

# Stroke-vision care pathway

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## **Introduction**

Stroke-related visual impairment occurs in about 60% of stroke survivors. Visual impairment can be the only problem or it may be one of a number of disabilities caused by stroke. The impact of visual impairment can be considerable with impaired vision leading to increased rate of personal accidents and falls, social isolation, loss of confidence, impaired mobility, reduced quality of life, increased anxiety and depression.

Some types of visual impairment can be easily detected and many affected individuals will report their visual symptoms. However, most types of visual impairment cannot be easily detected without specific assessment and some affected individuals do not complain of visual symptoms. Therefore, it is imperative that those who care for stroke survivors (clinicians, carers, charity groups, etc.) have an awareness of the visual consequences of stroke and make the appropriate referrals for vision and support services.

The stroke-vision care pathway is a process pathway that describes the potential ways that stroke survivors with visual impairment may access health care and what the appropriate referral(s) to vision services should be relevant to their specific vision problem(s). Identification of visual impairment with access to early vision rehabilitation has impact to quality of life and activities of daily living with potential cost savings to the NHS by enhancing rehabilitation and supporting early discharge. This document explains the components of the stroke-vision care pathway.

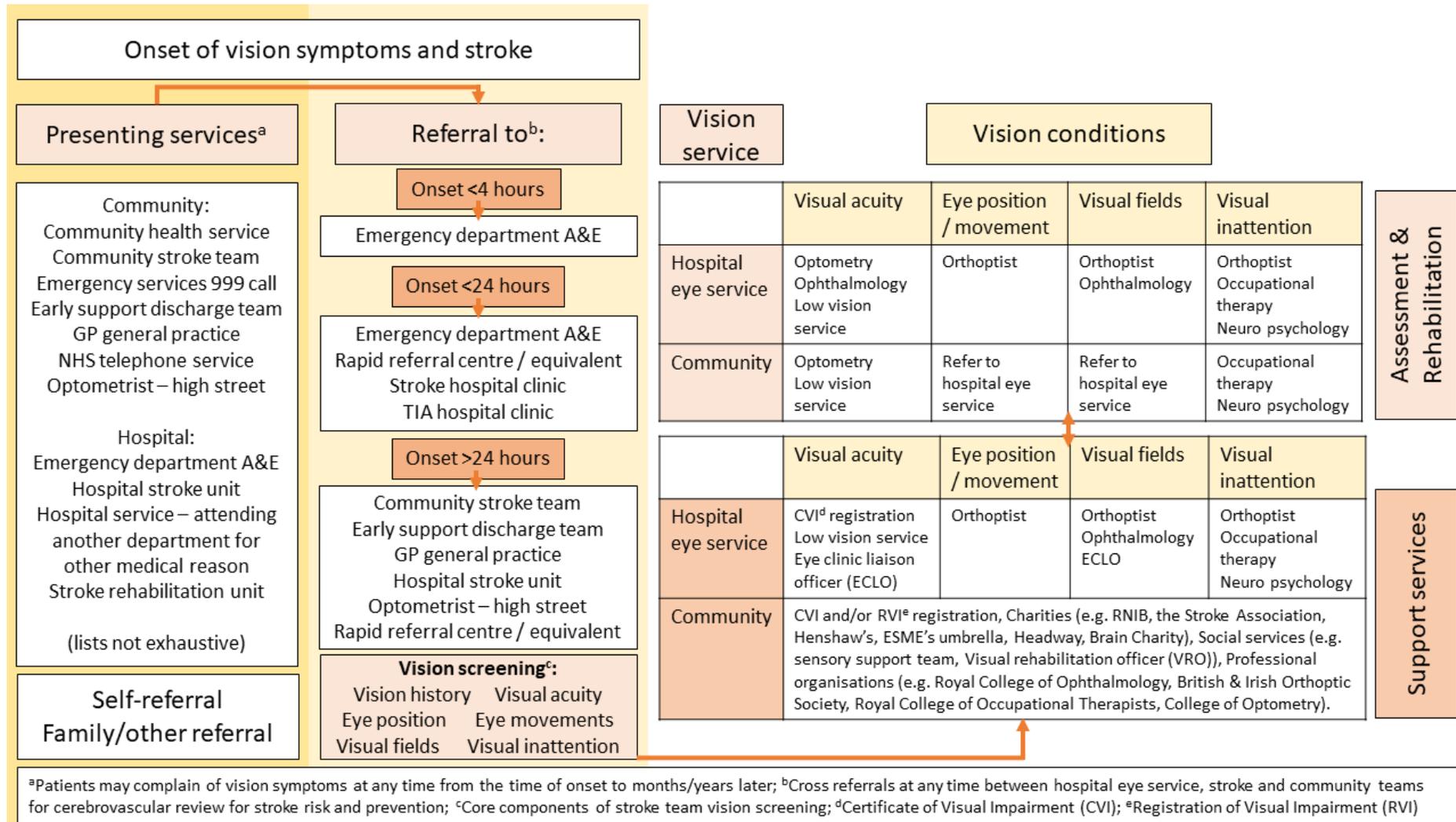
## **Purpose**

The stroke-vision care pathway has been developed collaboratively with stroke survivors, clinicians and researchers (including stroke professionals and eye professionals). We encourage anyone working with stroke survivors to implement the use of this care pathway to improve detection of visual impairment and access to eye care.

**Guidance notes**

- 1) The purpose of the stroke-vision care pathway is to encourage early identification of visual impairment in stroke survivors with early and appropriate referrals to vision services.
- 2) The stroke-vision care pathway is designed to consider the various services to which stroke survivors might present with their vision symptoms, the timing at which this might occur, the various referral options dependent on the type of visual impairment and the various support services that be appropriate – with the goal of maximising patient benefit.
- 3) The stroke-vision care pathway should be broadly applicable across the UK despite variations that can occur with local service arrangements, policies and procedures.
- 4) The stroke-vision care pathway is best implemented alongside appropriate vision screening provision to aid the accurate identification of visual impairment with assessments consisting of a minimum number (core) outcome measures.

### Stroke-vision care pathway



## **Presenting services**

Stroke may affect people of any age. Although typically associated with older age, about one quarter of stroke survivors are of working age and strokes can also occur in infancy, childhood and teenage years. There are about 110000 new adult strokes and 400 childhood strokes in the UK each year and currently about 1.2 million stroke survivors living in the UK. People may complain of vision symptoms at any time from the time of onset to months/years later (table 1).

