

Staff-completed ordinal scale measuring locomotion, balance (functional reach) and key position changes (sit to stand, lie to sit, sit to lie, stand with/without support) as prerequisites to more complex activities of daily living. Devised for use with older people.

Rivermead Mobility Index (RMI)

Staff-completed 14-item questionnaire measuring mobility disability after head injury and stroke. Activities scored range from turning over in bed to running and one direct observation of standing for 10 seconds. Devised for use with patients following head injury and stroke.

Timed sit to stand

Staff-scored, patient-completed timed test of moving from sitting to standing, derived from a longer measure, the Motor Assessment Scale (Carr and Shepherd, 1985), which was devised for use following stroke.

Balance

180° turn

Staff-rated, patient-completed test of patient's ability to turn through 180 degrees. Devised for use with an older population.

Activity-specific Balance Confidence Scale (ABC)

Patient-completed 16-item measure of confidence in perceived need for walking aid and personal assistance to ambulate indoors / outdoors. Devised for use with older people in rehabilitation and prevention of falls.

Berg Balance Scale

Staff-completed 14-item assessment scale of ability to maintain balance, either statically or while performing various functional movements, to help make decisions about the patient's mobility and level of care needed. Devised for use with older people.

Fast Evaluation of Mobility, Balance, and Fear (FEMBAF)

Staff-completed screening tool integrating a 22-item risk of falling assessment, 18-item physical performance evaluation, and a one-item score of the patient's response to mobility performance. Devised for use with older people.

Functional Reach

Staff-completed measure for detecting dynamic balance impairment and for change in performance over time. Assesses the difference between arm's length and maximal forward reach, using a fixed base of support. Devised for use with older people.

Performance Orientated Assessment of Mobility (POAM)

Staff-completed 13-item measure of balance and gait. Devised for use with older people.

Timed Unsupported Steady Standing (TUSS)

Staff-scored, patient-completed measure of a patient's ability to stand steadily whilst unsupported. Devised for use with older people.

Timed Up And Go (TUAG)

Staff-rated, patient-completed functional test of balance in moving from sitting to standing. Devised for use with older people.

Walking

Dynamic Gait Index

Staff-rated, patient-completed eight-item evaluation of patient's ability to modify their gait in response to changing task demands. Items include: gait on level surface, change in gait speed, gait with horizontal head turns, gait with vertical head turns, gait and pivot turns, step over obstacles, step around obstacles, steps. Devised for use with older people.

Modified Gait Abnormality Rating Scale (GARS-M)

Staff-rated, patient-completed seven-item evaluation of gait, including arrhythmicity of stepping and arm movements, guardedness, staggering, foot contact, hip range of motion, shoulder extension and arm-heel-strike synchrony. Devised for use with community-dwelling frail older adults.

Timed walk

Staff-completed measurement of gait, either recording the time taken to cover a set distance (e.g. 5/10/20/40 metres) or distance covered in a set time (e.g. 2/6/12 minutes) with the patient walking at their preferred speed, using their preferred walking aid. Devised for people of any age.

Confidence

CONFbal Scale

A patient-completed 10-question measure of how confident a patient feels about maintaining their balance during various everyday activities. Designed for use with older people.

Falls Efficacy Scale (FES)

Staff-completed 10-item scale related to confidence in accomplishing activities without falling. Devised for use with older people.

Hazard/Risk screening

Home Falls and Accident Screening Tool (HOME FAST)

Staff-completed 25-item screening tool of safety at home. Devised for use with older population in rural and urban settings.

Westmead Home Safety Assessment

Staff-completed assessment tool for identifying fall hazards in the home. Six domains (external/ internal trafficways, seating, bedroom, footwear, and medication management) include 72 potential hazards for the therapist to identify. Devised for use with older people.

