

Eye Health Care in Central and South- Eastern Europe in 2009

**Report of the International Study Group
June 2011**

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1. Executive Summary

Over the last two decades health care in Central and South-eastern Europe has undergone a comprehensive process of transformation. Leading eye care professionals in these parts of Europe were invited to participate in a research study to describe the conditions of eye care in the region as found in 2009. An International Study Group was created, consisting of representatives of the National Societies of Ophthalmology in the countries which have joined the study. Their offices served as the National Study Co-coordinating Centre.

The countries which were represented by principle investigators were: Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Romania and Serbia. Additional information was obtained from ophthalmologists coming from the following countries: Albania, Bosnia and Herzegovina, Croatia, Georgia, the Republic of Moldova and the Russian Federation.

Members of the International Study Group obtained a study methodology manual which included a standardised questionnaire and guidelines on how to summarize the data collected. Using the same methodology, this effort follows the two previous data collection initiatives conducted in 1998 and 2003.

Data collection efforts have been hampered by a growing private sector and decentralisation of eye care service management. While the private eye care establishments may not necessarily disclose statistical information on eye care they provide, in some countries the decentralization of state-operated health care resulted in the lack of eye health information in various national registers and/or health information system structures.

The key findings as of 2009 are shown in Table 1.

Cataract

Most participants reported that the number of available cataract surgeons was sufficient. In some countries, more opportunities for hands-on skill transfer tutorials and wet-labs should be created.

Based on the reported data, it appears that over the recent decade, cataract surgical services have improved significantly (Tab 2, Fig 1). In most countries, the cataract surgical rate (CSR) exceeds 3,000 cataract operations performed annually per one million inhabitants. In some countries, CSR exceeds 5,000 (for instance the Czech Republic, Estonia, Hungary and Latvia). Most of the participants reported that patients do not have to pay for cataract surgery (for instance in Bosnia and Herzegovina, Bulgaria, the Czech Republic, Estonia, Hungary, the Republic of Moldova, Romania, the Russian Federation and Serbia).

There has been a growing presence of health insurance companies with or without governmental participation which fully or partly cover cataract

surgeries for the insured patients. As reported, in some countries the patients need to fully or partly cover the intraocular lenses cost (for instance Bulgaria, Bosnia and Herzegovina, Croatia, Georgia, Hungary, Lithuania, Romania and Serbia). The price for intraocular lenses is often very steep for patients and may result in using less technologically advanced intraocular lenses. It was felt by the participants that more favourable conditions need to be negotiated with the respective health insurance companies to follow up on technological developments in the area of cataract surgery (for instance in Croatia and Romania).

Some participants reported a need to further improve cataract surgical facilities and the availability of consumables (for instance in Albania, Bosnia and Herzegovina, Bulgaria, Hungary, Lithuania, the Republic of Moldova and Serbia).

