



THE COLLEGE
OF OPTOMETRISTS



Focus on falls

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Acknowledgements

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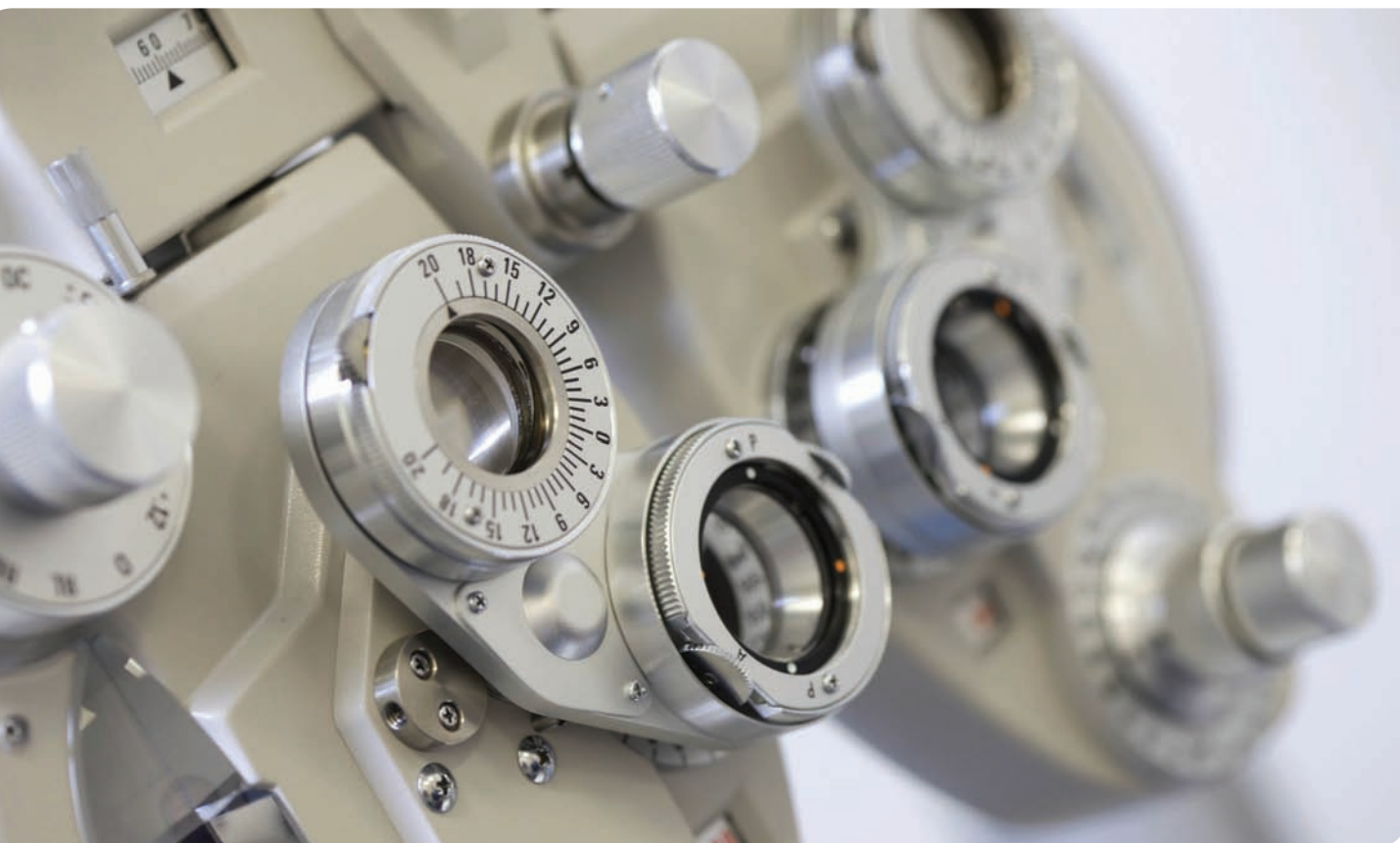
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The College of Optometrists is the professional body for optometry in the UK. One of our key strategic objectives is to work with other professions and key interest groups involved in health care to influence the delivery of eye care.

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Foreword



Foreword by Dr Mary Ann Sherratt

Falls are the most common cause of hospitalisation for people aged over 65. Across the UK, one in three people aged over 65 will fall every year, and it remains the biggest cause of accidental death in people aged over 75ⁱ. About 45% of people aged over 80 who live in the community fall each year, with up to 25% of these incidents resulting in serious injuryⁱⁱ. Fractures from falling cost the NHS approximately £2.2 billion per annumⁱⁱⁱ.