Table 3 Appraisal of measures

Appropriateness	Reliability	Validity i. Content validity	Validity ii. Concurrent validity	
Yes	Yes, See ²⁸	See ^{38, 39, 40}	No information found	
Yes – for in-patients/ institutionalised older people	Yes. See ^{10, 14, 17, 20, 22, 23} , but also see ²¹ . Intra-rater reliability r=0.95–1.00; inter-rater reliability r=0.91–1.00	See ^{30, 18, 19}	See 66	
Yes	Yes. Mann Whitney =196 ¹	See ^{1, 29}	Valid for mobilty assessment of older people ^{1, 29}	
Developed for use with people following stroke/head injury of any age	Yes. See ³	See ³¹	No information found	
Yes	Yes, See ⁶¹	See ^{59. 61}	See 61	
Yes ^{43, 48}	Yes. See ⁴⁸	See ^{43, 48}	See ^{43, 48}	
Yes	Yes, reliability r=0.92, Cronbach's alpha =0.96 ¹¹	Based on interviews with patients and healthcare professionals ¹¹	See ¹¹	
Yes	Yes. Interrater reliability intraclass correlation coefficients 0.98; intrarater reliability intraclass correlation coefficient 0.99 ⁴ . Internal consistency: Cronbach's alpha 0.96 ^{68,46}	See ^{4, 32} . Based on interviews with patients and healthcare professionals.	Correlation 0.84 with Barthel Index ³³ ; see also ⁶⁸	
Yes ⁴⁵	Yes, determination of risk factors: mean kappa=0.95; task completion: mean kappa=0.96 ⁴⁵	No information found	No information found	
	Yes Yes - for in-patients/ institutionalised older people Yes Developed for use with people following stroke/head injury of any age Yes Yes Yes Yes	YesYes, See 28Yes - for in-patients/ institutionalised older peopleYes. See 10, 14, 17, 20, 22, 23, but also see 21. Intra-rater reliability r=0.95-1.00; inter-rater relos5-1.00; inter-rater reliability r=0.91-1.00YesYes. Mann Whitney =1961Developed for use with people following stroke/head injury of any ageYes. See 3YesYes. See 61YesYes. See 61YesYes. See 48YesYes. See 48YesYes. See 48YesYes. See 48YesYes. See 48YesYes reliability r=0.92, Cronbach's alpha =0.9611YesYes. Interrater reliability intraclass correlation coefficients 0.98; intrarater reliability intraclass correlation coefficients 0.99.'. Internater onsitency: Cronbach's alpha 0.96 68.46Yes 45Yes, determination of risk factors: mean kappa=0.95; task completion: mean	NumberImage: Content validityYesYes, See ²⁸ See ^{38, 39, 40} YesSee ^{10, 14, 17, 20, 22, 23} but also see ²¹ . Intra-rate reliability r=0.95-1.00; inter-rater reliability r=0.91-1.00See ^{30, 18, 19} YesYes. See ^{10, 14, 17, 20, 22, 23} but also see ²¹ . Intra-rater reliability r=0.95-1.00; inter-rater reliability r=0.91-1.00See ^{30, 18, 19} YesYes. See ^{10, 14, 17, 20, 22, 23} but also see ²¹ . Intra-rater reliability r=0.95-1.00; inter-rater reliability r=0.91-1.00See ^{30, 18, 19} YesYes. Mann Whitney stroke/head injury of any ageSee ³¹ See ³¹ YesYes, See ⁶¹ See ⁶³ See ^{43, 48} YesYes, See ⁶¹ See ^{43, 48} YesYes, reliability r=0.92, Cronbach's alpha =0.96 ¹¹ See ^{43, 48} YesYes, reliability intraclass correlation coefficienty professionals ¹¹ See ^{4, 32} . Based on interviews with patients and healthcare professionals ¹¹ Yes ⁴³ Yes, Interrater reliability intraclass correlation coefficienty onsistency: Cronbach's ¹¹ See ^{4, 32} . Based on interviews with patients and healthcare professionals.Yes ⁴⁴ Yes, determination of risk factors: mean kappa=0.95; task completion: meanNo information found	IndianaI Content validityI. Concernent validityYesYes, See 28See 28, 38, 40No information foundYes - for in-patients/ institutionalised older peopleYes, See 10, 14, 17, 20, 22, 28 intra-rater reliability re0.95-1.00; inter-rater reliability re0.95-1.00; inter-rater reliability re0.95 recer reliability re0.95 recer recer recer reliability re0.95 recer <br< td=""></br<>

