Situation analysis of diabetic retinopathy services in eleven countries

BY PETER BLOWS, TUNDE PETO, HEIKO PHILIPPIN AND MARCIA ZONDERVAN

A five-year project funded by The Queen Elizabeth Diamond Jubilee Trust is facilitating development of diabetic retinopathy services (DRS) to reduce unnecessary blindness in 10 Commonwealth countries through the establishment of a capacity-building network, the DR-NET part of the Commonwealth Eye Health Consortium [1].

The DR-NET was established between 17 eye institutions, all participating in the VISION 2020 LINKS Programme based at the London School of Hygiene & Tropical Medicine. The 17 institutions are in 10 Commonwealth countries, eight of these in Africa plus Jamaica and the Pacific Islands; Indonesia has also joined the network.

In order to guide planning, training and development of DRS at each location, a situation analysis was undertaken to understand the current provision within the network.

Two waves of questionnaires, with increasing levels of detail, were developed and distributed by the DR-NET steering group in 2014. Enquiries ranged from basic operational questions to more detailed statistical requests such as "How many patients received laser treatment in 2013?" All 17 institutions returned each questionnaire and the data were summarised, in a tabular format, to provide a baseline for the DR-NET.

Among other significant findings, it was observed that across the network, six sites have a relevant DRS database, 11 have fundus imaging equipment and 14 sites have appropriate treatment facilities. It was evident that, apart from a few sites, lack of a DRS database was common throughout the network.

The situation analysis confirmed that the 17 partners are in differing stages of DRS development but are well positioned to share their experiences within the DR-NET.

An inaugural DR-NET workshop was held in London in November 2014 and reported in Eye News [2]. During the workshop, the participants from each of 17 sites were provided with their situation analysis summary sheets in order to guide their planning.

Using the situation analysis data, a site-specific plan was developed by each institution, to increase the number of patients accurately diagnosed and treated. These plans concentrated on the first two years;

Figure 1: A summary of situation analysis data from one of the 17 DR-NET sites – Kilimanjaro Christian Medical Centre (KCMC), Tanzania.

specific actions were identified and the plans were shared with the teams from all the other sites. A commitment was made by each site to increase the number of DR patients treated by at least one per week for the five years of the project (see box below).

As a result of the workshop, the teams, while developing their own services, also now support each other via the DR-NET technical platform with the assistance of their UK VISION 2020 LINK partner. The platform contains a wealth of resources shared by the partners including training materials, workshop presentations and the two-year action plans [3]. Patient screening and treatment figures are uploaded

Patient screening and treatment figures reported by the 17 sites of the DR-NET as of March 2015:

- **2003** patients screened
- **320** received laser treatment
- **96** received IV-injections
- **12** received VR surgeries

