

Commentary: Strengthening the health system for providing care for diabetic retinopathy in South Asia

One of the targets set out by the United Nations, in its 2030 Agenda for Sustainable Development, is to reduce premature mortality from noncommunicable diseases.^[1] Diabetes mellitus (DM), one such noncommunicable malady, is a global epidemic. It is estimated that by 2030, there will be 439 million people affected by DM, more in developing countries (especially South Asia); resulting in a heavy burden on the health system.^[2] The increasing prevalence of DM has led to an alarming increase in the absolute numbers of diabetic retinopathy (DR) in Asia.^[3] The increased prevalence of diabetes in the South Asian region has been attributed to regional changes in disease patterns from communicable to noncommunicable diseases.^[4]

To tackle the burden of DM and DR, there is a need to strengthen health systems, increase awareness about the problem, and develop adequate human resources. A well-trained team includes diabetologists, physicians, retina specialists, general ophthalmologists, optometrists, and other Allied Health Personnel (AHP). However, information is not available on the existing gaps for delivery of care in the health systems of developing countries. The World Health Organization has defined a health system as 'all organizations, people, and actions whose primary intent is to promote, restore, or maintain health'.^[5] In order to develop an effective action plan to tackle DM, the different elements of the health system namely – governance, human resources, finance, health information, consumables, technology, and service delivery – have to be analyzed and understood in detail.^[5]

Gilbert *et al.* reviewed the eye care infrastructure and the human resources in 86 units located in 11 major cities of India and found that there were significant gaps in terms of infrastructure and HR, including skills and training levels.^[6] Though nearly 70% had a dedicated retina unit, less than 60% had a full-time retina specialist. In terms of other HR, there was a higher proportion of nursing staff; however, availability of other personnel was inadequate.^[6] Apart from this, there was a lack of engagement with physician and endocrinologist in these centers.^[6] However, the results could be biased because this study included only major cities and did not include the smaller towns and villages. In a similar study, Piyasena and colleagues looked at institutions in different levels i.e. primary, secondary, and tertiary and

found that most of the retina specialists and ophthalmologists are at the tertiary level in the capital cities.^[7] Similarly, most of the medical officers, optometrists, and other AHP were in the capital city. The training levels were also quite different with the medical officer having the least skills. In terms of equipment, very few had facilities such as laser, fundus photography, optical coherence tomography (OCT), and ocular angiography; and where available, it was mostly in the capital cities. Both these studies point out the inadequacies in the health systems of developing countries in terms of providing care for diabetic retinopathy, including poor referral and feedback.

There is an urgent need to identify gaps and strengthen health systems to provide care for diabetic retinopathy. Care for DR can be improved by taking the following steps to strengthen health systems:

1. Involvement of key stakeholders to formulate policy for DM and DR care at primary, secondary and tertiary levels of care; which has to be reviewed periodically
2. Allotment of adequate funds
3. Availability of well-trained HR at each level of care. Most of the services can be delivered by the AHP and they could play a vital role in delivery of care in terms of creating awareness, ensuring periodic examination, follow-up care, and lifestyle modification. Awareness can also be increased by involving physicians and other staff who take care of patients with diabetes
4. In a community set up, vision screening can be done by appropriately trained personnel, including general practitioners, nurses, and health care workers; with a well-defined and documented curriculum and objectives. This will increase access to eye care through adequate and timely referral of individuals with significant visual morbidity. The key lies in training and deployment of allied health personnel, who can play a significant role in the reduction of preventable blindness^[8]
5. Rapid assessment studies can be conducted every 5–10 years to collect comparable data. A program for monitoring, collecting and analyzing data associated with DR, its risk factors, and management can be established
6. Proper use of technology such as teleophthalmology to transmit digital retinal images to trained health personnel, a retina specialist or an endocrinologist, will make care cost-effective.

Screening and management of DM and its most common and dreaded sequelae DR need a different approach because of the long-term care required; unlike the approach for dealing

with cataract. This review highlights the need to strengthen the health system, by developing systematic DR screening programs; strengthening human resources at all levels; and development of a sustainable infrastructure to combat visual impairment caused by DR.

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