The chances of having reduced vision greatly increase with age and older people with reduced vision are more likely to fall. Vision is fundamental to co-ordinating our movement – balance and postural stability are directly affected by vision. In addition, vision is fundamental to adapting gait to enable safe travel through the environment, avoiding obstacles and negotiating steps and stairs. As optometrists, we can play a vital role in helping to prevent falls by detecting and appropriately correcting sight loss, providing the right advice and ensuring that spectacles are correctly centred and of a suitable design for the patient.

This report aims to outline and promote the pivotal role that improving vision has in preventing falls. By producing a clear picture of vision testing within falls services, highlighting any variations in care and suggesting solutions to policy makers and the optometric profession, we aim to support falls professionals in testing patients' vision and to demonstrate the role optometrists can play in this.

To achieve our goal and measure the scale of the challenge, we carried out interviews with six falls services and conducted an online survey, which was open to all falls teams across the UK. We are now working to make connections between falls professionals and optometrists and see this report as the beginning of a series of tangible actions that will help recognise those at risk and prevent people falling because of vision problems.

A handwritten signature in black ink, appearing to be 'M. Sherratt', written in a cursive style.

Dr Mary Ann Sherratt
Chair of Falls Project Steering Group

Key messages

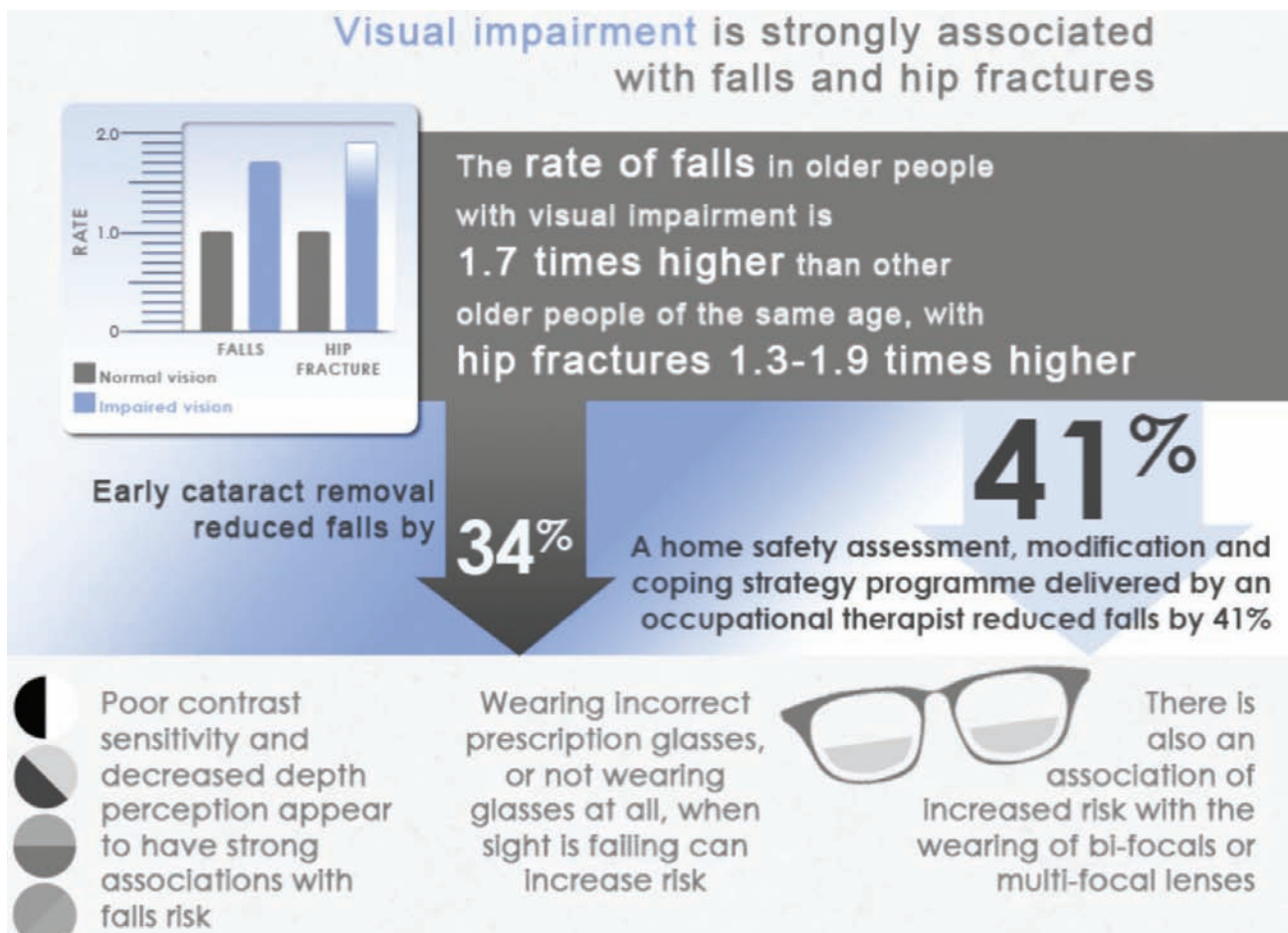
- There is variation within falls services in the frequency and method of vision checks
- A lack of resource and capacity within falls services is key to the variation
- Most falls teams would welcome support in performing eyesight checks
- Referral between falls teams and optometrists would help the patient pathway and foster clinical continuity
- The College of Optometrists is pursuing solutions to support both optometrists and falls teams in linking up services for the benefit of the patient.