Table 1: 2009 Summary

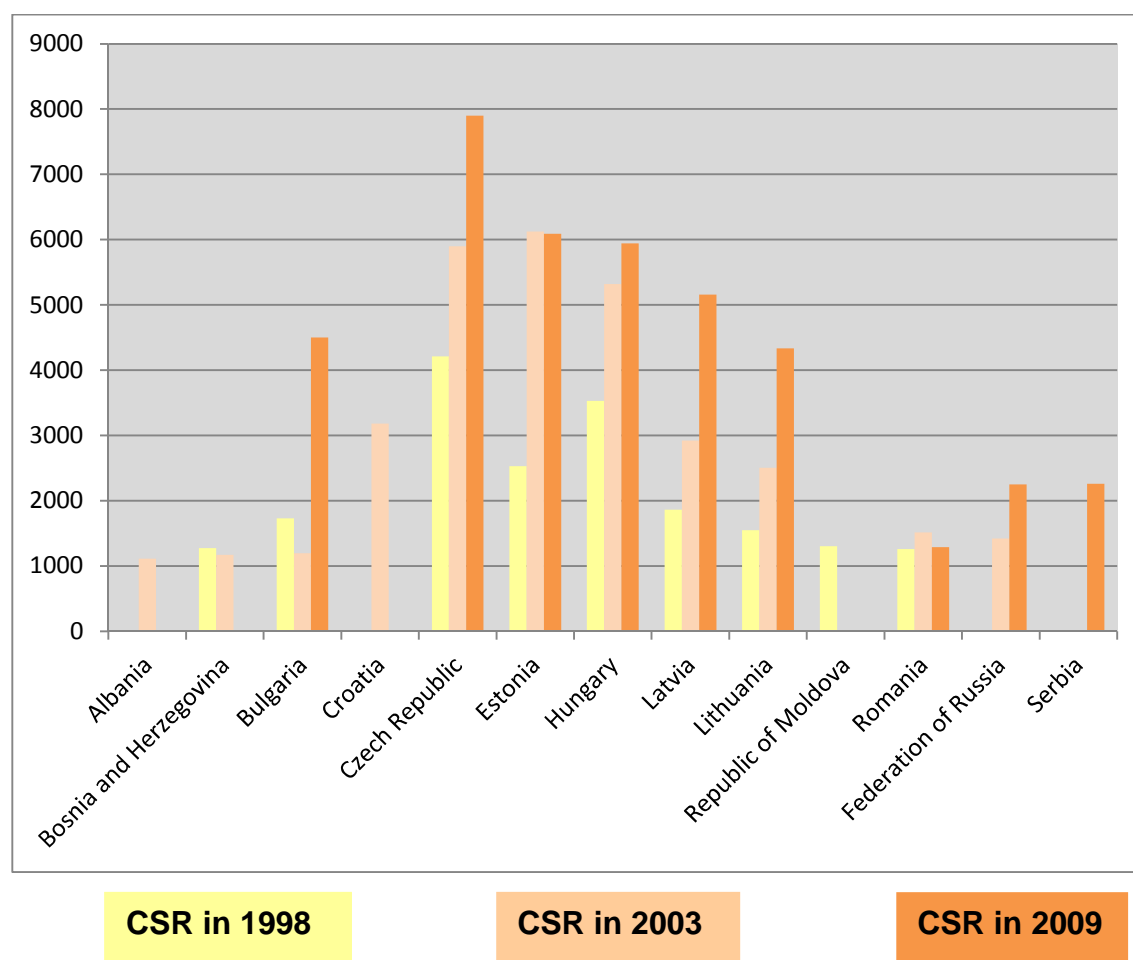
Country	Population in millions¹	Total number of cataract surgeries	CSR	Total number of ophthalmologists	Ophthalmologists per 1 mil inhabitants
Bulgaria	7.5	33,717	4,495	862	115
Czech Republic	10.4	82,253	7,910	1,099	106
Estonia	1.3	8,098	6,229	131	101
Hungary	10.0	59,408	5,941	850	85
Latvia	2.3	11,556	5,257	251	114
Lithuania	3.3	14,086	4,268	400	121
Romania	21.3	27,145	1,274	982	46
Serbia	9.9	22,260	2,248	700	71

¹ Reference: www.who.int

Table 2: Cataract Surgical Rate in 1998, 2003 and 2009

Cataract Surgical Rate (in thousands)	1998	2003	2009
Albania	N/A	1,111	N/A
Bosnia and Herzegovina	1,275	1,168	N/A
Bulgaria	1,730	1,195	4,501
Croatia	N/A	3,180	N/A
Czech Republic	4,210	5,899	7,901
Estonia	2,530	6,123	6,088
Hungary	3,530	5,321	5,941
Latvia	1,860	2,921	5,159
Lithuania	1,550	2,502	4,334
Republic of Moldova	1,300	N/A	N/A
Romania	1,260	1,511	1,286
Federation of Russia	N/A	1,419	2,248
Serbia	N/A	N/A	2,258

Figure 1: Cataract Surgical Rate in 1998, 2003 and 2009



Diabetic Retinopathy (DR)

It was recognized that further training of junior eye doctors in diagnostics and retinal laser therapy is needed (for instance reported by the participants of Albania, Bulgaria, Lithuania, the Republic of Moldova, Romania and Serbia).

The participants reported on the need to strengthen collaboration and referral systems between diabetologists/endocrinologists and ophthalmologists. Further development of national guidelines, policies, and plans was recognized as a prerequisite for the provision of standardized, comprehensive and integrated eye care.