IV

Responsiveness	Interpretability	Acceptability	Feasibility	Distributer
See 28	No information found	Time to complete measure: 10 mins	Training: None Equipment: None Cost: Nil	Full questionnaire available as appendix to ^s
See 64, 65	No MCID scores found	Time to complete measure: 5 mins	Training: None Equipment: None Cost: Nil	Full questionnaire available as appendix to ^{15, 16}
No information found	No MCID scores found; no predictive validity for discharge destination	Acceptable to patients', Time to complete measure: 5 mins	Training: None Equipment: Metre stick Cost: Nil	Full questionnaire available in ¹
No information found	No MCID scores found	Time to complete measure: up to 10 mins	Training: None Equipment: None Cost: Nil	See ^{3, 31}
No information found	No information found	Time to complete measure: Dependent on patient	Training: None Equipment: Stopwatch and chair required Cost: Nil	Contained within full questionnaire available as appendix to ⁶¹
No information found	See ⁴⁸	Time to complete measure: Not given, approx. 5 mins	Training: None Equipment: Chair, handholds Cost: Nil	Measure available from CSP: millerc@csphysio.org.uk
Described in 11	No information found	Acceptable to patients ¹¹ , Time to complete measure: 5 mins	Training: None Equipment: None Cost: Nil	Full questionnaire available as appendix to ". Copies available from Prof A Myers, Dept of Health Studies and Gerontology, University of Waterloo, Waterloo, Ontario, Canada, N2L 3GI "
No information found	Berg suggests from clinical experience a score of 45/56 shows independent safe ambulation, and less than 45 predictive of future falls ³²	Time to complete measure: 10–15 mins	Training: None Equipment: Stool, stopwatch, ruler Cost: Nil	Available from webpage: www.chcr.brown.edu/ BALANCE.HTM#top
No information found	No information found	Acceptable to patients ⁴⁵ , Time to complete measure: 10 mins	Training: None Equipment: None Cost: Nil	Full questionnaire available as appendix to ⁴⁵

Table 3 Appraisal of measures

Outcome measure	Appropriateness	Reliability	Validity i. Content validity	Validity ii. Concurrent validity
Functional Reach ⁶	Yes	Yes. See ²⁴ . Interclass correlation coefficient =0.98 ; intratest ICC=0.924 ⁶	See ^{52, 69.70}	Recently challenged ⁵³
Performance Orientated Assessment of Mobility ⁴²	Yes – predictor of falls: see ^{49, 50, 51}	Yes. Interrater test- retest reliability 0.95 ⁶⁷	See ^{49, 50, 51}	See ^{49, 50, 51}
Timed Unsupported Steady Standing ⁶⁰	Yes ⁴⁷	Yes. See 60	See ⁴⁷ ; validity implied as component of POAM, RMI, and BBS	See ⁴⁴ ; validity implied as component of POAM, RMI, and BBS
Timed Up and Go ⁹	Yes ^{36, 37}	Yes. Interrater/intra rater reliability: intra class correlation coefficients 0.99 ^{34, 35,54}	See ³⁵	Comparison with Berg Balance Scale Pearson r=-0.81 ³⁵
Dynamic Gait Index ⁶³	Yes	See ⁶³	No information available	No information available
Modified Gait Abnormality Rating Scale ¹²	Yes	Yes. Intrarater reliability: Kappa coefficient 0.676; interrater reliability: 0.417–0.457 ¹²	See ¹²	Concurrent validity: Spearman rank-order correlation coefficient with stride length r = -0.754, with walking speed $r = -0679^{12}$
Timed Walk ⁷	Yes ^{62, 41}	Yes, See ^{25, 27}	See ²⁷	See ²⁶
CONFbal Scale ¹³	Yes	ICC Pearson's r=0.96, Cronbach's alpha=0.91	Correlated with other new measures, see ¹³	No information available
Falls Efficacy Scale ⁸	Yes	Moderate. Test-retest reliability: Pearson's correlation 0.71 ⁸	Based on interviews with patients and healthcare professionals	No information found
Home Falls and Accident Screening Tool ⁷²	Yes	No information available	Described in 67	Not yet investigated
Westmead Home Safety Assessment ⁵⁷	Yes	See 57, 58	see ^{55, 57}	No information available