Background

A number of factors contribute to the risk of falls caused by poor vision among older people. Poor balance can be caused by reduced central and/or peripheral vision or eye movement disorders. Poor central and/or peripheral vision and reduced depth perception can lead to trips over obstacles or on stairs. Unfortunately, visual impairment that could be corrected by new glasses or cataract surgery is common in the older population of the UK^{iv} and many patients attending A&E clinics for falls or hip fractures have correctable visual impairment and have typically not attended eye exams for several years^v. From an optometrist's perspective, research shows that new glasses should be prescribed conservatively^{vi}.

The type of glasses prescribed is also important. Wearing bifocal or varifocal glasses can affect the ability to gauge distance and depth perception, and wearers are twice as likely to fall as other elderly people^{vii}. Uncorrected vision loss can also lead to reluctance to undertake physical activity, which can reduce muscle strength and further increase the likelihood of a fall.^{viii} It has been found that between 40% and 50% of older people with sight loss fear falling to the extent that they reduce their levels of activity^{ix}, which completes a vicious cycle.



The above illustration has been reproduced from a freely downloadable infographic on Vision and Falls Prevention published by ProFaNE, an online community of healthcare professionals committed to the prevention of falls: <http://profane.co/vision-and-falls-prevention-infographic/>

Falls services

Certain eye conditions common in older people also have an effect on the likelihood of falling. The report *Dual tasking in balance in those with central and peripheral vision loss*⁸ found that the likelihood of falling is significantly greater in people with age-related macular degeneration (AMD), due to its symptomatic central vision loss. Diabetic retinopathy is yet to be studied in relation to falls among older people.

In June 2011, the College published *The Importance of Vision in Preventing Falls*, a report which highlighted the relationship between sight loss and falls among older people. The strong recommendation arising from the report was that falls assessments, especially of older people, should include screening for visual impairment and that those identified as being visually impaired should be given a full eye examination by an optometrist. These findings underpinned those of the Thomas Pocklington Trust report^{xii} from 2013, which recommended that the unique circumstances of people with sight loss in relation to falls need to be highlighted among falls prevention teams, care homes and Clinical Commissioning Groups (CCGs), including the rehabilitation programmes that aim to improve physical activity.

It is important to note that it is not only older people who are at increased risk of falling. Research^{xiii} has shown that the average age of those having falls and resulting fractures decreases with increasing deprivation.

Despite the multiple examples of how poor vision can increase the risk of falling, an audit carried out in 2007^{xiii} suggested that only approximately half of falls clinics assessed vision.

Across the UK, there are specialised falls services dedicated to preventing further falls, providing rehabilitation programmes and offering advice to patients. These teams work in a hospital or clinic setting and sometimes carry out home visits to ensure that environmental risks of falling are minimised. Falls teams are typically composed of occupational therapists, geriatricians, rehabilitation specialists, physiotherapists, falls specialist assistants (specially trained non-clinical NHS staff who perform the risk assessments, take patient history and so on) and, in some cases, a podiatrist. There is rarely an eye specialist involved as a core part of the team. It is currently unknown exactly how many falls services there are in the UK, but there are online resources available to help patients and clinicians find their local service, most notably from Age UK^{xiv}. The Royal College of Physicians, through the FallSafe^{xv} initiative, also provides practical information on falls.

Falls prevention measures have been set out in Department of Health policy through the Public Health Outcomes Framework for 2013–16. Age UK and the National Osteoporosis Society responded by establishing the Falls and Fractures Alliance in England. Through working together, members of the Alliance are better placed to achieve the common goals of preventing falls and fractures and, specifically, to reduce the rate of hospital admissions for hip fractures and falls-related injuries among older people. The College is a member of the Alliance and has signed the Falls and Fractures Declaration^{xvi} – a series of commitments for all Alliance members with the aim of achieving the above goals.

There are centralised falls prevention initiatives in place across the UK. In Scotland, the National Falls Programme, set out in the document *Up and About*, acts as a reference and resource for those involved in the planning, development, evaluation and delivery of services with the remit of preventing and managing falls and fragility fractures. In collaboration with Optometry Scotland, the College of Optometrists has been working to ensure that adequate vision checks are embedded within the linked national Falls Pathway, which is currently being revised and developed by NHS Scotland.

