Screening for diabetic retinopathy

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Diabetic retinopathy is a well-documented complication of both type 1 and type 2 diabetes. The characteristics of diabetic retinopathy were described shortly after the invention of the ophthalmoscope in 1851 by Helmholtz. By 1884 retinopathy was thought ‘to be rare but with a very unfavourable prognosis for vision’.1 Diabetic retinopathy is now most common cause of blindness with in the western world.2

Landmark trials such as DCCT,3 UKPDS4 and EURODIAB5 have helped us to identify many of the factors influencing the development of diabetic retinopathy and the treatments available for it. Effective screening and early intervention are vital for identification of the disease. If detected at an early stage diabetic retinopathy can be managed and treated. In view of this, along with good glycaemic control and blood pressure regulation, the regular eye examination should be an integral part of ongoing diabetes care.

The psychological burden of chronic complications are ever present for people with diabetes, ‘fear of visual loss is preoccupying and intense for a substantial proportion of the diabetic population’.6 For those who do go on to develop visual problems, difficulties can occur in all aspects of life, including the daily management of diabetes.

The St Vincent’s Declaration identified problems faced by the increasing incidence of diabetes. General goals and five year targets were set; one of which was to reduce new incidence of blindness in the diabetic population by one third or more.

Most developed countries have long had robust retinopathy screening programmes; however it is only since 2013 that such a service has been implemented here in the Republic of Ireland (ROI)
Background
According to the most recent figures from the Central Statistics Office the population is approximately 4 million people. The SLAN study estimates that 147,000 adults in the ROI have a clinical diagnosis of diabetes with a further 41,000 undiagnosed (6.1% of the population). This figure is estimated to increase to 278,850 people (7.5% of the population) by 2030.

Figures from the National Council for the Blind of Ireland (NCBI) identify diabetic retinopathy as the most common cause of blindness amongst adults in the working population. In 2012 it was reported that one person per week is losing their sight to diabetic retinopathy with the numbers of those registered blind doubling since 2003. In research carried out by Diabetes Ireland amongst their members, 44% of patients stated that visual problems was what worried them most about diabetes, although 30% of them are not receiving any annual eye examination.

The Liverpool declaration 2005 review of progress 5 years on from the St Vincent’s Declaration declared, ‘European countries should reduce the risk of visual impairment due to diabetic retinopathy by 2010 by: systematic programmes of screening reaching at least 80% of the population with diabetes; using trained professionals and personal; and universal access to laser therapy’.

In response to this (2007) the Diabetes Expert Advisory group (EAG) was formed, it made recommendations that screening for DR should be made a priority service for 2008. The Health Service Executive (HSE) in 2008 published its strategy Framework for Development of Retinal Screening Programme for Ireland. This strategy reviewed screening services available throughout the ROI at the end of 2007. It looked at services throughout the country divided into the areas of South, West, Dublin North East and Dublin Mid Leinster. Although a HSE pilot study was in progress in the west of Ireland and an ophthalmology group in Cork, the general conclusion was that screening throughout all areas was on an ‘ad hoc’ basis. Some good practices were found to be in existence but on the whole best practice and quality standards were not achieved. Lack of funding was identified as the single most influential factor in the non-provision of a service. After securing funding from government for the programme it was not until March 2013 that the programme commenced its first screening of patients.

The National Cancer Screening Service (NCSS – now known as the National Screening Service, NSS) was chosen to provide this quality assured country-wide service. NSS have wide ranging experience in the delivery of screening programmes; they are currently responsible for population based cancer screening programmes encompassing breast check, cervical check and bowel screen. Diabetic RetinaScreen is the first non-cancer population based screening programme to be undertaken by NSS.

Following a rigorous process under the EU procurement guidelines two providers were chosen to deliver services to the NCSS; Global Vision in the Leinster area (excluding Meath) and Medical Imaging Diabetic Retinal Screening Service (previously known as Medical Imaging UK Limited) for the rest of the country.

Diabetic RetinaScreen offers free screening to all patients living in Ireland over 12 years of age with both type 1 and type 2 diabetes. Initial uptake of the service has been low along with a high DNA rate, however numbers are now improving and it is expected the amount of people screened each year will rise. An advertising campaign is now in place to raise awareness of the need for retinal screening and the service available.

