A Wholistic Approach to Resident Education


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“I am sending you to them to open their eyes and turn them from darkness to light, and from the power of Satan to God, so that they may receive forgiveness of sins and a place among those who are sanctified by faith in me”.

Acts 26:18
Mexico

- More 120 million population
- 60% population under poverty line
- CSR around 2,000 per million
- 50% population no coverage in Cataract
- Most populated Spanish speaking country in the world
Who we are:

- System of Eye Institutions
- Prevention of Blindness Program
- Develop human resources, oriented to serve the Needy.
- Followers of Jesus (Discipleship)
Expertise

- Experience developing 6 Eye clinics in Mexico
- One Eye clinic in Madagascar, Africa
- Assessment and Counseling Eye programs in Latin America through CBM, IEF, Orbis others.
Influence zone in Mexico

IV Baja California

IV Sinaloa

IV Montemorelos

IV Sureste
Hospital “La Carlota”
Montemorelos, Mexico

Commitment to serving the poor
ABOUT US

Dr. Gordon Miller and AIES

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Abroad

- Togo, África.
- Madagascar, África
- La Habana, Cuba
- El Progreso, Honduras.
- El Milagro, Ecuador.
- San Louis, Brasil
- Iquitos, Peru
- Siria, Middle East
- Rumania, Eastern Europe
- Ecuatorial Guinea, Zambia,
- Lesotho, África
- Manakara, Madagascar
Madagascar
Residents of Ophthalmology
Important Dates

- "Best Cataract Research Poster" at ASCRS Boston, 2000
Diabetic retinopathy: everybody’s business

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Diabetes is on the increase worldwide, due mainly to the increase in the number of people with type 2 diabetes. Type 2 diabetes is becoming more common because:

- People are living longer, and diabetes is more prevalent in older people.
- As people increasingly migrate to urban areas, exercise less, eat more, and eat less healthy food, more people are becoming obese—a primary cause of type 2 diabetes.

Diabetes increases the risk of a range of eye diseases, including cataract, but the main cause of blindness associated with diabetes is diabetic retinopathy (DR). DR usually develops between ten and twenty years after the onset of diabetes, and develops faster when diabetes is undiagnosed and untreated.

People with DR whose sight is at risk can be treated, most commonly with laser, to prevent visual impairment and blindness. Sadly, there is no treatment that can restore vision that has already been lost.

In 2020, the number of people with diabetes is expected to increase to 442 million, 54% more than in 2010. This means that, for every two people with diabetes today, there would be three in 2020. But there will be a greater increase in some of the world’s poorest regions (Sub-Saharan Africa, for example, the expected increase is 98%, which means the number of people with diabetes there would double. As the prevalence of diabetes increases, so will the risk of DR. In 2020, the global average risk of blindness from DR amongst people with diabetes was calculated as 0.75%, meaning that, out of every 133 people with diabetes, one person will go blind. If we simply apply this statistic to the expected number of people predicted to have diabetes in 2030 (440 million), the number of people likely to go blind from DR would be 3.3 million.

In the poorest regions, however, the average risk of blindness from DR tends to be higher than 1 in 133. An important reason for this is that the infrastructure and resources required to effectively address DR are either inadequate or nonexistent.

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The World Health Organization encourages the promotion and development of programmes for the prevention, detection, and management of diabetic retinopathy (DR). Such programmes must identify effective strategies and technology so that they can be adapted to the situation in each part of the world. Programmes must also be monitored and continuously improved.

The guidelines discussed in this article were developed by experts brought together during workshops hosted by the Vision 2020 Latin America technical subcommittee on DR and technical support provided by the Pan-American Association of Ophthalmology (PAAO). Although these guidelines have been developed for Latin America, we hope that the principles they contain will provide a good starting point for the planning of DR services in other low- and middle-income countries.

PLANNING

Planning diabetic retinopathy services: lessons from Latin America

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Key learning points

A diabetic retinopathy (DR) programme involves more than finding patients at risk. There must be agreed guidelines on who should be examined, regularly treated. An accurate register of patients with diabetes is essential, and may be difficult to develop.

- Retinal examination methods should be accurate, cost-effective, and cause minimal inconvenience to the patient. Both retinal photography and retinal examination by an ophthalmologist are accurate, but photography may be more cost-effective in the longer term. A referral network is essential so that any patient with diabetes found to have severe retinopathy is guaranteed to receive treatment as required.
- Ophthalmologists should work closely with physicians and others to ensure that all patients receive appropriate eye care, and diabetes management, to prevent blindness.