A similar programme in Wales has been launched via the Multiagency Falls Collaborative for Wales. Led by Public Health Wales, the recent report *Falls: Preventing falls in older people living in the community*^{xvii} has been designed as an injury prevention guide aimed at multidisciplinary health professionals.

Aims of the report

This report aims to:

- provide an understanding of the current provision of vision testing within falls pathways and other services related to the prevention and treatment of falls
- make recommendations on how falls services can be supported in testing patients' vision, while encouraging and empowering optometrists to contribute.

The NICE clinical guideline on falls^{xviii} recommends that multifactorial assessments undertaken by falls services should include investigation of visual impairment. At the outset of this project, the College did not have a realistic idea of how regularly this occurred within falls services, or indeed how falls teams checked patients'

vision and what then happened if a suspected problem was identified. To address this, we approached six falls teams directly for in-depth interviews about their service and then launched a short online survey, open to all falls teams across the UK.

Gauging levels of vision testing, referral protocols, feedback and follow-up provisions, as well as integration with the associated specialist services, the questions posed were designed to gather as much information from the falls teams as possible to form a realistic picture of any unmet need. The information served as an indicator for identifying practical measures to support and enhance (where necessary) the provision of vision testing within falls services and show how optometrists can help.

Methodology

First, we interviewed six falls services teams across the UK to gather case study information. Teams were chosen based on criteria of demographic diversity to collect information from as wide a scope of settings as possible. The full details of services approached and the questions posed can be found at Annex A. Our thanks go to the teams, whose patience and honesty in answering our questions proved invaluable in the production of this report.

A bespoke set of questions was then disseminated to as many falls services as possible through an online survey. To build on the interview findings and existing literature, the survey was simply designed to gauge how many teams check vision as a core part of their standard falls assessment and further, how this is actually performed. The questions can be found at Annex B.

Findings

A combination of the survey results and falls team interviews identifies conclusions that serve to clarify the level of unmet need and where we can target our support.

The findings are summarised below under each conclusion drawn:

The majority of falls services carry out some kind of vision check, but the methodology, frequency and extent of this check varies from team to team

Just over half (54%) of those responding to the survey always check vision as part of their falls service, and a further 16% advised that they occasionally assess vision. Of those teams that reported that they checked vision, 85% question the patient – often asking when they last had an eye test – 38% check the patients' glasses for cleanliness and 31% ask if the patient can see an object from a distance. Where resources allowed, some teams reported carrying out basic visual acuity tests themselves, using a Snellen chart, or checks are carried out by trained nursing staff.

Patients found to have problems with their vision are advised to have an eye examination but are often not directly referred to an appropriate service

If a problem with vision is detected, 92% of the survey respondents stated that this is noted and patients are advised to visit their optometrist for an eye examination as soon as possible. The Newcastle Falls and Syncope Service, based within the city's main hospital, refers falls patients with eye health issues directly to the hospital optometrist. If Lincolnshire Falls Prevention Service finds patients with a significant sight issue, they are referred to the local Outside Eye Clinic. However, most teams advised that they do not have the mechanism or resource to carry out follow up activity. A total of 69% of the teams surveyed note the findings on the patient record. Some respondents advised that patients could be reluctant to follow up referral advice for various reasons, including personal pride. Some teams reported that a referral is made where specialised services are available locally, such as the Sensory Impairment Centre in Kirkcaldy, Scotland, or the NHS funded *Eyes on Call*^{xix} free domiciliary optician service. Some respondents noted that they would always refer a patient with detected eye problems directly to their GP. For those teams who do not habitually refer patients, a lack of available resource and information was invariably cited as the main reason.

Awareness of falls services among relevant primary care clinicians is a fundamental factor in the service seeing the appropriate patient at the appropriate time

Where there is a high level of local awareness of the falls team, and where cross-clinician working is embedded into hospital services, appropriate referral processes appear to work well with patients who have fallen or who are at risk of falling. Ambulance

services, emergency departments and GPs were all perceived to be pivotal in terms of patients accessing specialist support, and most teams interviewed felt that they had achieved adequate recognition and trust among the relevant services.

There is variation in how patients are referred to falls services (often dependent on where the service is physically situated)

Some teams report to be accessible only through direct GP referral (with the team citing the GP health records as being a key factor in the care they provide), whereas others (such as the Lincolnshire and Greenwich teams) are actively attempting to increase their case load through internal strategies that strive to work with key agencies such as social services, GPs and community nursing. High levels of referral from primary care services to the two hospital-based teams in Greenwich and Newcastle were reported, attributed to the direct links with other hospital departments, including A&E.

The Hertfordshire falls liaison service is directly affiliated to the ambulance service, and they felt this to be a great success in that they receive an almost 100% referral rate from falls-related call-outs. Conversely, in a city like Glasgow where there is a very large health board catchment area (NHS Greater Glasgow and Clyde) the team found that awareness among the relevant primary care services, especially GPs, was inconsistent.

