



AMERICAN UNIVERSITY OF ARMENIA  
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# Garro Meghriyan Institute for Preventive Ophthalmology

## 2011 Annual Report



## *Prevent Avoidable Blindness in Armenia*

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## Executive Summary

The Garo Meghrigian Institute for preventive Ophthalmology (Meghrigian Institute) is part of the Center for Health Services Research and Development (CHSR) of the College of Health Sciences of the American University of Armenia (AUA). **Meghrigian Institute's mission is to prevent avoidable blindness in Armenia.**

This Annual Report highlights the main activities and accomplishments of the Meghrigian Institute in 2011.

In April 2011, Meghrigian Institute conducted a study of risk factors for refractive errors (RE) development among 6-18 years old schoolchildren in Yerevan and Gegharkunik marz. The study also compared the prevalence of RE among schoolchildren in Yerevan and Gegharkunik.

On September 24-25 and October 15-16, the Meghrigian Institute conducted a 2-day training course on "Prevention, Diagnosis and Treatment of Ophthalmic Diseases at the Primary Health Care Level" in Gegharkunik marz. The training course was designed for primary health care (PHC) nurses and was carried out at the Lions Regional Ophthalmic Unit (ROU) in Sevan. Thirty one participants from five towns (Tchambarak, Vardenis, Martuni, Gavar and Sevan) and six remote villiges (Geghamabak, Shatvan, Sotk, Tsovagyugh, Geghamavan and Gagarinavan) participated in the training.

To celebrate the World Sight Day on October 13, 2011, the staff of the Meghrigian Institute visited "Kharberd" specialized orphanage to conduct annual eye screenings among handicapped and orphaned children, and offer medical assistance. Almost all of the screened children had some type of visual disturbance and/or eye disease. All children with eye problems received appropriate medical assistance and eyeglasses from the Meghrigian Institute.

Meghrigian Institute in collaboration with Sevan ROU carried out outreach visits to the villages of Gegharkunik and Tavush marzes with specific focus on the most remote and poor communities. Outreach visits helped to reach the adult population with low access to ophthalmic services.

Meghrigian Institute conducted eye screenings among schoolchildren in Vardenis, which is one of the remote towns in Gegharkunik marz. All screened children received free ophthalmic consultation. Eye glasses and/or medication were prescribed to those who had vision problems or any type of eye disease.

## **1. Introduction**

The Garo Meghrigian Institute for Preventive Ophthalmology (Meghrigian Institute) is part of the Center for Health Services Research and Development (CHSR) of the College of Health Sciences of the American University of Armenia (AUA). **Meghrigian Institute's mission is to prevent avoidable blindness in Armenia.**

The main objectives of the Meghrigian Institute are:

- Conduct scientific investigations of ophthalmic epidemiology to increase understanding of eye disease in the community;
- Link ophthalmologic services with expertise in organizing, financing and delivery of services to increase the utilization of ophthalmologic care in Armenia;
- Educate eye care providers and the general public on scientific advances in detecting, preventing, and treating eye disease and in translating these advances into nationwide clinical practice;
- Establish an ophthalmic care and prevention network to expand service delivery to underserved populations in need of affordable, accessible, and high quality eye care services for prevention and treatment of blindness at all levels;
- Develop partnerships with organizations that are interested in blindness prevention and are capable of furthering the achievements of Meghrigian Institute's goal;
- Train the future professionals for blindness prevention activities in Armenia.

This Report of Garo Meghrigian Institute for Preventive Ophthalmology highlights the main activities and accomplishments of the Meghrigian Institute in 2011.

## **2. Activities and accomplishments**

### **2.1 Study of risk factors for developing refractive errors among 6-18 years old schoolchildren in Yerevan and Gegharkunik marz**

In April 2011, Meghrigian Institute started a study of risk factors for developing refractive errors among 6-18 years old schoolchildren in Yerevan and Gegharkunik marz. Besides investigating the risk factors associated with refractive errors (RE), the study aimed to compare the prevalence of RE among schoolchildren of Yerevan and Gegharkunik marz.

Childhood blindness is a significant problem worldwide, with an estimated 1.4 million blind children below 15 years old. One of the main causes of childhood blindness is uncorrected refractive errors (myopia, hyperopia and astigmatism). Refractive errors can be easily diagnosed, measured and corrected with refractive corrections to attain normal vision. Visual

impairment from uncorrected refractive errors can have immediate and long term consequences, such as lost educational and employment opportunities, lost economic gain, and impaired quality of life. Most of the children with uncorrected refractive error are asymptomatic and hence screening helps in early detection and timely intervention.

Sydney Myopia Study Student Questionnaire was used to develop a structured questionnaire for the study. The questionnaire contained questions about demographics, near work (reading, writing, drawing, playing computer and cell phone games, doing homework, etc.), school achievement, and outdoor and physical activity. The information about weight and height at birth, gestation age, and heredity was obtained from parents through the self-administered questionnaire.

The study utilized cross sectional study design. Cluster sampling technique was used to generate the study sample, with five clusters assigned to each target area (Yerevan and Gegharkunik). The investigators selected five urban sites (Sevan, Chambarak, Gavar, Martuni and Vardenis) in Gegharkunik marz. In Yerevan, Kentron, Arabkir, Nubarashen, Davitashen and Achapnyak communities were selected from the list of eleven administrative areas. One basic school and one high school were randomly selected from each area. The researchers categorized children into three groups according to their current grade level. The first group contained first to fourth grade children, while the second and the third groups contained children from fifth to eighth grades and ninth to twelfth grades, respectively. Forty-two children from each group were recruited.

