



**AUA** American University  
of Armenia

**TURPANJIAN SCHOOL of  
PUBLIC HEALTH**

2019 Annual Report

**Garo Meghriyan Institute for  
Preventive Ophthalmology**

**Mission: Prevent Avoidable  
Blindness**

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## **Executive Summary**

In 1999, Mr. Garo Meghriqian of Los Angeles funded a Blindness Prevention Program in Armenia in memory of his daughter, Christine Hripsime. With a generous gift from the Meghriqian family, the Garo Meghriqian Institute for Preventive Ophthalmology (Meghriqian Institute) was established within the Avedisian Onanian Center for Health Services Research and Development at AUA's Turpanjian School of Public Health. Meghriqian Institute's mission is to prevent avoidable blindness in Armenia.

This Annual Report highlights the main activities and accomplishments of the Meghriqian Institute in 2019.

On September 2, 2018, the Garo Meghriqian Institute for Preventive Ophthalmology with the financial support from the Lions Club International foundation (LCIF) launched a nationwide epidemiological survey in Armenia using Rapid Assessment of Avoidable Blindness (RAAB) methodology. The 2-year nationwide epidemiological survey covered all provinces of Armenia, including Yerevan through conducting eye screenings among around 3,500 people aged 50 and over. In 2019, Meghriqian Institute completed the sampling, trainings of RAAB research teams, data collection and data entry of the project.

In April 2019, Meghriqian Institute of Avedisian Onanian Center for Health Survecies Research and Development (CHSR), Turpanjian School of Public Health (SPH) conducted a 3-day training on "Rapid Assessment of Avoidable Blindness (RAAB)" and a 2-day training on "Improvement of Ophthalmology Qualifications". Both courses were granted Continuous Professional Development (CPD) credits by the Ministry of Health of the Republic of Armenia.

Garo Meghriqian Institute for Preventive Ophthalmology of the AUA Turpanjian School of Public Health launched an eye screening program among socially disadvantaged children and children with motor or mental disorders to celebrate World Sight Day 2019. The program aimed to decrease visual impairment among the target population through provision of comprehensive ophthalmic examination and distribution of spectacles and medication to those in need. Overall, 154 children from the target population and 26 family members of those children participated in the project.

From October 17 to 19, Senior Researcher Aida Giloyan (MPH '07) from the Garo Meghriagian Institute for Preventive Ophthalmology at the AUA was selected to participate and present at the European Association for Vision and Eye Research (EVER) Congress 2019. Aida Giloyan made a poster presentation on “Migraine headache and high tension glaucoma among adult population living in Armenia: a case-control study”. The abstract was published in the fall issue of *Acta Ophthalmologica*.

Meghriagian Institute continued an eye screening project among family members of deceased freedom fighters and fallen soldiers, as well as disabled freedom fighters and disabled soldiers and their family members in Armenia with assistance from “Goyamart” National Charitable Union and the Ministry of Defense of the Republic of Armenia. The aim of this project was to provide comprehensive ophthalmic examination to the target population and provide spectacles and medication to those in need. In December 2019, the staff of the Meghriagian Institute carried out eye screenings in Hrazdan, Kotayk province of Armenia. Overall, 116 people participated in the project.

In December 2019, Meghriagian Institute applied to the USAID’s Child Blindness Prevention (CBP) Grant. USAID’s CBP supports to expand the availability, accessibility, and quality of eye health services to vulnerable children and other populations with limited access to sight- saving services. Meghriagian Institute proposed the “Improving Child Vision in Armenia” program aimed to improve access and quality of pediatric ophthalmic care services resulting in reduction of preventable blindness and visual impairment prevalence among school-age children in Armenia.