IV

Responsiveness	Interpretability	Acceptability	Feasibility	Distributer
No information found	Norms: age 41–69 score FR 13–15''; age 70–87 score FR 10–13'' ⁶	Time to complete measure: Not given, approx. 5 mins	Training: None Equipment: Yardstick, tape measure, platform showing foot position Cost: Nil	Full questionnaire available as appendix to ⁶
No information found	No MCID scores found	Time to complete measure: 15 mins – both subscales	Training: None Equipment: Chair, pencil Cost: Nil	Full questionnaire available as appendix to ⁴²
No information found	No information found	Time to complete measure: Maximum 1min	Training: None Equipment: Chair, table, stopwatch Cost: Nil	Measure available from CSP: millerc@csphysio.org.uk
No information found	Completing test in less than 20 secs suggests greater independence with transfers, and necessary gait speed for community ambulation	Time to complete measure: Dependent on patient speed	Training: None Equipment: Chair, measuring tape, video camera (to record each performance), stopwatch (if using timed scores) Cost: Nil	Full measure in ⁹
Not yet investigated	No information found	Time to complete measure: 10 mins	Training: None Equipment: None Cost: Nil	Full questionnaire available from ⁶³
Not yet investigated	No information found	Acceptable to patients ¹² , Time to complete measure: 1–3 mins	Training: None Equipment: None Cost: Nil	Full questionnaire available as appendix to ¹²
No information found	No information found	Time to complete measure: Dependent on test chosen	Training: None Equipment: Stopwatch Cost: Nil	Not applicable
Not yet investigated	Not yet investigated	Acceptable to patients ¹³ . Time to complete measure: 10 mins	Training: None Equipment: None Cost: Nil	Dr J. Simpson Faulty of Health and Social Care Sciences, St George's Hospital Medical School, London, SW17 ORE
No information found	Total scores increase progressively as subjects report an increase in fear of falling ⁸	Time to complete measure: 10 mins	Training: None Equipment: None Cost: Nil	Full questionnaire available as appendix to ⁸ . Also available from CSP: millerc@csphysio.org.uk
Not yet investigated	No information found	Time to complete measure: Not described	Training: Yes Equipment: None Cost: Nil	Full questionnaire available as appendix to ⁶⁷
Not yet investigated	No information found	Time to complete measure: Not described	Training: None Equipment: None Cost: Nil	Full questionnaire available from 56

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Guidance on carrying out the audit

Introduction

The audit tool contained in this pack enables you to measure compliance with the recommendations in the Guideline for the Collaborative, Rehabilitative Management of Elderly People who have Fallen through the audit of patient records. However, clinical audit is a cyclical process that does not end once the data has been collected. This guidance has been written to reflect the nature of audit as a system for continous improvement.

The audit process has been broken down into a number of sections as follows:

Preparation

Identify a project co-ordinator

- Identify a project team
- Identify a local auditor

Stages of the audit:

- 1. Define the timescale
- 2. Agree inclusion criteria
- 3. Agree the sample size
- 4. Agree the method of sampling
- 5. Brief project participants

Data collection

- 6. Collect the records
- 7. Collect data from the records
- 8. Analyse the data review and improve practice

Review and improve practice

- 9. Present and discuss the results
- 10. Formulate and agree recommendations
- 11. Implement the recommendations
- 12. Re-audit
- 13. Feedback.

Identify a project coordinator

A project coordinator should be identified to manage the project and to lead a small project team (see below) which will provide advice at each of the project stages.

The project coordinator may be a member of the audit staff or a therapist. If a therapist, this may be a member of staff who is undertaking the role of project coordinator as part of their annual objectives or continuing professional development.

The role of the project coordinator in association with the project team is to:

- Manage the project: ensure completion of each stage outlined below so that the audit cycle is completed, including the implementation of recommendations and re-audit.
- Formulate the project plan: consider each stage of the project, involving/informing the relevant people in the project.
- Provide a link between the project and the audit department.
- Maintain the momentum of, and interest in, the project.