There are clear criteria in place for patients who qualify for falls services

Referrals to falls teams generally come from other frontline health professionals who encounter a patient who has fallen and is over 65. Although all teams reported having clear criteria for a patient qualifying for their service, a degree of flexibility was often exercised when patients did not officially qualify but presented with severe risk factors and/or symptoms. The most common circumstantial anomaly for qualifying was the age of a patient. The accepted regulatory definition of an elderly person is 65, but younger patients will quite often present with the normal triggers for being at risk of a fall, especially in deprived areas where the population's age in health terms is generally higher than chronological age. To illustrate the potential scope of this issue, the Office of National Statistics' report *Inequality in Disability-Free Life, Expectancy by Area Deprivation: England, 2003–06 and 2007–10*^{xx} highlights that the life expectancy of the 20% most deprived population in England is 55.

Although several teams seem to encourage a system of patient self-referral, usually online, promotion of this is usually through word-of-mouth and there is low take-up of this service.

Falls teams who do not check vision attribute this to lack of resources and confidence to carry out appropriate vision checks

The response to our survey indicates that, while falls professionals are aware of the importance of vision as a core part of patient assessments, they often feel that they do not have the resource, capacity or training to perform an eye test to a satisfactory level.

The survey indicates that the most common factor leading to falls service teams not checking vision was a lack of confidence in their ability to do so (70%) – the majority of these stating that training or an 'easy to use' tool would be welcome. Nearly three-quarters (71%) of respondents felt that an established relationship with optometrists in the area would be useful for their service, with 59% suggesting that a patient leaflet would help. The falls teams that were interviewed agreed that a peer-reviewed in-house vision screening tool would be a useful aide to integrating vision into their patient risk assessments, and would help to standardise the process.

Feedback loops are important to gauge the effectiveness of a service

Established feedback and follow-up loops for patients varied between falls teams. The Hertfordshire team reported that they had a post-intervention assessment embedded into their service that gathers data on their service's efficacy – based on patient mobility, confidence and lack of a repeat fall. Some teams' protocols included a follow up appointment at a set time after the patient had left the service, while others simply did not have the necessary resources to action discharge plans or monitor their patients' progress. However, exercise programmes are invariably an end-point feature of the patient journey through the falls service, often outsourced to local community programmes, and feedback throughout this stage is standard practice. All teams interviewed expressed that they would ideally like to know what happened after a patient left their service.

Vision is often not a specific feature of local falls pathways

Among those teams interviewed, most were guided by a locally agreed falls pathway, often devised at health board, foundation trust or clinical commissioning group level. In general, vision is not a specific feature of the overarching pathways, but it does feature as part of the in-house patient assessment for all but the Edinburgh team.

The falls pathway for Greenwich is actively monitored and reviewed by a recently established falls steering group and a long-standing multi-agency falls group. This could be an exemplar for embedding optometry and eye healthcare into the patient's journey after a fall.

Resource and capacity issues can be prohibitive for falls services

As previously noted, the in-depth interviews and comments from the online survey indicate that falls professionals are fully aware of the importance of vision as a core aspect of patient assessment, but feel that they often do not have the resource, capacity or training to test vision to a level that they feel to be satisfactory.

All teams interviewed noted that they would have liked to reach 'at risk' patients before a damaging fall occurred, however, only a few have referral protocols for this in place, with the rest citing capacity and lack of resource as insurmountable barriers to this.

Research implications

Anecdotal evidence gained throughout the production of this report unearthed a pattern of patients' understandable pride and need for independence being an obstacle to them accepting the specialist care available. It can be perceived as an admission of old age and frailty. This aspect is touched upon in other research, but seems to remain an underrated consideration in service design. For this reason, carers are also considered an important audience for this report. Often acting as advocates for older people, they should be a target for falls awareness information (particularly the important part that vision can play in falling). Finding methods of addressing this should be prioritised.

There are several research projects underway in the area of vision and falls covering the effectiveness of rehabilitation programmes, falls after cataracts and patients not accessing falls services because of self-perceptions – all of which will have an impact. *Environmental and behavioural interventions for reducing physical activity limitation in community-dwelling visually impaired older people*^{xxi} showed that, although behavioural interventions delivered by occupational therapists had been shown to reduce the rate of falls, the authors were unable to conclude if increased mobility or reduced activity lessened the patients' exposure to risk. They concluded that further research was necessary to determine why the behavioural intervention worked.

The current projects and other areas where gaps in evidence appear to exist are detailed at Annex C.



Nearly three-quarters of respondents felt that an established relationship with optometrists in the area would be useful for their service.”

Conclusion

One aspect that shone through from all the interviews and survey results was the dedication and passion of the falls teams and their willingness to continuously improve their service.