The Meghriagian Institute continued its partnership with the Lions Regional Ophthalmic Unit in Sevan, established earlier through the joint efforts of the Meghriagian Institute and the Ararat Lions Club (ALC), and funded by the Lions Club International Foundation-LCIF. Lions Regional Ophthalmic Unit in Sevan, Gegharkunik province served around 3,595 visits, 1,287 people and performed 521 surgeries in 2019. Meghriagian Institute conducted eye screenings among 168 children and 3,628 adult patients in Armenia in 2019. Overall, Meghriagian Institute distributed 153 free eye glasses and provided medication to 29 people in 2019.

## **Introduction**

In 1999, Mr. Garo Meghriqian of Los Angeles funded a Blindness Prevention Program in Armenia in memory of his daughter, Christine Hripsime. With a generous gift from the Meghriqian family, the Garo Meghriqian Institute for Preventive Ophthalmology (Meghriqian Institute) was established within the Avedisian Onanian Center for Health Services Research and Development at Turpanjian School of Public Health, American University of Armenia. In partnership with local experts, the Meghriqian Institute seeks to assess and characterize the burden of eye diseases in Armenia, to promote preventive measures such as screenings, to develop professional and public awareness through educational programs, and to help increase the local health system's capacity to effectively identify and prevent vision disorders before they lead to blindness.

The main objectives of the Meghriqian Institute are to:

- Conduct scientific investigations of ophthalmic epidemiology to increase understanding of eye diseases 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 Meghriqian Institute's goal;
- Train the future professionals for blindness prevention activities in Armenia;
- Establish a regional blindness prevention network for the Caucasus, emphasizing underserved areas and minority populations.

Since 2004, the Meghriyan Institute has also been sponsoring a fellowship program to encourage Armenian ophthalmologists to combine population-based prevention activities with clinical ophthalmology, as part of the Master of Public Health program at AUA.

Vision loss, or blindness, is a major public health problem. The leading causes of chronic blindness include cataract, glaucoma, age-related macular degeneration and diabetic retinopathy. Blindness decreases quality of life and has a great impact on the socio-economic development of individuals and society. The Meghriyan Institute's activities include eye screenings and treatment for socially vulnerable children and older adults, for patients with diabetes living in provinces of Armenia and for family members of fallen soldiers living in Artsakh and Armenia; delivering educational programs to ophthalmologists, ophthalmic nurses, endocrinologists, primary health care providers, and school nurses working in rural areas of Armenia; donating ophthalmic equipment to ophthalmic offices of primary care facilities; and establishing a high quality ophthalmic services, such as the Lions Regional Ophthalmic Unit, established in Sevan, Gegharkunik province. The Meghriyan Institute founded this unit in partnership with the Ararat-1 Lions Club and with funding from the Lions Club International Foundation. The establishment of this center was the first step in expanding affordable, accessible, and high quality ophthalmic service delivery to underserved populations, and serves as a model regional ophthalmic system in Gegharkunik province. The Unit has served around 42,447 visits, 19,128 people and performed 5,199 surgeries for free or at a cost much lower than in Yerevan. In addition, the Meghriyan Institute has conducted eye screenings among socially disadvantaged children and adults in Armenia and Artsakh, and ophthalmic research among different population groups, including people with glaucoma, cataract surgery and diabetes.

This report highlights the main activities and accomplishments of the Meghriyan Institute in 2019.

## **Activities and accomplishments**

### **1. Nationwide epidemiological survey among people aged over 50 using Rapid Assessment of Avoidable Blindness (RAAB) methodology**

Funding: Lions Club International Foundation (LCIF)

The Garo Meghriyan Institute for Preventive Ophthalmology (Meghriyan Institute) of Avedisian Onanian Center for Health Services Research and Development (CHSR), Turpanjian School of Public Health (SPH), American University of Armenia with the financial support from the Lions Club International foundation (LCIF) conducted a 2-year nationwide epidemiological survey in Armenia using Rapid Assessment of Avoidable Blindness (RAAB) methodology from September 2018 to September 2020. The aims of the project were 1) to estimate the prevalence of ocular morbidity and its potential causes, and vision loss due to cataract and other major causes among population aged 50 and over in Armenia; 2) to evaluate the effectiveness of the innovative public health approach implemented in Gegharkunik province of Armenia between 2003/4 and 2019 (an intervention supported by the LCIF SightFirst grant in 2003-2008 that has provided high quality cataract surgery to underserved populations) in reducing cataract related ocular morbidity and vision loss.