Identify a project team

The project team should include the following:

- a physiotherapist and an occupational therapist working with elderly people
- a manager to represent physiotherapists and occupational therapists working with the target group
- the local auditor
- a member of the clinical audit department when the auditor is a member of the therapy staff. This may be known as a clinical audit, clinical governance or clinical effectiveness department, dependant on local circumstances. This document refers to clinical audit department as an allencompassing term.

The service should consider the involvement of an older person in the project team/audit process. Guidance on this can be found in 'A guide to involving older people in local clinical audit activity' (Kelson, 1999).

It is important that the local audit department is informed of the project as early as possible and has the opportunity to include this within their work plan even if they are not directly involved with it. They may be able to offer advice on a range of issues such as sampling or analysing the data.

Identify a local auditor

The project coordinator should identify a local auditor. The two will work closely throughout the project. Where possible, to avoid bias and maintain objectivity, the local auditor should be a member of the clinical audit department. Where this is not possible the local auditor may be a member of the therapy staff who did not complete the records and who is not directly involved with service delivery. The line manager of the therapy services should not audit the records.

The role of the local auditor is to:

- Take a sample of the records
- Collect the data from the records using the audit form
- Analyse the data
- Liaise with the audit department on each of the above if they are not a member of the audit department.

Stages of the audit

Each of the following stages should be included in the project plan developed by the project coordinator prior to formal commencement of the project.

Stage 1. Define the timescale

- Agree a timescale, start and finish dates for the identification of records and for the project overall.
- The records of all patients discharged within the timescale set should be included in the audit.
- A minimum period of three months for the inclusion of records for data collection is recommended.

Stage 2. Agree inclusion criteria

Recommended inclusion criteria for the audit:

- People of 65 years and over who have fallen (see definition of a fall in Section I) and subsequently received physiotherapy and/or occupational therapy.
- Those patients who have been discharged from therapy services within the agreed timescale.
- The fall should be one of the areas of concern identified by the patient or the therapist as a problem to be addressed, either through therapy intervention or referral to another agency.

Physiotherapy and occupational therapy records from all locations in the organisation where the above patients have been managed must be identified. It may be useful to place an identifier, such as a coloured sticker, on relevant records at the time the patient is first seen in the episode relating to the fall.

A single episode of care for a patient may consist of more than one set of records if the patient is managed in a number of locations or if they have been seen by both physiotherapy and occupational therapy staff who each hold their own notes. These should all be included in the audit and their data collected on a single audit form. Alternatively, a single set of multiprofessional notes may be included which include documentation from both physiotherapy and occupational therapy staff and possibly other professions such as medical or nursing staff.

Stage 3. Agree the sample size

- The project coordinator with the project team and auditor/audit staff should decide on the sample size.
- The sample needs to be selected in proportion to the distribution of the target group across the various clinical locations in the organisation. It is likely that the greatest number of records will be drawn from elderly care units.
- Some preliminary discussion should take place concerning the analysis of data (Stage 8).

Stage 4. Agree the method of sampling

- The project team and the local auditor/audit staff should decide the sampling method.
- The local auditor is responsible for taking the sample.
- Recommended method for taking a sample:
 - Decide a method to identify the records for inclusion e.g. a sticker or marker on the front of the notes (See also Stage 2).
 - Keep a register of, or put to one side, the records of every elderly person who meets the inclusion criteria, as they are discharged from occupational and/or physiotherapy during the agreed timescale.
 - At the end of the audit period, calculate the total number of elderly people who meet the criteria, and who have been discharged during the audit period. Document this number.
 - From the total number, select the records of every second patient in consecutive order after discharge. This will be the sample.
 - · If the total number is small, for example less than 20, include all the records collected.

Stage 5. Brief project participants

- A briefing session led by the project coordinator should be held for all those involved with the project, including the local auditor and the clinical staff delivering care.
- The briefing session should include the giving of information about:
 - the project plan
 - $\cdot\,$ how the information will be used to improve clinical practice
 - · the guideline
 - \cdot the assessment framework as a tool for physiotherapists and occupational therapists.