- Long-term sustainability, using cost recovery or subsidies (see article on page 23 for an example from India).

Estimating prevalence

The prevalence of DR can be difficult to estimate, and few estimates have been made in low- and middle-income countries. A survey, and one recently completed RAAB+DR has been developed to estimate the prevalence of DR in a population in a quick and affordable way. RAAB+DR has been tested in Mexico, South Africa, and Saudi Arabia, and the results and recommendations will be discussed in a future issue of this journal.

The prevalence of DR in Latin America was estimated in 1999. At the initiative of the Pan-American Association of Ophthalmology, 7,715 patients with diabetes from 16 countries were assessed. The study found that 40.2% showed some degree of DR, that 17% needed treatment, and that, most worryingly, 35% had never before been examined by an ophthalmologist. A recent population-based study in Mexico found that the prevalence of diabetes in people aged 50 or over was 21%. A total of 36% of patients with diabetes had some DR, 5% had proliferative retinopathy, and 8.6% had proliferative DR. Less than half of those known to have diabetes had been advised to have an annual eye examination.

Developing clinical guidelines

It is important to have a simple, easy-to-use grading or classification system to help standardize appropriate management, referral, treatment, and monitoring for patients with diabetes. On page 12 of this issue, we have published one such system, based on the international clinical disease severity system for DR and diabetic macular edema as set out by the International Council of Ophthalmology (see Useful Resources on page 23).

Finding patients with diabetes and DR

Ideally, there should be an effective information system that identifies people with diabetes, calls them for screening, and records the outcomes of eye examinations.
Rapid Assessment of Avoidable Blindness and Diabetic Retinopathy in Chiapas, Mexico

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Objective: To estimate the prevalence and causes of blindness in Chiapas, Mexico, and to assess the feasibility of using the Rapid Assessment of Avoidable Blindness framework to estimate diabetic retinopathy (DR) prevalence.

Participants: Sixty-six clusters of 60 people 50 years of age or older were selected by probability proportional to size sampling. Households within clusters were selected through compact segment sampling.

Methods: Participants underwent visual acuity (VA) screening and diagnosis of cause of visual impairment by an ophthalmologist. Participants were classified as having diabetes if they had a previous diagnosis of diabetes, were receiving treatment for glucose control, or had a random blood glucose level of more than 200 mg/dl. Participants with diabetes were assessed for DR using dilated clinical examination (direct and indirect ophthalmoscope) and 1 dilated digital fundus photograph per eye (graded by an ophthalmologist during the survey and regraded by a retinal specialist—"reference standard") following the Scottish DR grading protocol.

Main Outcome Measures: Prevalence of blindness (VA <20/400 in the best eye with available correction) and DR.

Results: Three thousand three hundred subjects were selected, of whom 2864 (87%) were examined. The estimated prevalence of bilateral blindness was 2.3% (95% confidence interval [CI] 1.7%–2.9%). Cataract was the leading cause of bilateral blindness (63%), followed by posterior segment diseases (24%), which included DR (8% of blindness). The prevalence of diabetes was 21% (95% CI 19.6%–23.1%). Among participants with diabetes, the prevalence of DR (in at least 1 eye) was 38.9% (95% CI 33.7%–44.1%). The prevalence of sight-threatening DR (STDR; defined as proliferative DR, referable maculopathy, or both) was 21.0% (95% CI 16.7%–25.3%). Agreement with the reference standard was good for any retinopathy and STDR for the clinical examination (κ = 0.80 and 0.78, respectively) and the photographs graded during the survey (κ = 0.80 and 0.82, respectively).

Conclusions: The prevalence of diabetes and DR in Chiapas was high. Including the DR component was possible, but added considerably to the cost and complexity of the survey, and so would be warranted only if a high prevalence of diabetes is expected and if resources and time permit.

Financial Disclosure(s): The authors have no proprietary or commercial interest in any materials discussed in this article. Ophthalmology 2012;119:1033–1040 © 2012 by the American Academy of Ophthalmology.