Stratified proportionate to size cluster sampling technique was used to conduct the RAAB survey. First, we stratified the entire population 50 years old and over based on provinces. Then, we performed proportionate to size clustering within each stratum with a cluster size of 50. Overall, we have selected 50 clusters from all 11 provinces, including Yerevan. To evaluate the effectiveness of the innovative public health approach to eye care delivery implemented in Gegharkunik province of Armenia in 2003/4-2019, we oversampled in Gegharkunik province and selected 20 additional clusters. The study selected the starting points of each cluster from the 2018 RA Parliamentary Election lists (which contains names and addresses of citizens eligible to vote) using the simple random sampling technique.

The Meghriyan Institute selected four survey teams of experienced professionals for the RAAB survey. Each team consisted of an ophthalmologist, an ophthalmic nurse and an interviewer. Before conducting the survey, all teams participated in comprehensive trainings aimed to prepare them for the RAAB survey.

Data collection phase of the RAAB survey took place during spring and summer 2019. The RAAB survey collected information on participants' demographics, presenting visual acuity, visual acuity with pinhole, lens examination, main cause of presenting visual acuity < 0.5 (6/12), principle cause of presenting visual acuity < 0.5 (6/12), as well as information on cataract surgery and barriers to cataract surgery.

The Meghriqian Institute plans to complete data analysis, report writing, dissemination of findings and publications within the second half of the project from September 2019 to August 2020.



**Lions Clubs International**  
**FOUNDATION**





## **2. Ophthalmic Trainings on Rapid Assessment of Avoidable Blindness (RAAB)**

In April 2019, Garo Meghriyan Institute for Preventive Ophthalmology (Meghriyan Institute) of Avedisian Onanian Center for Health Survecies Research and Development (CHSR), Turpanjian School of Public Health (SPH) conducted a 3-day training on “Rapid Assessment of Avoidable Blindness (RAAB)” and a 2-day training on “Improvement of Ophthalmology Qualifications”. Both courses were granted Continuous Professional Development (CPD) credits by the Ministry of Health of the Republic of Armenia. These trainings were developed and organized in the scope of the project “Nationwide Epidemiological Survey using Rapid Assessment of Avoidable Blindness (RAAB) Methodology”; this project is made possible by the financial support from the Lions Club International Foundation (LCIF). The main goals of the project are to estimate the prevalence of ocular morbidity and its potential causes, and vision loss due to cataract and other major causes among population aged 50 and over in the Republic of Armenia; and to evaluate the effectiveness of the innovative public health approach implemented in Gegharkunik province of Armenia between 2003 and 2018 (an intervention supported by a LCIF/SightFirst grant in 2003-2008 that has provided high quality cataract surgery to underserved populations) in reducing cataract related ocular morbidity and vision loss.

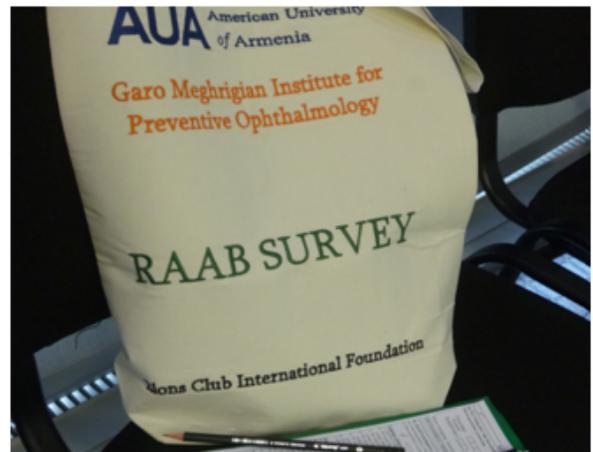
The RAAB training has been implemented to thoroughly train RAAB survey team members so that they uniformly follow the same procedure to identify eligible subjects, to assess visual acuity through E charts, to assess visual acuity with pinhole and examine the lens, and to record data. Each team received standardized instructions on definitions of eye disease, methods of selection of the subjects, examination protocol, and method to obtain and record data. Dr. Ala Paduka, a certified RAAB trainer conducted the training, in collaboration with Dr. Naira Khachatryan, the principal investigator of the project. Five ophthalmologists, three nurses and four interviewers participated in the training.