Stage 6. Collect the records

- The local auditor should collect all sets of records for every elderly person who meets the inclusion criteria during the timescale, as described in Stages 1 and 2.
- Records should be collected from each location where the elderly person received treatment.
- Using the sampling method, select the records to be audited.

Stage 7. Collect data from the records

The local auditor should discuss the audit form with the project team prior to collecting the data. It may be useful to discuss how the information in the audit tool can be found in the records. For example a standardised assessment form may have been developed locally. For further information on collecting the data, see Section 5 – 'Guidance on completing the data collection form'.

Stage 8. Analyse the data

- The local auditor should undertake the data analysis to maintain objectivity and prevent bias.
- The local auditor should have discussed with the project coordinator/project team during Stage 3
 - how the information collected from the records in Stage 7 will be analysed. These discussions should be ongoing (throughout the analysis stage) as suggestions for further analysis may be offered as trends arise
 - \cdot how the results should be presented, for example tables, pie or bar charts.

- The results of the audit should be clearly presented to all those who participated.
- A discussion about the results should be led by the project coordinator and involve all those involved with the project, including clinicians delivering care, the project team and local auditor. In addition it would be useful to involve all those whose work impacts upon the delivery of care to this group of patients, for example medical and nursing staff.
- The aim of the discussion is to identify areas where actual clinical practice did not meet the recommendations in the guideline and to suggest reasons for this e.g. lack of and a need for further staff training.
- The recommendations will be developed from these discussions.

Stage 10. Formulate and agree the recommendations

- The recommendations should reflect areas from the analysis where actual clinical practice varied from that recommended in the guideline and from the discussions in Stage 9.
- It is recommended that a table format is used to include:
 - · a statement of the recommendation
 - \cdot who is responsible for each element of the implementation process
 - \cdot a timescale, where appropriate
 - $\cdot\,$ additional space for comments where required.
- In order to gain commitment from those responsible for implementing the recommendations, the relevant people should be involved in developing them.

Stage 11. Implement the recommendations

- Disseminate the recommendations widely to all those involved with delivering care and to whom responsibility for implementing the recommendations is apportioned.
- Consider methods for change management.
- Write an interim report of the results and recommendations.

Stage 12. Re-audit

- A re-audit should be undertaken following implementation of the recommendations. A minimum of 6 months is recommended following the initial audit prior to the re-audit to allow for implementation of the recommendations.
- The results of the re-audit can be compared with the results from the initial audit. The second set of results should demonstrate an improvement from the initial results.

Stage 13. Feedback

This is the final stage of the project, which should include all those involved in Stage 9. Feedback should address the following areas:

- A comparison of the results of the initial audit and the re-audit.
- The work which arose from the recommendations.
- The effects of the recommendations and the value of audit.

Write a report to communicate a clear rationale of how the project was undertaken, the results, how the recommendations were developed and the improvements made which were demonstrated by the re-audit. It should include any further recommendations and a possible date for a further re-audit.

References

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Guidance on completing the data collection form

It will be useful to have the sample of a completed audit form (Section VII) available whilst reading this section. The information below follows the structure of the audit tool.

A separate audit form must be used for collecting data from the records for each patient's episode of care. If a single patient has a number of records from a number of locations or from a number of therapists the data from these should be included on a single form.

Q1 Who completed this questionnaire?

This is for the name of the person completing the data form and the department they work in e.g. clinical audit. It is not intended for the name of the practitioner whose records are being audited.

Q2 The records belong to:

This question asks for the source of the records being audited. The term multiprofessional refers to records which more than one professional uses for documentation purposes. If the records are multiprofessional but only the occupational therapist, or only the physiotherapist, has written in them, still put a cross in "multiprofessional", and not in the boxes 'Occupational Therapy' or 'Physiotherapy'. If separate sets of records for physiotherapy and occupational therapy (either or both) have been used, indicate that the records came from physiotherapy and/or occupational therapy, in the relevant boxes.