It is estimated that in 2010, there were 285 million people with diabetes, and that by 2030, this will increase to 438 million people.1 Most of this increase will take place in the developing countries of Asia, Latin America, and Africa.2 Diabetic retinopathy (DR) is a serious eye complication of diabetes that can lead to blindness if untreated. Diabetic retinopathy is estimated to be responsible for 4.8% of blindness globally3 and is the dominant cause of blindness in the working-age population in high-income countries.4 Vision loss resulting from DR is also likely to increase in importance in low- and middle-income countries with the continued diabetes epidemic and as other causes of blindness are brought under control through successful implementation of VISION 2020 programs. Population-based DR prevalence data is different settings are scarce, particularly in low- and middle-income countries,5–8 because these data are thought to be expensive and difficult to obtain because they rely on sophisticated diagnostic equipment. Most available data therefore estimate the prevalence of DR among people with diabetes attending a clinic, rather than from a population-based sample, which is likely to overestimate the prevalence. Mexico is believed to have the tenth highest burden of adult diabetes in the world, with an estimated prevalence of 10% among adults 20 to 79 years of age.9 However, recent information on the prevalence of DR in Mexico is lacking.9 These data are needed urgently for appropriate planning of DR services.
Subsidized Cataract Surgery in Latin America

Cataract is the leading cause of blindness in L.A. (60% of people are blind due to cataract followed by retinopathy (15%), diabetic retinopathy (7%), retinal scarring (6%), and vitreous floaters, (6%). Among children, ROP is the leading cause of visual impairment.

Subsidized cataract surgery is available to patients in a number of Latin American countries, but it is not available in all countries. In L.A., cataract surgery is financed through a variety of funding mechanisms, including government programs, private insurance, and philanthropic organizations.

In Brazil, for example, the government provides free cataract surgery to patients who meet certain eligibility criteria. In Mexico, private insurance companies and philanthropic organizations provide subsidized cataract surgery to patients who cannot afford the full cost.

Subsidized cataract surgery is essential for the prevention and treatment of blindness in Latin America. It is estimated that 1.2 million people in the region are blind due to cataract, and another 10 million are at risk of becoming blind if surgery is not available.

The success of subsidized cataract surgery programs in Latin America depends on the availability of resources, the willingness of patients to seek care, and the effectiveness of the surgical procedure. Continued investment in these programs is essential to prevent and treat blindness in Latin America.
Partners supporting Us

- cbm
- IEF International Eye Foundation
- Lions International
- IAPB
- MMI International
- DIF
Wholistic Approach Objectives:

1. Knowledge and Mentoring

2. Create the Environment

3. Importance of Informal Instruction
Basic Needs in Training Program

1. Valid Curriculum (ICO, AAO...)
   3 year program
2. Equipment
3. Qualified Professors
4. Good number Patients
5. Monitoring and Evaluation system
6. Mexican Ministry of Health standards
Knowledge and Mentoring

Jesus Method:

1. Expose relevant and organized knowledge
2. Create a respectful and warm environment.
3. Awake and Maintain the interest of important things and ideas
Knowledge and Mentoring

4. Induce intuitive thinking and a desire for research in Science and Faith

5. Thread and compliments in the correct moment and the correct place
Mentoring

Capabilities of a Mentor:

1. Respectful
2. Inspire Confidence
3. True interest for his student
4. Total transmission of knowledge
5. Motivates the student to growth in knowledge.
Mentoring

- Capabilities of a Christian Mentor:
  - Faithful Follower of Jesus
  - Is not about preaching, your life needs to preach
  - Love the essential ingredient
  - You are training disciples not students
Mentoring
Make your disciples better than you
Avoid Samurai Effect
Creating the Environment

- Daily Devotionals
- Spiritual Retirements
- Two full time Chaplains
- Weeks of Prayer
- Put them in a position to see miracles
Residentes in Prayer
Importance of Informal Instruction

- Know them by name
- Share same experiences
- Know their needs, sorrows and joys
- Become a counselor
Conclusions:

- Human Resources needed with a wider view of Eye Health (Physical, Mental, Spiritual)

- Train Disciples not Students
Conclusions

- Community Leader
- Honorable Friend, Spouse and Parent
- Godly Human Being
- Humble Son of God
- Loving Mentors
The greatest want of the world is the want of men, men who will not be bought or sold, men who in their inmost souls are true and honest, men who do not fear to call sin by its right name, men whose conscience is as true to duty as the needle to the pole, me who will stand for the right though the heavens fall.

Education p.57  Ellen G. White
When he came down from the mountain-side, large crowds follow him. A man with leprosy came and knelt before him and said, "Lord if you are willing, you can make me clean". Jesus reached out his hand and touched the man. I am willing he said Be clean! Immediately he was cured of his leprosy. Matthew 8:1-3
SERVICE IS THE PATHWAY TO PEOPLES HEART TO JESUS
¡Muchas Gracias!

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