After successfully completing the theoretical part of the RAAB training, the teams practiced what they have learned. Each team practiced visual acuity testing through the E chart and with a pinhole on each other. Then, the teams traveled to Lions Regional Ophthalmic Unit (LROU) in Sevan to conduct eye examinations among 40 patients to assess inter-observer variation. The findings of each examiner were compared with the findings of the most experienced examiner. The most complicated cases (fourteen patients) were invited to the LROU for a follow-up. Each

team discussed the eye examination results of those cases with Dr. Gevorg Baraghamyan, the Head physician and ophthalmic surgeon of LROU in Sevan. The teams pre-tested door to door eye examinations among people living in Sevan, Gegharkunik province. The pretesting was conducted under the supervision of Drs. Paduka and Khachatryan, and the senior researcher and operations manager of the Meghri Institute Aida Giloyan.

The Ministry of Health accredited the curricula of both trainings and designated 14 theoretical and 7 practical CPD credits for the ophthalmologists and 13 theoretical and 5 practical CPD credits for the nurses participating in the RAAB training and 6 theoretical and 3 practical CPD credits for the ophthalmologists participating in the second training. All the participants received certificates in recognition of successful completion of the training courses and credits signed by the Minister of Health.





### **3. Garo Meghrigian Institute for Preventive Ophthalmology celebrates World Sight Day 2019**

Celebrating World Sight Day (WSD) 2019, the Garo Meghrigian Institute for Preventive Ophthalmology (Meghrigian Institute) of the American University of Armenia (AUA) Turpanjian School of Public Health (SPH) launched an eye screening program for socially disadvantaged children and children with motor or mental disorders. The program aimed to decrease visual impairment among the target population through provision of comprehensive ophthalmic examination and distribution of spectacles and medication to those in need.

WSD is an annual day of awareness held on the second Thursday of October to focus global attention on blindness and vision impairment. This year, WSD was celebrated on October 10, 2019 and the call to action was “Vision First.” More than a billion people worldwide have visual problems because of having limited access to ophthalmic glasses.

In September, the staff of the Meghrigian Institute visited the Gavar Children’s Home in Gegharkunik province of Armenia, Special School N17 for children with motor disorders and Special School N11 for children with mental health issues in Yerevan. Fifty-four out of 55 children in the Gavar Children’s Home, 39 out of 60 children in N17 special school and 61 out of 80 children in N 11 special school were able to participate in detailed eye screenings. Overall, 154 children from the target population and 26 family members of those children were screened. Twenty-five children diagnosed with refractive errors such as nearsightedness, farsightedness, and astigmatism will receive spectacles from the Meghrigian Institute in November. Children who had eye conditions that needed hospital care were referred to specialized centers for more advanced care.