The DR-NET has established a target of preventing a minimum of 37,500 years of blindness over the course of the five-year project. This will be achieved by treating one more patient every week at every site for the duration of the project. This will enable at least 3,750 more patients to be treated, and assumes that patients live an average of 10 years after treatment. This figure was based on 15 sites – two have been added to the network since the workshop.
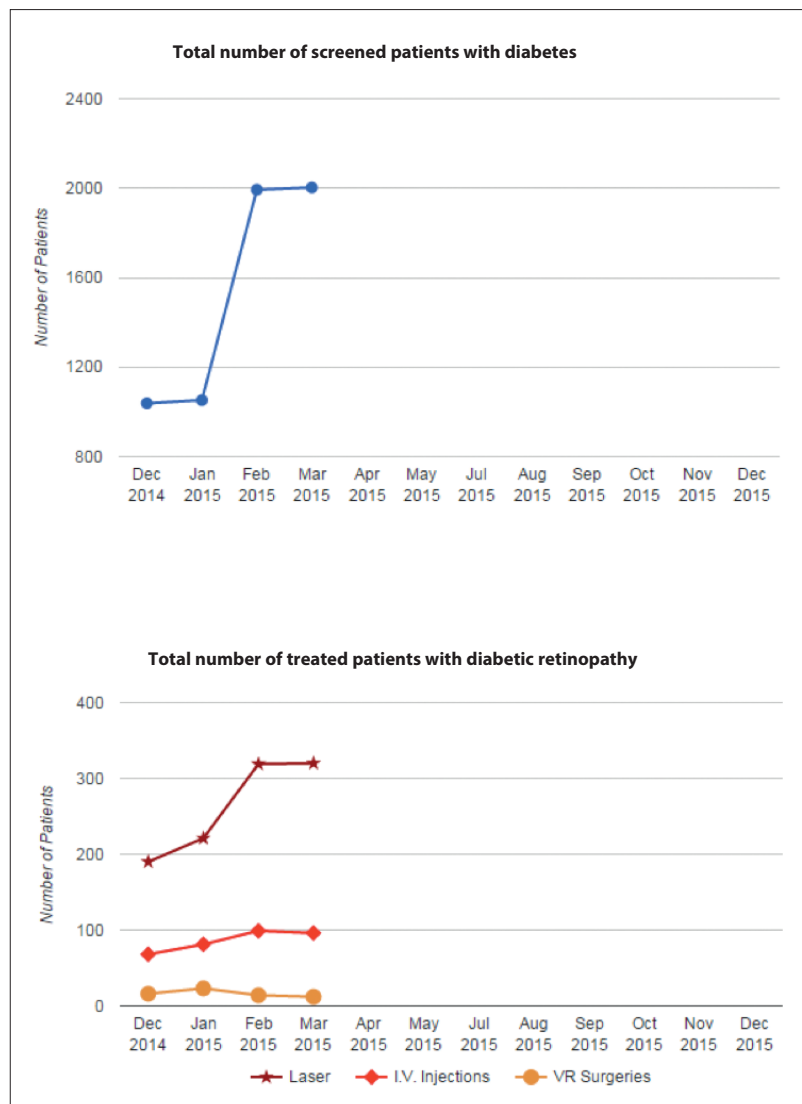
Figure 2: Graphs from the virtual network platform.

onto the platform and shown as activity charts, which will be monitored throughout the project.

The workshop was attended by representatives from the Ministry of Health from each country. As well as the local target to increase DRS in their catchment areas, each participating eye care team was also charged with developing a national framework for DRS for each country. There is already progress: Botswana has developed a new National Eye Care Plan in which expanding DRS is a specific objective; Kitwe, Zambia is moving forward on expanding the programme nationally, supported by the VISION 2020 LINK with Frimley Park Hospital.

A second workshop is planned for two years into the project, where teams from the 17 institutions will again be invited to share their learning and review progress made towards their aim of improving DRS for their catchment population and developing a national framework. Further planning for the following three years of developing DRS will be undertaken at that point.

There is a huge need to develop DRS in the 11 countries of the DR-NET. Obtaining detailed, up-to-date situation analysis data for each participating centre (17 in total) has been shown to be invaluable both in the process of preparing a meaningful plan for DRS and in providing baseline data from which to show development of DRS over the coming years.

VISION 2020 LINKS Programme
Diabetic Retinopathy Team Training Network

Situation Analysis Matrix

	Botswana	Ghana	Indonesia	Jamaica	Kenya, Kenyatta	Kenya, Mombasa	Malawi, Blantyre	Malawi, Lilongwe	Nigeria, Calabar	Nigeria, Lagos	Tanzania, KCMC	Tanzania, Mbeya	Tanzania, Muhimbili	Uganda, Kampala	Uganda, Mbarara	Zambia	Fiji
Do you have a diabetic retinopathy patient database in your ophthalmology department?	No	No	No	No	No	No	Yes	No	No	Yes	Yes	No	Yes	No	No	Yes	Yes
Do you do diabetic retinopathy screening in your ophthalmology department?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Does your eye department have regular contact with a diabetologist in your institution?	No	Yes	Yes	No	No	No	Yes	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Do you do regular visual acuity tests in diabetics, including those with no signs of DR?	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Do you have retinal imaging equipment?	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes
Do you have diabetic retinopathy laser treatment facilities?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Have any staff in the ophthalmology department had DR screening training?	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Is diabetic retinopathy a priority in your national prevention of blindness or v2020 plan?	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes
Does the ministry of health or your institution run any diabetes awareness programmes?	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 1: Key data from the questionnaire responses from 17 DR-NET sites.