Reporting of visual symptoms may be by the patient themselves or reported by family, friends and/or carers. People might report their visual symptoms as 'incidental' whilst attending another community or hospital service. People might also report their visual symptoms whilst an in-patient on a hospital stroke or rehabilitation unit, or following discharge to an early supported discharge team or other community stroke service.

There are a number of issues to consider in how stroke survivors may present with stroke-related visual impairment. These include patient recognition that visual symptoms are new and not related to 'natural ageing process', recognition that visual symptoms alone would most likely not be seen as being caused by stroke, recognition that patients might be more likely to present to eye care professions with visual symptoms alone (particularly if symptoms were noted at home) and patient reliance on stroke teams to help with eye service referrals where reporting of visual symptoms was made when under the care of hospital stroke and rehabilitation teams.

Table 1

Reporting of symptoms	Possible presenting services	
Start – at onset of symptoms	A&E/Emergency department Care homes Eye clinics General practitioner GP NHS telephone service Optometry Paramedics/999 Pharmacists	Schools and HEIs Screening centres / specialist centres, e.g. diabetes Sports fixtures TIA clinics Walk-in centres Workplace
Early – at hyper- and acute stages	Acute units – stroke, ICU, neuro, etc. Charities Community health service Community stroke team	Eye clinics Medical / health students Neuro rehab Therapists
Late – at sub-acute and chronic stages	Care homes Charities Community health service Community stroke team District nurses / visiting carers Eye clinics	General practitioner GP Medical / health students Optometry Social services Therapists
Throughout	Charities Community health service Community stroke team District nurses Eye clinics Family / friends General practitioner GP	Medical / health students NHS telephone service Optometry Pharmacists Social services Specialist services Workplace occupational health

## **Referral – visual symptoms as part of stroke presentation**

Presence of visual symptoms alone is a potential risk for delayed diagnosis of stroke whereas visual symptoms in association with more commonly recognised features of stroke as depicted in the FAST adverts would not usually delay diagnosis of stroke. The late reporting of visual symptoms may be possibly explained by the patient not being aware of their visual problems in the early acute stages of stroke, their belief that visual symptoms might not be related to their stroke but due to problems with their eyes rather than their brain, or being unable to report their visual symptoms earlier because of communication or cognitive difficulties.

For stroke survivors with visual symptoms who present within 4 hours of onset of symptoms, patients should be referred direct to the emergency department A&E where as those presenting more than 4 hours but within 24 hours of stroke should be referred to urgent medical/stroke team including services such as emergency department A&E, rapid referral centre / equivalent, TIA hospital clinic and stroke hospital clinic (table 2). Those presenting longer than 24 hours following onset could be referred to GP general practice, Early support discharge team, Community stroke team, Hospital stroke unit, or Optometrist dependent on whether symptoms were purely visual or in addition to other neurological symptoms and ensuring appropriate preventative treatment for further strokes. However, for those who present at longer than 24 hours but still within days of onset, it remains essential for these stroke survivors to be seen quickly for appropriate assessment and management with a view for preventative stroke care.