#### **4. Garo Meghriyan Institute for Preventive Ophthalmology at the European Association for Vision and Eye Research (EVER) Congress 2019**

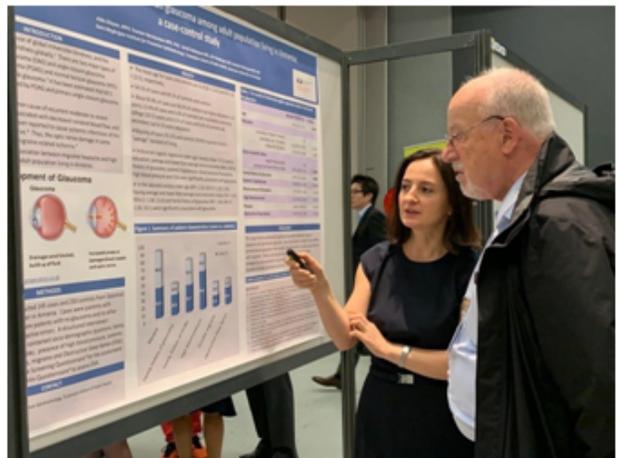
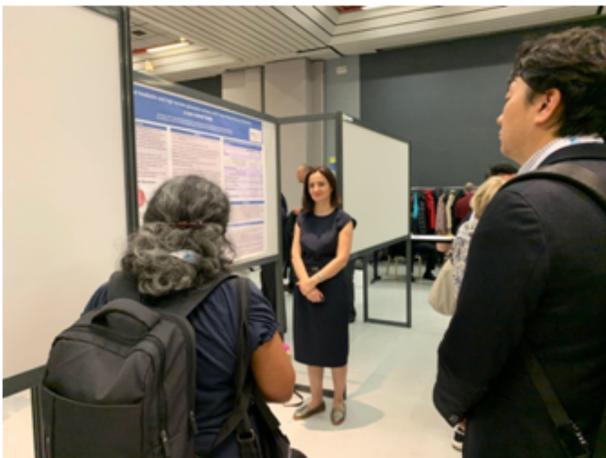
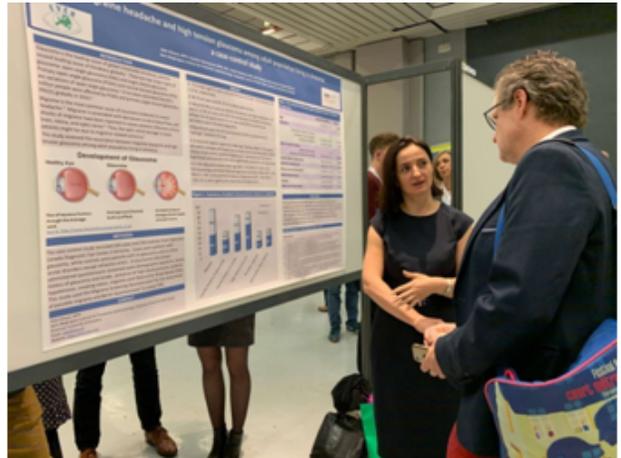
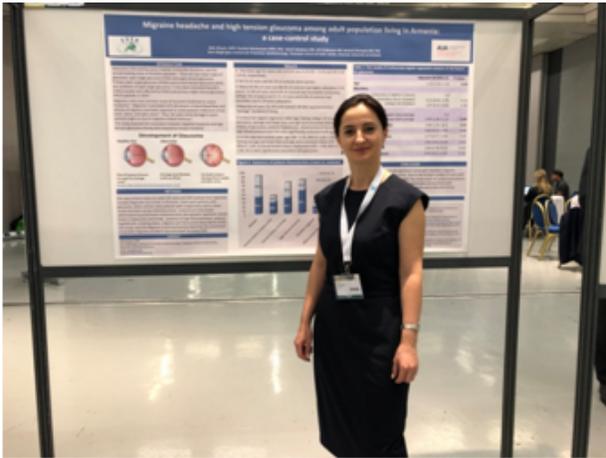
From October 17 to 19, Senior Researcher Aida Giloyan (MPH '07) from the Garo Meghriyan Institute for Preventive Ophthalmology (GMIPO), Zvart Avedisian Onanian Center for Health Services Research and Development (CHSR) at the American University of Armenia (AUA) was selected to participate and present at the European Association for Vision and Eye Research (EVER) Congress 2019. The EVER aims to encourage the different aspects of research –basic, clinical and translational- concerning the eye and vision, and to promote mutual collaboration between different specialists and institutes involved in this field by means of publications, exchange of information and meetings. EVER is the leading ophthalmological research association in Europe which covers all areas of ophthalmology and the visual sciences ranging from epidemiology to optics, the cornea to the retina, and immunology to genetics. One of the main activities of EVER is the organizing of a high quality research meeting annually.