Q3 The records have been taken from the following locations:

This is the location the patient was treated in. You need to discuss and define the locations locally, with the project team. Additional boxes have been included on the form for locally defined areas. Delete locations/boxes that are not relevant. Patients may be seen in more than one location if they have been transferred within the organisation.

Points of Good Practice

These questions ask whether the relevant information was documented in the records.

Q4 Is there written evidence in the records that the elderly person was seen by a doctor in relation to the fall?

Answer "Yes" if it is documented that a doctor saw the patient or if there is a medical referral form to a therapist, which relates to the fall.

Q5 Is there written evidence in the records that the elderly person was involved in developing the treatment plan?

This question addresses the need to involve the elderly person in the treatment planning process. There should be evidence in the records that a treatment plan was discussed and agreed with the patient.

Q6 Was at least one standardised measure documented in the records?

At least one standardised measure (see Glossary) should be documented during the initial assessment process and again (the same measure) at the conclusion of an episode of care or transfer. Relevant measures can be found in Section IV of the audit pack.

Assessment

Therapy management involves the assessment and identification of problems, followed by problem-based interventions.

Q7 Is there written evidence in the records of the following:

Information about the reason for the most recent fall, history of previous falls and the person's fear of future falls, will be gathered from the documentation relating to the assessment of the patient.

Q8 Is there written evidence in the records that the following items were assessed and that problems were identified?

This question breaks down the management of the patient into 20 items. Each item is independent of the others. There are 2 columns to be completed for each item:

- Column 1 whether an assessment of that item has been documented.
- Column 2 whether a problem arising from the assessment has been documented.

If there is no documentary evidence of an item having been assessed, but a problem for that item has been identified, this should still be indicated on the audit form as YES, in the 'problem identified' column, and NO in the 'assessment documented' column.

The N/A box alongside the first item, 'Carers confidence in future safety' should be used if there are no carers associated with that particular patient.

Q9 For each item, is there written evidence in the records of how the identified problem was managed? Was the problem managed by the therapist or referred to another agency?

This question asks whether there is documentary evidence of the therapy management of the patient, for each item, and then, secondly, whether a referral was made to another agency. A referral is likely to have been made if the problem identified required an intervention other than therapy management. An example of an agency might be Age Concern, another health professional, social services or carers. If there is no evidence of these in the documentation, a cross should be placed in the NO box.

If a problem was identified but the patient declined the proposed intervention, the therapy management box would still be completed YES, if the discussion about this with the patient was documented.

If there was no problem documented in Q8, the auditor will assume that it was appropriate that there would not be any therapy management or referral for these items, so NO will be the appropriate response. If a problem was identified in question 8 and there is no documentary evidence of therapy management or referral, the response on the audit form will also be NO. This suggests an omission of care. The interpretation of the NO responses will therefore need to be considered by looking at the responses to Qs 8 and 9 together, at the time of the data analysis and interpretation.

Similarly, the auditor could find that where a problem has not been documented (a NO response in Q8), there is nevertheless documentary evidence of therapy management for that item (a YES response in Q9). This, as in the discussion in the previous paragraph, suggests an omission of, and lack of coherence with, the therapy process, and requires the responses to Qs 8 and 9 to be considered together in order to make an appropriate interpretation.



Audit tool for the guideline for the collaborative, rehabilitative management of elderly people who have fallen

Data	collection	period :	_/_/	/	_/_/	/
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This questionnaire is to be completed by the local auditor. Complete <u>each</u> question by placing a cross in one or more boxes as indicated in the question i.e. X