Some comments from participants in DR-NET

"It is very informative, learning from the other centres some areas of good practice and being motivated to do more from where we are."

"I wish the momentum can go higher and higher in order to fight this deadly disease. Learning from other fellow mates is impressive."

"It is extremely important to share information amongst countries."

"It is fantastic that such a programme is provided to other parts of the world to reduce the incidence of avoidable blindness."

Development and use of a DR database

At the DR-NET workshop, William Makupa and Heiko Philippin from Kilimanjaro Christian Medical Centre (KCMC) in Tanzania described their experiences from the Kilimanjaro Diabetic Programme (KDP), including the successful establishment and use of their MS Access database. This is an example of the shared learning that the project aims to facilitate.

The database stores general data about all registered diabetic patients including biometric data, details about their diabetes and other impairments. A list of visits in the KDP is kept for all patients. Visits are classified as screening in a peripheral hospital, detailed assessment at the referral hospital (KCMC) and treatment visit at KCMC. The whole journey of the patient from being screened, referred, assessed in detail and treated if necessary is being stored and monitored.

SMS or calls are used to inform patients about their screening results and next appointment or as a reminder if they miss an appointment. Grading results are stored, as well as other clinical information, to provide long-term follow-up. Experiences from the KDP database and other systems in different eye care projects are now being used to develop a new, more flexible system that will also incorporate communication with PEEK smartphones [4].

References

1. Diabetic retinopathy LINKS network. Commonwealth Eye Consortium. http://cehc.lshtm.ac.uk/dr-links/ Last accessed October 2015.
2. Poore S, Foster A, Zondervan M, et al. Commonwealth nations join forces to prevent blindness from diabetes. *Eye News* 2015;**21(5)**:33-6.
3. Diabetic Retinopathy Network website. https://sites.google.com/site/drnetcomm/home Last accessed October 2015.
4. Portable Eye Examination Kit (Peek). Commonwealth Eye Consortium. http://cehc.lshtm.ac.uk/peek/ Last accessed October 2015.

A patient being examined by nurse Baele Fidanzi in Donga Diabetes Clinic in Francistown, Botswana – Botswana is one of the countries in the DR-NET.

Business card-sized promotional materials are available at health centres and the Ministry of Health in Botswana. They were developed as part of Project Pono Letlotlo, developed through the VISION 2020 LINK between the Botswana Ministry of Health and Addenbrooke's Abroad, and funded by 'Seeing is Believing'.
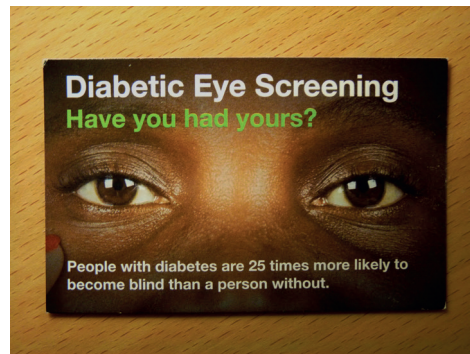
Peter Blows,
Senior Ophthalmic Image Grader, NIHR Biomedical Research Centre, Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology, London, UK.

Tunde Peto,
Head of Reading Centre, NIHR Biomedical Research Centre, Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology, London, UK.

Heiko Philippin,
Head of Postgraduate Training and Glaucoma Consultant, Eye Department, Kilimanjaro Christian Medical Centre, Moshi, Tanzania.

Marcia Zondervan,
VISION 2020 Links Programme Manager, International Centre for Eye Health, ICEH, LSHTM, Keppel Street, London, WC1E 7HT, UK.
E: marcia.zondervan@lshtm.ac.uk
www.iceh.org.uk