Aida Giloyan made a poster presentation on “Migraine headache and high tension glaucoma among adult population living in Armenia: a case-control study”. The study found that older age, having average and lower than average socio-economic status and family history of glaucoma were significantly associated with high tension glaucoma. No significant association was found between migraine headache and high tension glaucoma. The study concluded that timely screening for eye pathologies among those with average/low socio-economic status could facilitate early detection of eye diseases and help to prevent visual loss.

The abstract was published in the fall issue of *Acta Ophthalmologica*. The reference to the abstract is provided below.

*Giloyan A, Harutyunyan T, Hakobyan V, Kirakosyan L, Petrosyan V. Migraine headache and high tension glaucoma among adult population living in Armenia: a case-control study. Acta Ophthalmologica. 2019; 97: S263.*

<https://doi.org/10.1111/j.1755-3768.2019.5131>



**5. Meghriyan Institute continued an eye screening project among family members of deceased freedom fighters and fallen soldiers in Armenia**

Meghrigian Institute continued an eye screening project among family members of deceased freedom fighters and fallen soldiers, as well as disabled freedom fighters and disabled soldiers and their family members in Armenia with assistance from “Goyamart” National Charitable Union and the Ministry of Defense of the Republic of Armenia. The aim of this project was to provide comprehensive ophthalmic examination to the target population and provide spectacles and medication to those in need. This project has aimed to cover all provinces of Armenia including capital city (Yerevan).

In December 2019, the staff of the Meghrigian Institute carried out eye screenings in Hrazdan, Kotayk province of Armenia. Overall, 116 people were participated in the project. Meghrigian Institute distributed 130 spectacles to those who were diagnosed with any type of refractive errors. A total of 29 people diagnosed with eye diseases received medication for treatment by Meghrigian Institute. The severe cases were referred to the nearest hospital for advanced care. Meghrigian Institute completed the activities of this project in Yerevan, Shirak, Lori, Tavush, Armavir, Kotayk provinces and plans to continue the project covering all other remaining provinces of Armenia in the coming years.

In December 7, 2019 Meghrigian Institute’s program on family members of deceased freedom fighters and fallen soldiers was covered by Zinuj program of Public Television of Armenia. Here is the web address of the program. The coverage of our program starts from 18:55 minutes.

<https://www.1tv.am/hy/video/%D4%B6%D5%AB%D5%B6%D5%B8%D6%82%D5%AA/1417>

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## **6. Meghriagian Institute applied to the USAID’s Child Blindness Prevention Grant**

In December 2019, Meghriagian Institute applied to the USAID’s Child Blindness Prevention (CBP) Grant. USAID’s CBP supports to expand the availability, accessibility, and quality of eye health services to vulnerable children and other populations with limited access to sight- saving services. Meghriagian Institute proposed the “Improving Child Vision in Armenia” program aimed to improve access and quality of pediatric ophthalmic care services resulting in reduction of preventable blindness and visual impairment prevalence among school-age children in Armenia.

## **7. Meghriagian Institute: 2019 in numbers**

Lions Regional Ophthalmic Unit in Sevan, Gegharkunik province served around 3,595 visits, 1,287 people and performed 521 surgeries in 2019. Meghriagian Institute conducted eye screenings among 168 children and 3,628 adult patients in Armenia in 2019. Overall, Meghriagian Institute distributed 153 free eye glasses and provided medication to 29 people in 2019.