The appointment
During the screening appointment two mydriatic digital images of each eye are taken by highly trained screeners. Each image is evaluated by two independent graders, using set grading criteria for both retinopathy and maculopathy (a tertiary assessment may be carried out if deemed necessary). Sometimes other eye conditions may also be identified. Internal and external validation of results is ongoing.

Following the screening session written results are sent within 3 weeks to both the patient and the GP. Along with the results the patient will be advised of either an appropriate time for recall or a referral on to ophthalmology services for further investigation or treatment. Patients are able to request a copy of results to be sent to a second clinician e.g. consultant endocrinologist, ensuring continuity of communication across all service.
Implications for general practice
As with the implementation of any new screening service there are implications for general practice.

Currently patients are able to check for themselves if they are on the register; to do this they can call the Freephone number 1800 45 45 55. Patients however are not able to register themselves for this; it is the responsibility of a clinician, including those working within general practice to register their patients. Any patients diagnosed since 2012 will not be automatically added to the register; the register is therefore dependent upon the vigilance from clinicians to remain up to date. Practices can check if their patients are registered or if not can register patients by ringing the above Freephone number (choose option 1) or online via www.diabeticretinascreen.ie . If using the online option the MCRN of the GP is required to progress with the registration process.

Other information required includes patient’s name, date of birth, address, and GP details. A complete list is of the information is available on the website under the category of health professionals: how to verify a patient is on the Diabetic RetinaScreen register.

Patients attending general practice for routine appointments for diabetes or opportunistically should be educated on the importance of this free service, why they should attend and also that this service has taken over from any regional screening services they may have been previously attending. Some helpful reminders and practical tips for our patients when attending an appointment include:

- Those under 16 years of age must be accompanied by a parent or guardian.
- Patients will not be able to drive for several hours after the eye drops have been administered, therefore another driver or a different form of transport after screening is essential.
- Patients may also find it more comfortable to bring a pair of sunglasses to wear after screening, especially on a sunny day.

For any healthcare professionals wishing to improve their own knowledge of diabetic retinopathy an education module is available via the website. The module covers four topics; diabetes and diabetic retinopathy, diabetic retinopathy screening, the screening test, and follow up and patient education.

Retinal screening has another advantage besides identifying treatable eye disease before sight loss occurs; it allows us in general practice to intervene from even the earliest stages of retinopathy. Even with minor background changes which don’t require referral to an ophthalmologist, early intervention is vital in reducing progression to more advanced disease. Therefore on receiving results from the retinal screening service it offers general practice an opportunity to review the patients HbA1c, blood pressure and cholesterol levels to ensure they are within recommended targets. If targets are not being achieved a prompt review of the patients lifestyle and medications should be undertaken. For patients who have difficulty in attending regular care opportunistic screening remains a must.

We should remain vigilant for those patients with any significant shifts in glycaemic control or for any patient planning a pregnancy or who becomes pregnant. Appropriate advice and referral to the national guidelines should be followed as it is well documented that an acute deterioration of diabetic retinopathy can occur at this time.

Conclusion
The recent implementation of a national screening service has been a long awaited but welcome addition to services for people with both type 1 and type 2 diabetes in the Republic. The addition of a robust screening service, high standards for education and
Free regular screening and treatment of diabetic retinopathy of the eyes for people with diabetes aged 12 years and older.

• Diabetic retinopathy is a common complication of diabetes which affects the small blood vessels in the lining at the back of the eye, and over time, can affect eyesight.

• Regular, free diabetic retinopathy screening, using specialised digital photography, can detect diabetic retinopathy before there are any changes in eyesight.

• If your patient is on the register, they will be invited by letter to attend a free diabetic retinopathy screening, which will be arranged at a local screening centre.

FIND OUT MORE ABOUT FREE DIABETIC RETINOPATHY SCREENING

Freephone 1800 45 45 55 | www.diabeticretinascreen.ie
excellence in clinical care should significantly prevent the number of cases of diabetic retinopathy, thus improving quality of life for those patients with both type 1 and type 2 diabetes.

References
11. Ireland D. Majority of people unaware of the leading cause of blindness in working age population. [www.lifeandfitnessmagazine.com; 2014].