Overall, 1,092 schoolchildren participated in the study. The statistical analysis of the data is currently underway.

## **2.2 Ophthalmic Trainings**

As part of its mission to educate health providers and establish ophthalmic care and prevention network for under-served population, Meghrigian Institute of Preventive Ophthalmology continued the series of trainings on “Prevention, Diagnosis and Treatment of Ophthalmic Diseases at the Primary Health Care Level” in 2011. The 2-day training course was carried out on September 24-25 and October 15-16, 2011 at the Lions Regional Ophthalmic Unit (ROU) in Sevan, Gegharkunik marz. Thirty one nurses from five largest towns (Tchambarak, Vardenis, Martuni, Gavar and Sevan) and remote villiges (Geghamarak, Shatvan, Sotk, Tsovaguyugh, Geghamavan and Gagarinavan) of Gegharkunik marz participated in the training.

Dr. Varsik Hakobyan, Ophthalmic Consultant of Meghriqian Institute, covered the following topics during the training: anatomy and physiology of eyes, main eye diseases, eye injuries, diagnostic and treating procedures in ophthalmology, and prevention of eye diseases. The training course had a specific focus on glaucoma and diabetic retinopathy. The course helped primary health care nurses of Gegharkunik marz to expand their theoretical and practical skills in ophthalmology. All participants received a brochure about basics of ophthalmology designed for primary health care nurses. At the end of the training course participants received certificates from the Meghriqian Institute in recognition of successful completion of the course.

The participants were very pleased with the training and expressed their gratitude to the organizers and to the instructor Dr. Varsik Hakobyan for her comprehensive and dedicated teaching.



### 2.3 Observance of World Sight Day, October 13, 2011

World Sight Day (October 13, 2011) is a global event that brings attention to blindness and vision impairment worldwide. This year there was no global theme for World Sight Day, which allowed each organization to highlight its own priorities. The Garo Meghriqian Institute for Preventive Ophthalmology chose to emphasize the importance of providing continuous high quality ophthalmic care to handicapped and orphaned children.



On October 13, 2011, the staff of the Meghrigian Institute returned to “Kharberd” specialized orphanage, where 158 handicapped and orphaned school children live. The ophthalmologists carried out detailed eye screenings of 54 children and 20 staff members. Nearly all of the screened children had different types of visual impairments and eye diseases. Glasses were prescribed and provided to 9 children with RE. Fourteen children received appropriate medication based on prescriptions. In addition, Meghrigian Institute covered one-year medication expenses for two children from Kharberd orphanage who had glaucoma and needed continuous medical assistance.

#### **2.4 Outreach activities in Tavush and Gegharkunik marz**

Every year, Meghrigian Institute of Preventive Ophthalmology in collaboration with the Lions Regional Ophthalmic Unit (ROU) in Sevan organizes outreach visits to the poorest and remotest villages of Gegharkunik and Tavush marzes. Outreach visits help to detect eye pathologies among those who have low access to ophthalmic services.

Meghrigian Institute of Preventive Ophthalmology in collaboration with the Lions Regional Ophthalmic Unit (ROU) in Sevan carried out outreach visits to Gandzaqar, Khachardzan, Aghavnavanq, Shorzha, and Ttujur villages of Gegharkunik and Tavush marzes between April and September of 2011. People in the villages were informed about the upcoming visits and invited for eye screening. In total, 152 patients underwent ophthalmic examinations. Among them, 110 (72.38%) had eye diseases including glaucoma, cataract, conjunctivitis (chronic & allergic), diabetic or hypertonic retinopathy, and eye tumor. Ninety nine patients (65.13%) had refractive errors and/or presbyopia. All patients diagnosed with eye disease received medical consultation and eyeglass frames. In addition, the patients having diseases other than refractive error or presbyopia were referred to the ROU in Sevan for detailed diagnosis and treatment.



### **2.5. Eye screening among schoolchildren in Vardenis, Gegharkunik marz**

On May 26, 2011, Meghriqian Institute conducted eye screenings among schoolchildren in Vardenis, which is one of the remote towns of Gerakunik marz. Overall, 25 schoolchildren



received free ophthalmic consultations. Five of them had RE and 7 had different types of eye diseases such as infection, allergic conjunctivitis, blepharitis, and accommodation spasm. Eye glasses or medication were prescribed to those who had either vision problems or any type of eye diseases.

### **3. Plans for 2012**

Meghrigian Institute will continue working with socially vulnerable children through its early screening and detection programs in 2012.

Since the older population from remote areas of Armenia still has problems with access to ophthalmic services, Meghrigian Institute will continue its outreach visits to poor rural communities in Gegharkunik and Tavush marzes.

In 2012, Meghrigian Institute will implement a program on prevention of visual impairment and blindness among diabetes patients of Gegharkunik marz through early detection of diabetic retinopathy. In the scope of the program, free ophthalmic examination among those who suffer from diabetes mellitus will be carried out. In addition, the program will help to enhance the awareness regarding diabetes and diabetic retinopathy among primary health care specialists through the implementation of ophthalmic trainings. Diabetic patients will be educated about better diabetes management and prevention of diabetes retinopathy through educational brochures on diabetes and diabetic retinopathy developed by the Meghrigian Institute.