The findings identified variation in levels of vision screening/ testing and treatment within the context of falls services. Provision is largely affected by the resources available and the physical setting of the service. Some teams have a thorough, peer-reviewed vision check included in their risk assessment of the patient. However, the organisation of any follow-up, if a vision problem is detected, remains fragmented. Often, the responsibility is left to the patient to have their eyes examined but there is generally little scope to confirm if this actually happens. Falls professionals generally felt that a more integrated way for their patients to see an eye health specialist was desirable. All of the falls teams who did not check vision were aware of the importance of doing so but capacity issues, confidence and resources were the prohibitive factors most commonly cited.

Many of the falls services that are not in the fortuitous position of having an eye health professional to hand would benefit from having the ability to communicate with and/or refer to an optometrist. Optometrists are also in a good position to identify people who are at risk of falling, for example those over 65 who have a change in their prescription and/or wear multifocal lenses. If optometrists could provide information on prevention and/or refer patients to the local falls service, they could play a significant part in reducing the number of falls. These factors serve to illustrate that optometry as a profession can play an important role in treating patients with sight loss who have fallen and also in mitigating risk by offering advice on prevention. The findings highlight a number of areas where practical measures can be taken to facilitate greater levels of integration between eye health specialists and falls services.



Recommendations

This report serves to highlight both the importance of testing a patient's vision as a core part of a falls service and the important role optometrists can play. We recommend that:

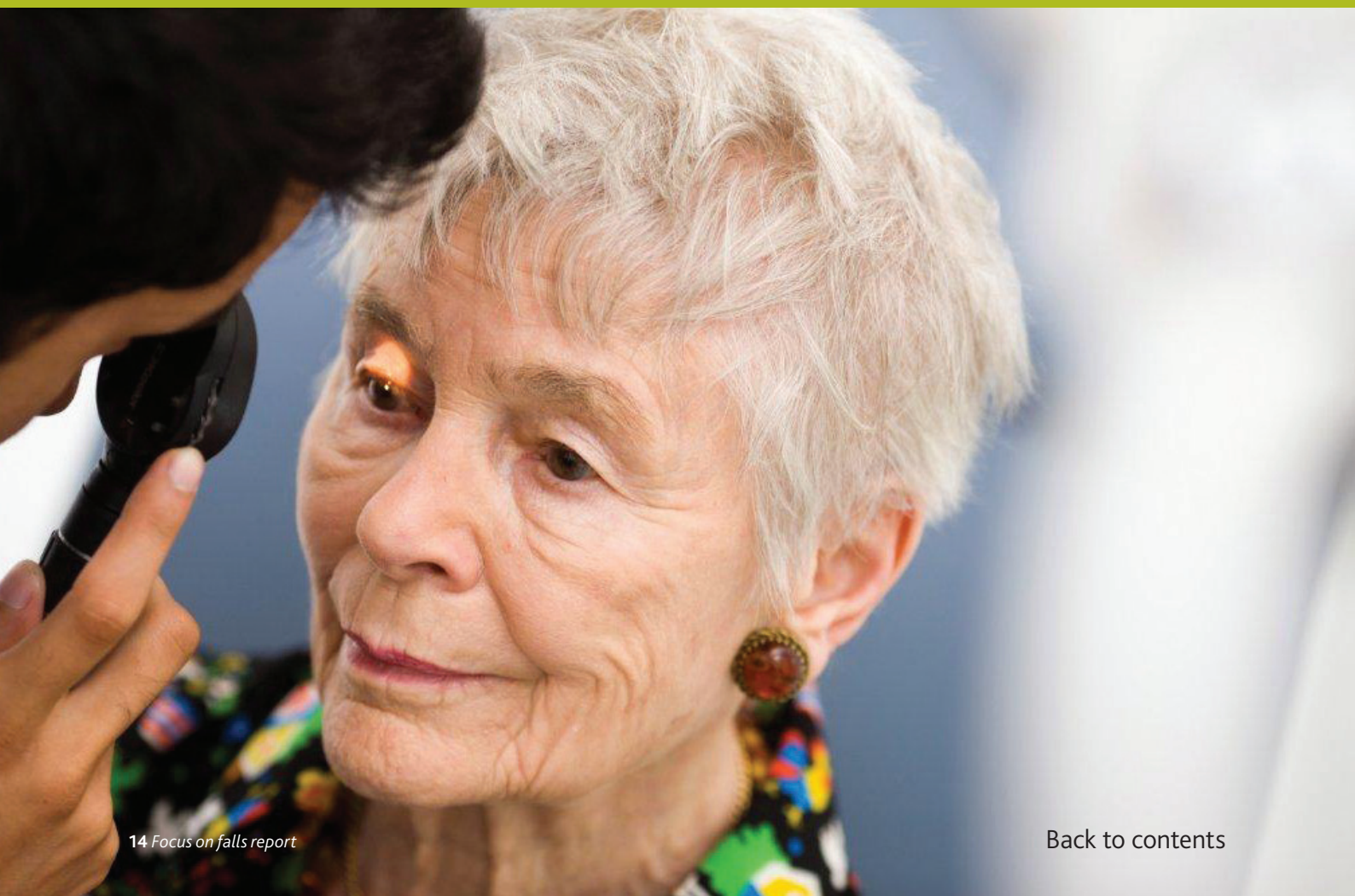
- there needs to be increased awareness among the optometry profession of the causes of falls, such as the need for cautious prescribing of multifocal lenses to older people
- easy-to-use tools for checking vision within a falls service should be more readily available
- methods of reciprocal referral between optometry and falls services should be explored
- a system should be devised whereby falls services can easily select and contact each patient's preferred choice of local optometrist for onward referral
- connections between the specialist vision services, such as those for low vision, and falls services should be nurtured and encouraged
- the message that generic falls rehabilitation exercise programmes may not be effective for people with sight loss should be highlighted to the relevant professionals
- provision for falls should be enhanced within the Map of Medicine for Low Vision when that pathway is next revised
- awareness of the link between falls and vision should be raised with carers and carers' organisations
- further research should be undertaken in various areas to close gaps in evidence.



