OBSERVATIONS

A Novel Model to Deliver Advanced Eye Care for People With Diabetes Living in Resource-Poor Settings: Results of Care Provided to Date

An estimated 50.7 million people in India have diabetes (1), and 70% of the Indian population live in rural areas (2). Diabetic retinopathy (DR) develops in more than 75% of patients with diabetes within 15–20 years of diagnosis (3,4). We have developed a model of distributive advanced outreach care designed to bring screening and treatment of DR to rural and semi-urban areas of the state of Karnataka in India.

Nicknamed Nayana—or beautiful eyes in Hindi—the specially designed advanced eye care treatment unit (AETU) van is custom-built on a cargo chassis from Ashok Leyland Ltd. of India. The van has a 2 + 1 driver’s cabin and an insulated air-conditioned treatment chamber. The van carries its own 7-kVA generator, as well as on the mobile unit. The AETU van is equipped with an emergency medical kit, a laryngoscope, Ambu bag, and oxygen. During its field halt, the van is stationed at or very close to a medical facility.

The project area serves a population of 16.3 million people. The van visits 23 locations on fixed calendar dates of every month across 13 districts covering a distance of 4,500 km per cycle. The van has been in operation since 23 February 2006, treating an average of 80 patients per week. Overall, the van has provided exams to 29,000 patients, and 1,017 fluorescein angiograms and 6,998 laser treatments. Additionally, 513 sight-saving vitreoretinal surgeries have been performed at the base hospital, most of them either free of charge or at heavily subsidized rates.

The Nayana model has enhanced local capacity and skills through training and sharing of expensive equipment among semi-urban and rural ophthalmologists, empowering them to provide hitherto nonavailable services to their local communities. This model fills the gap between required and available services for DR in countries such as India. This approach will bring quality care for DR to the local population at a relatively low cost.

Krishna R. Murthy, mrcophth1
Praveen R. Murthy, msc1
Subbakrishna Rao, mscc1
Gowri J. Murthy, frcophth1
Anil Kapur, md2
Pierre Lefebvre, md, phd, frcp, maec3

From the 1Vittal International Institute of Ophthalmology and the Prabha Eye Clinic and Research Center, Bangalore, India; the 2World Diabetes Foundation, Gentofte, Denmark; and the 3Department of Medicine, Division of Diabetes, Nutrition and Metabolic Disorders, University of Liege, Liege, Belgium, and the World Diabetes Foundation, Copenhagen, Denmark.

The program includes 83 ophthalmologists from 23 locations in 13 districts of Karnataka and the Vittala International Institute of Ophthalmology (VIIO), which agreed to comply with the established protocol of care. Patients requiring advanced vitreoretinal surgical procedures are referred to the base hospital. The ophthalmologists underwent training in the diagnosis and management of DR at VIIO as well as on the mobile unit.

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References