

Reduction in blindness rates since the introduction of digital photographic screening in an English diabetic eye screening programme

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Background

In 2000 diabetic retinopathy was reported as the leading cause of blindness in a working age population in England and Wales. In 2003 a national body was established to support the implementation of systematic diabetic eye screening programmes in England which would annually screen diabetic patients in order to identify those patients at risk of vision loss.

Aim

In 1998 the Gloucestershire Diabetic Eye Screening Programme (GDESP) started screening patients. This service was at the forefront of what became a national service.

This study aims to look at the data acquired by GDESP since 2005 and clarify if rates of blindness and vision loss have declined since the introduction of digital photographic screening in Gloucestershire.



Certification

Visual acuity and visual field of the better seeing eye (when wearing prescribed correction) are used to determine Severely Sight Impaired (SSI) and Sight Impaired (SI). We report here only Certifications where the main cause was diabetic eye disease. Certification provides benefits to patients and allows health and social services to budget for this cohort of people.

Severely Sight Impaired (SSI)	Sight Impaired (SI)
Visual acuity (VA) of <math><3/60</math> with a full visual field	VA of 3/60 to 6/60 with a full field of vision
VA between 3/60 and 6/60 with a severe reduction of field of vision	VA of up to 6/24 with a moderate reduction of field of vision or with a central part of vision that is cloudy or blurry
VA of 6/60 or above but with a very reduced field of vision, especially if a lot of sight is missing in the lower part of the field	VA of 6/18 or even better if a large part of the field of vision, i.e. a whole half of the vision, is missing or a lot of the peripheral vision is missing

Source: Royal National Institute of Blind People

Methods

In order for patients to be certified SSI or SI a Certificate of Vision Impairment (CVI) needs to be completed by a consultant ophthalmologist. Copies of the certificate are passed on to Gloucestershire Hospitals NHS Foundation Trust Business Intelligence Unit (BIU), Moorfields Eye Hospital Certification Office and Gloucestershire Social Services. GDESP electronically obtains the details of new SSI and SI certificates collected by the BIU.

Results

Time period	Severely Sight Impaired (SSI)		
	n	Annual rate per 100,000 people with diabetes	95% c.i.
2005 to 2008	16	25.4	(15.0 to 40.4)
2014 to 2017	2	2.0	(0.3 to 6.7)
Time period	Sight Impaired (SI)		
	n	Annual rate per 100,000 people with diabetes	95% c.i.
2005 to 2008	26	41.3	(27.6 to 59.6)
2014 to 2017	10	10.0	(5.1 to 17.9)

Fig. 1

Certifications for Vision Impairment due to Diabetic Eye Disease in Gloucestershire 2005-08 and 2014-17

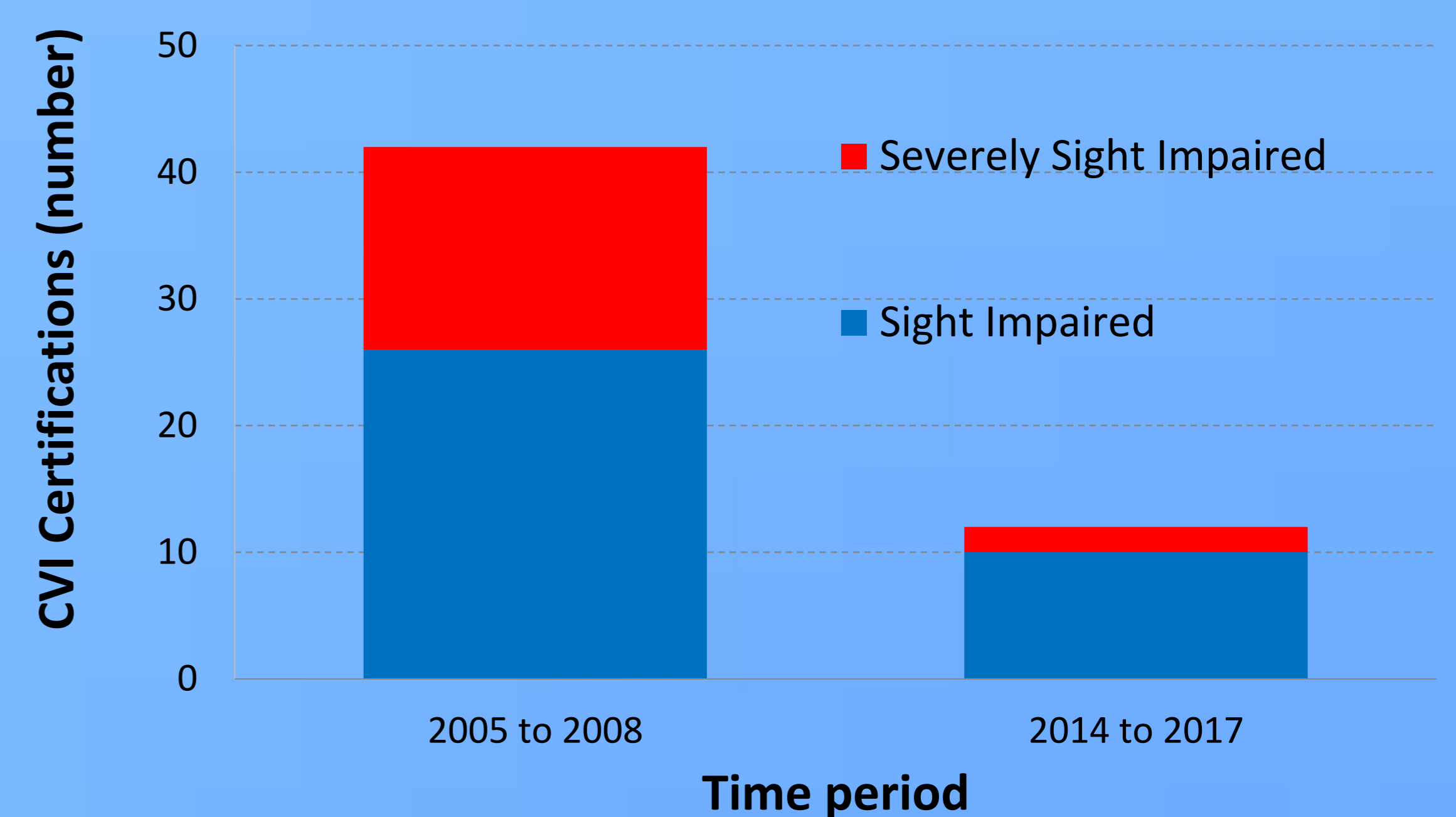


Fig. 2

Year	2005	2017
Patients eligible for screening	15,700	35,100

Conclusion

Auditing this CVI data demonstrates that the systematic screening programme is fundamental in the reduction of blindness rates (Fig.1.), particularly when the number of patients eligible for screening by GDESP has more than doubled since 2005 (Fig. 2). However, other contributing factors that could influence the reduction in blindness include earlier diagnosis of diabetes, tighter control of glycaemia and hypertension and improved treatments.