Q1	Who completed this q	uestionnaire?						
	Name		Departmer	nt				
Q 2	The records belong to:							
	Place a cross in the relevan	Place a cross in the relevant box(es)						
	Occupational Therapy	Physiotherapy	🗌 Multipr	ofessional				
Q 3	The records have beer	taken from the following	g locations	5:				
	You can cross more than or	You can cross more than one box						
	Accident/Emergency	Mental Health	🗌 Acute E	Iderly Inpatient beds				
	Intermediate Care	Day Hospital	🗌 Medica	l ward				
	Inpatient Rehab beds	Community/domicilliary	🗌 Rehabil	itation Outpatients				
	Orthopaedics							
Q4	Is there written evidence in the records that the elderly person was seen by a doctor in relation to the fall?							
	Cross one box only		Yes	🗌 No				
Q 5	ls there written evider involved in developing	nce in the records that t the treatment plan?	he elderly	person was				
	Cross one box only		🗌 Yes	🗌 No				
Q 6	Was at least one star	idardised measure docum	nented in t	he records?				
	A list of measures that meet this criterion can be found in Section IV of this pack							
	Was this documented:							
	a) as part of the initial ass	essment	🗌 Yes	🗌 No				
	b) (the same measure) at t	he completion of						
	an episode of care/tran	sfer?	Yes	🗌 No				
Q7	Is there written evidence in the records of the following:							
	Cross either Yes or No for each item							
	Reason for the most recent	fall	🗌 Yes	🗌 No				
	History of previous falls		🗌 Yes	🗌 No				
	The person's fear of future	falls	🗌 Yes	🗌 No				

Assessment and Management

Q8 Is there written evidence in the records that the following items were assessed and that problems were identified?

Place a cross in either Yes or No for each item in the columns below (see guidance notes for interpretation of N/A box)

			ssmen Imente		Prob iden [.]	lem tified	
		Yes	No	N/A	Yes	No	N/A
Se	ction 1						
a)	Carer's confidence in the						
	person's future safely						
b)	Person's confidence in their ability						
	to move about safely						
	ction 2:						
	bes the patient have strategies to:	_	_		_	_	
	Get up from the floor						
	Summon help						
c)	Move about the floor						
d)	Keep warm while on the floor						
	ction 3:	_	_		_	_	
	Balance						
	Functional range of movement (ROM)						
c)	Lower limb muscle weakness						
d)	Lower limb flexibility						
e)	Trunk flexibility (trunk mobilisation,						
	trunk exercise, rolling)						
f)	Walking ability, gait						
g)	Functional mobility	_	_		_	_	
	(could include wheelchair use)						
h)	Transfers						
i)	Personal activities of daily living						
j)	Domestic activities of daily living						
k)	Clothing hazards						
I)	Footwear hazards						
m)	Mobility aids and appliances						
n)	Home visit assessment						
o)	Home hazards						

Assessment and Management

Q9 For each item, is there written evidence in the records of how these were managed?

Were they managed by the therapist or referred to another agency?

Place a cross in either Yes or No for each item in the columns below (see guidance notes for interpretation of N/A box)

	Therapy management of identified problem			Referred to another agency		D
	Yes	No	N/A	Yes	No	N/A
Section 1						
a) Carer's confidence in the						
person's future safely						
b) Person's confidence in their ability	_	_		_	_	
to move about safely						
Section 2:						
Does the patient have strategies to:	_	_		_	_	
a) Get up from the floor						
b) Summon help						
c) Move about the floor						
d) Keep warm while on the floor						
Section 3:	_			_	_	
a) Balance						
b) Functional range of movement (ROM)						
c) Lower limb muscle weakness						
d) Lower limb flexibility						
e) Trunk flexibility (trunk mobilisation,						
trunk exercise, rolling)						
f) Walking ability, gait						
 g) Functional mobility (could include wheelchair use) 						
h) Transfers						
i) Personal activities of daily living						
k) Clothing hazardsl) Footwear hazards						
,						
m) Mobility aids and appliances						
n) Home visit assessment						
o) Home hazards						

Glossary

Agencies / Residential	Social Services, housing organisations or nursing homes
Carer	People who are relatives/paid employees who are looking after the elderly person
Episode of care	That which takes place from the initial face to face contact with the physiotherapist or occupational therapist service in a unit until the case is discharged from the clinical responsibility of the therapy service i.e. initial contact intervention discharge.
Hazard	Danger, obstacle.
Mobilisation	This includes active/passive exercises or stretches
Multi-professional records	Joint record keeping i.e. there is one central source for documentation for all professionals.
Standardised measure	A measure that has been published in a peer review journal and for which there are explicit criteria for its completion.
Training	
e.g. balance training	This includes education and advice given to patients and/or carers.

Section

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