**Table 2**

<b>Time of onset of visual symptoms</b>	<b>Referral service</b>
Within 4 hours of onset	Emergency department A&E
More than 4 hours but within 24 hours of onset	Emergency department A&E Rapid referral centre / equivalent Stroke hospital clinic TIA hospital clinic
More than 24 hours after onset	Community stroke team Early support discharge team GP general practice Hospital stroke unit Optometrist – high street
Note: ensure appropriate preventative measures for further stroke risk	

## **Referral – visual symptoms with an established stroke diagnosis**

Key visual functions affected by stroke are impaired central vision, peripheral visual field loss, eye position/movement disorders and visual inattention (table 3). Where referrals are being made for stroke survivors within the hospital service, such referrals are made through internal requests from stroke teams to eye services – where the hospital has both services. Some hospitals may not have an eye service and thus, local arrangements should be developed to enable appropriate referral to nearby eye services.

Referral can be made to orthoptists for visual conditions affecting **eye position, eye movements and/or visual fields**. Where impaired **visual acuity** is the issue, referral can be made to the hospital optometrist, ophthalmologist or to the low vision service. Where **visual inattention** is the issue, it is likely that stroke team occupational therapists would care for these stroke survivors but with the added option of referrals to orthoptists and/or neuro psychologists where appropriate and dependent on local policies and procedures.

Where referrals are being made for stroke survivors in the care of community services, referrals could be made to community optometry and low vision, occupational therapy and neuro psychology services respectively for issues relating to **visual acuity and visual inattention**. For visual conditions affecting **eye position, eye movement and visual fields**, referral was recommended back to hospital orthoptic services. For example, orthoptic services accept direct referrals from community services, optometry practices and GPs. Again, local arrangements should be developed to establish links between community and orthoptic services to enable faster and appropriately-directed referrals. Prompt early referrals are recommended to facilitate faster access to visual rehabilitation.

**Table 3**

<b>Visual condition</b>	<b>Types</b>
Central vision impairment	Impaired central vision occurring subsequent to stroke onset may be postulated to occur because of stroke-related impact to the visual pathway.
Peripheral visual field loss	Complete homonymous hemianopia is the most common form of visual field loss with partial hemianopia and quadrantanopia visual field defects also occurring frequently.
Eye position/movement disorders	Saccadic dysmetria is the most common form of ocular motility disorder with other frequently occurring disorders including cranial nerve palsy, gaze palsy, strabismus, reduced near point of convergence and nystagmus.
Visual inattention	Visual inattention is the most commonly occurring visual perceptual disorder but, in addition, visual perceptual disorders may include cortical impairment of colour perception or depth, alexia and visual agnosia.

## Vision services

The clinicians and professional staff that stroke survivors may meet in vision services vary dependent on whether they are based in hospital or community services (table 4).

**Table 4**

Vision service	Role
Eye Clinic Liaison Officer (ECLO)	Also known as Sight Loss Adviser or Vision Support Officer. ECLOs help patients understand the impact of their diagnosis and providing them with emotional and practical support for their next steps. They work closely with medical and nursing staff in the hospital eye clinic, and the sensory team in social services.
Neuro psychologist	A psychologist that specializes in understanding how the structure and functions of the brain and nervous system plays a role in behavior and cognition. They have a thorough understanding of neuroanatomy and focus on brain-behavior relationships. They also strive to understand the connection between the brain and how neurological disorders can affect the mind including learning, behavior and feelings a person may have.
Occupational therapist	Provides practical support to empower people to facilitate recovery and overcome barriers preventing them from doing the activities (or occupations) that matter to them. This support increases people's independence and satisfaction in all aspects of life.

Ophthalmologist	A medically trained doctor who commonly acts as both physician and surgeon. (S)he examines, diagnoses and treats diseases and injuries in and around the eye.
Optometrist	Trained to examine the eyes to detect defects in vision, signs of injury, ocular diseases or abnormality and problems with general health, such as high blood pressure or diabetes. They make a health assessment, offer clinical advice, prescribe spectacles or contact lenses and refer patients for further treatment, when necessary.
Orthoptist	Allied health care practitioners who specialize in disorders of eye movements and diagnostic procedures related to disorders of the eye and visual system.
Vision Rehabilitation Officer (VRO)	Works in an adult social services team with those who are blind or partially-sighted. Their aim is to provide high quality specialist assessment and support to adults who are considered to have a visual impairment and/or dual sensory loss, maximising their independence, safety and dignity.