Optometry as a profession can play an important role in treating patients with sight loss who have fallen.”

Next steps

For the College of Optometrists, the recommendations in this report are not ends in themselves. We will undertake a number of initiatives to address the challenges identified in this report, especially around partnership working to produce tangible solutions for optometrists and falls teams alike. We will continue to raise awareness and lobby at a national level and will push the key messages with falls leads, policy makers and stakeholder organisations. The recommendations for further research at Annex C will be explored for feasibility.



Case studies illustrating good practice

Case study 1

Cheltenham General Hospital and Gloucester Royal Hospital have a comprehensive falls service with a multidisciplinary falls assessment clinic and a falls prevention clinic running on each site – the latter being run by a physiotherapist specialising in falls. The service is aimed at patients who are aged 65 and over and there is a strong focus on prevention, exercise and risk-assessment.

The teams enjoy successful reciprocal referrals from optometry and ophthalmic services, largely attributable to comprehensive referral forms for primary care health professionals and widely published information for patients. Referral forms can be emailed, faxed or sent via internal mail and patients should receive an appropriate appointment within the next month. The referrer will always be copied into the clinic letter which will communicate all details of the assessment and any actions/ongoing treatment/outcomes.

Zoe Spencer, Clinical Specialist Physiotherapist in Falls Prevention & Management at Gloucester Royal Hospital says: *“Eye health professionals at both hospitals have been able to identify older patients who are at risk of falling and refer them directly to the local falls service. This has really enhanced the patient journey and provided much needed clinical continuity between both services. Hopefully patients will reap the benefits and falls will be prevented.”*

Case Study 2

Visibility, a charity based in the West of Scotland, fully recognises the importance of vision in relation to falls. Working directly with the award-winning falls team in Greater Glasgow and Clyde and community eye services, Visibility has a dedicated patient support worker to look at reciprocal referral measures and to act as a hub for identifying patients who have fallen or are at risk of falling. The organisation has produced a list of questions for allied health professionals that can help them to identify vision problems that increase the likelihood of falling. The questions were peer-reviewed by optometrists at Glasgow Caledonian University with certain queries proving to be effective – such as if the patient has trouble pouring hot drinks or if they have trouble recognising faces. When a patient is identified within an eye department as being at risk of a fall, the patient support worker will offer them a direct referral to the falls service or a representative from Visibility will call to give advice on mitigating the risk.

Visibility also provides training to falls teams to raise awareness of visual impairment and highlight the link to falls. It has produced a comprehensive information leaflet on the risks of falling aimed at patients with low or impaired vision that suggests a series of essential practical actions. Encapsulating environmental advice (including lighting and contrast), the importance of remaining active, spectacle cleanliness and having regular eye tests to ensure the correct strength of lens. The leaflet also encourages bifocal or multifocal glasses wearers to visit their optometrist if they are worried about falling.

Annex A

We approached and interviewed the following services:

- Greenwich Community Falls Specialist Team (inner city, community-based, mostly affluent)
- Lincolnshire Falls Prevention Service (more rural, funded by Public Health and commissioned through the Health & Wellbeing Fund)
- Hertfordshire Falls Liaison Service, (triage team based within the ambulance service, assessment stage of service is crucial)
- The Community Falls Prevention Programme in Glasgow, (inner city team, very large catchment area and high levels of deprived patients)
- The Lothian Falls and Fractures prevention team, Edinburgh, (wide scope, affluent, relatively large number of rural patients)
- Newcastle Falls and Syncope Service (well integrated in the Newcastle Royal Infirmary serving an area of the UK where falls are particularly prevalent).