## Support services

Support services are of central importance in providing information supplementary to hospital services. Support services are considered to be those based both within hospital services as well as those based in the community and included NHS services, social services, charity and professional organisations (table 5).

**Table 5**

Potential support services	Notes
CVI (Certificate of Visual Impairment)	Can only be signed by an ophthalmologist so requires a hospital eye service referral to ophthalmology. The CVI form is issued to a patient assessed by a consultant ophthalmologist as being visually impaired. The form is then sent to social services who work with the person to assess what help and advice they need.
RVI (Referral of Visual Impairment)	Used where registration is not appropriate or where the patient has declined registration but wants advice and information about the difficulties caused by loss of vision.
Being registered as partially sighted or blind enables a person to access a range of benefits to help them manage their condition and the impact it may have on their lives. Registration is voluntary, and access to benefits and social services is not dependent on registration.	
Low vision service	The assessment aims to discuss your eyesight condition and the difficulties this may present in your day to day life. It considers what you would most like help with, such as reading cooking instructions, paying bills, watching television, dealing with medicines or tablets, completing school work or even working on hobbies. You can try out a number of different low vision aids such

	as handheld or stand magnifiers, typoscopes, task lights, electronic magnifiers, shields and/or reading stands etc. specific to your requirements.
Dependent on local services, this may be provided in the hospital eye service or in community eye practices	
ECLO (Eye Clinic Liaison Officer)	Also known as Sight Loss Adviser or Vision Support Officer. ECLOs are key in helping patients understand the impact of their diagnosis and providing them with emotional and practical support for their next steps. They work closely with medical and nursing staff in the hospital eye clinic, and the sensory team in social services. They provide those recently diagnosed with an eye condition with the practical and emotional support which they need to understand their diagnosis, deal with their sight loss and maintain their independence.
VRO (Visual Rehabilitation Officer)	Works in an adult social services team with those who are blind or partially-sighted. Their aim is to provide high quality specialist assessment and support to adults who are considered to have a visual impairment and/or dual sensory loss, maximising their independence, safety and dignity. They provide expertise and support to teams across Adult Services to assist in the development of knowledge in relation to visual impairment and/or dual sensory loss.
Charity Organisations e.g. RNIB, the Stroke Association, Henshaw's, ESME's umbrella, Headway, Brain Charity (list not exhaustive)	These charities and professional organisations provide specific support with regard to vision impairment, stroke and brain injury information resources and practical information, for example relating to return to work, activities of daily living and driving.

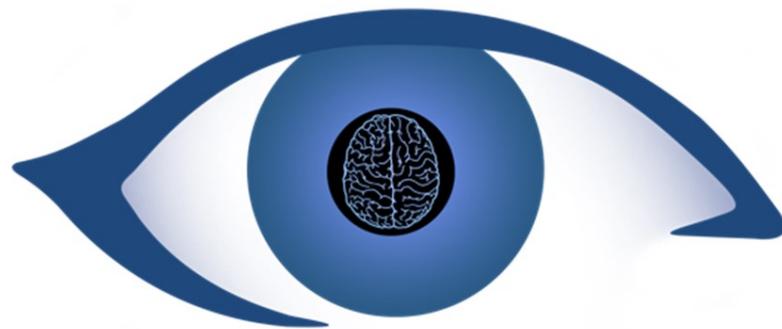
<p>Professional organisations e.g. Royal College of Ophthalmology, British &amp; Irish Orthoptic Society, Royal College of Occupational Therapists, College of Optometry (list not exhaustive)</p>	
<p>Research organisations e.g. University College London, University of Durham, University of Liverpool (list not exhaustive)</p>	<p><a href="http://www.readright.ucl.ac.uk">www.readright.ucl.ac.uk</a> <a href="http://www.eyesearch.ucl.ac.uk">www.eyesearch.ucl.ac.uk</a> <a href="https://www.dur.ac.uk/psychology/research/drex/">https://www.dur.ac.uk/psychology/research/drex/</a> <a href="https://www.liverpool.ac.uk/psychology-health-and-society/departments/health-services-research/research/vision/resources/">https://www.liverpool.ac.uk/psychology-health-and-society/departments/health-services-research/research/vision/resources/</a></p>

Key advantages of these support services are the provision of information targeted through an individual needs assessment. Providing key resources and information is important in promoting awareness of potential for vision problems in stroke survivors.

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## VISION



Vision, Orthoptic and Brain Injury  
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