Questions asked of the falls teams

1. What is the composition of your falls team? (specialist nurse/physiotherapist etc) Where does it sit? Tell me the basics.
2. Do you use a particular set of standards as a guide for your service?
3. Do you follow a pre-determined falls pathway?
4. How do patients find their way to you? (referral from primary care/self referral/relative or carer)
5. How long after the fall do patients generally arrive in your care?
6. In your experience, what, if any, obstacles do patients encounter in getting onto your service?
7. The NICE falls guideline recommends that "*older people who are in contact with healthcare professionals should be identified and risk-assessed for the likelihood that they will suffer a fall*". How often are patients referred in this way? I.e. before they have a fall?
8. Do you actively assess "at risk" groups with tips on prevention or is it always about reaction to someone who has had a fall?
9. Do you have experience of using a falls assessment form?
10. Are you in contact with a fracture liaison service?
11. Do you have relationships with local optometrists/GPs/ pharmacists or with hospital eye units? What are your experiences of the interactions?
12. Does your service work with services or teams supporting people with learning difficulties or dementia?
13. Do you engage with care homes? How many of your patients live in residential homes? Do you go to them to give care?
14. Are there any established feedback loops in place?
15. Can you tell me what level of involvement you currently have with the CCG?
16. What health information do you get for patients on the service, are you generally informed if they have an eye condition or wear glasses?
17. Do you test eyesight of the patient yourself? If so, how do you do it and what then happens next? How does this integrate in to the falls pathway?
18. If not, would you be willing to use a peer endorsed simple eye test yourself?
19. Does your service work with a low vision service?
20. How involved are the family/carers? Is there an established mechanism for engagement with them?
21. What are the biggest challenges to providing a good service to your patients?
22. In your opinion, what is the smoothest running aspect of the service you provide?
23. Can you suggest anything that you feel would improve the service?

Annex B

Online survey questions

Please tell us the name and location of your falls service and what is your role in the team?

Do you check a patient's vision as part of your falls service?

- Yes
- No
- Sometimes
- Unsure

How is your vision test performed?
(select as many as applicable)

- Question the patient on their vision as part of the overall falls assessment
 - Ask if the patient can see an object
 - Check their glasses
 - Examination by an optometrist/ophthalmologist linked to team
 - Inhouse tool (e.g. a letter chart)
 - Other (please specify)
-
-

What happens if a problem is detected? Do you:
(select as many as applicable)

- Refer to an optometrist
 - Refer to a hospital eye service
 - Suggest that they have an eye examination as soon as possible
 - Record the problem on their records
 - Use discretion dependant on the individual case
 - Other (please specify)
-
-

What factors do you feel contribute to your service not checking vision? (select as many as applicable)

- Lack of time
 - Unsure of benefit
 - Lack of confidence in ability to assess vision
 - Not enough information
 - Other (please elaborate)
-
-

Which of the following would you consider useful for assessing vision in relation to falls?
(select as many as applicable)

- An established relationship with optometrists in your area
 - A patient leaflet
 - An inhouse tool (e.g. a letter chart)
 - An eye specialist as a core part of your team
 - Other (please elaborate)
-
-

Do you have any other comments in relation to vision testing as part of your service?

Annex C

Research implications

There are a number of research projects currently being undertaken, these will help to inform, validate and implement our action plan over the coming months. For example, Professor David Elliot (a member of the steering group for this report) is involved in the following projects:

- Falls after cataract surgery: Investigating whether large refractive changes are linked with increased falls after cataract surgery (funded by Dunhill Medical Trust).
- Changing the appearance of steps: Investigating whether step edge highlighters (and their position and size) improve gait safety on stair descent and whether adding the horizontal-vertical illusion to step risers improves safety on step ascent (funded by National Institute of Health Research).
- Falls with modified multi-focals: Investigating whether modified multi-focals improve gait safety on step ascent and descent (funded by Essilor International R&D).

Other research currently underway includes:

- Mima Cattan at Northumbria University was awarded a National Institute of Health Research (NIHR) grant in 2013 to work with people with sight loss to look at a standard 'falls prevention' programme and how it may be applied/amended.
- Thomas Pocklington Trust is funding a PhD at Aston University that explores multifocals and falls.
- Heather Waterman at Manchester University recently completed an NIHR funded feasibility study in reference to testing the effectiveness of the Otago falls programme among people with sight loss.
- Thomas Pocklington Trust is funding a study on falls and gait in relation to lighting on stairs at Surrey University.

Recommended further research

- Given that current literature suggests new spectacles using the full subjective refractive prescription may increase falls rates (Cumming *et al*, JAGS 2007), a randomised controlled trial of partial versus full prescription to gauge the effects on risk of falling is called for. In the meantime, conservative prescribing is recommended.
- Falls rehabilitation exercise programmes specifically for falls patients with low vision.
- Gaining greater understanding of what people with sight loss who do not fall are doing differently.
- An understanding of patients' obstacles (including shame and pride) for them accepting the specialist care available.

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