The diabetology and eye care services should be more patient-centered and if possible, provided jointly in selected health centres reducing possible barriers for the patients caused by travel to various health establishments (suggested for instance by the participants of Bosnia and Herzegovina, Bulgaria, Estonia, the Czech Republic, Hungary, Latvia, Lithuania, Romania, the Republic of Moldova and Serbia).

Some participants reported insufficient availability of retinal lasers, fluoresceine angiography and retinal cameras. In some areas, retinal laser treatment is provided by privately operated eye care establishments and patients need to pay for their treatment.

Glaucoma

Most participants reported that they felt there were enough glaucoma specialists in their countries. The group further debated how to best control the proper performance of comprehensive eye examinations. Some participants reported on the lack of motivation of eye care professionals, and the need for more postgraduate training in the area of glaucoma management.

It was felt by the group that laser treatment and essential topical medications were available in their countries. However, some participants suggested that more resources were needed, for instance in Bosnia and Herzegovina, Bulgaria, the Republic of Moldova and Romania.

Most representatives reported that their glaucoma services follow the best practice guidelines developed by recognized international professional associations in eye care (e.g. International Council of Ophthalmology).

Age Related Macular Degeneration (ARMD)

All participants recognized further need for postgraduate training of junior retinal specialists to follow up on the latest developments in the area of ARM diagnostics and treatment. The group recognized that treatment options remain unsatisfactory and their cost very high for patients. It was felt that further improvements in availability and affordability of ARD services very much depends on future technological development.

For most countries, the participants reported that tertiary eye care centres provided services for patients with AMD, however, only in some countries the services were partly or fully covered by the health insurance systems. It was recognized that this was a fast developing segment of eye care, however, the overall success rate of the treatment options remained rather low.

Retinopathy of Prematurity (ROP)

It was recognized by the participants that ROP remained a major cause of avoidable blindness and visual impairment in the sub-region. While many participants reported on significant improvements in early ROP diagnostics and treatment, urgent need for further ROP training for junior paediatric ophthalmologists was recognized (for instance in Bosnia, Bulgaria, the Czech Republic, Hungary, the Republic of Moldova, Romania, and Serbia). Some participants felt that further progress was hampered by the lack of essential

equipment for improved management of ROP, such as indirect ophthalmoscopes and retinal lasers.

Participants reported on using international best practice guidelines in their countries, however, the indicated that more should be done at the policy and national ROP control programme levels.

Low Vision

Most participants felt this area needed more resources and more training for those eye care providers who would be interested in setting up of expanding existing low vision services.

Most low vision devices were not covered by health insurance systems. It was noted that some eye care providers have already explored and utilized the opportunity to order low-cost good-quality low vision aids from international low vision resource centres. However, it was noted that specialization in low vision is rarely sought by junior ophthalmologists. More sensitization needs to be done so that this service segment is adequately addressed.

Education in ophthalmology

Most participants confirmed that their educational systems, including the certification requirements for ophthalmologists in training, are undergoing some restructuring. Most countries are now looking into the suggested educational requirements by the International Council of Ophthalmology, including the European Board of Ophthalmology examination curricula.

Participants reported on various improvements in national curricula and on the log-book like systems for those in training to record and demonstrate their engagement in performing surgical and other clinical procedures to gain more practical skills. Continued education in ophthalmology has been recognized as the most critical component for further improvements in eye care services in the sub-region.

In conclusion, the participants recognized that in some countries and/or districts (e.g. rural areas) there was a need to standardise the available equipment and consumables so that comprehensive integrated eye care services could be provided.

Further negotiations were needed to improve the coverage of eye care services by the old and newly introduced health insurance systems. While it was felt that in most countries there were enough ophthalmologists, their continued postgraduate education and opportunities for hands-on skill transfer training were the most critical prerequisite for further improvements in the provision of eye care services in the sub-region.

2. Study description

2.1. Study Aim

To describe the current levels of eye health care in Eastern European countries in 2009 and to evaluate their needs in order to help promote activities across the region in the fight against blindness.

2.2. Study Objectives

- To collect information about the number of eye care personnel, postgraduate training of ophthalmologists and the available eye care facilities.
- To describe the level of standardized eye care for the main eye conditions leading to blindness in the sub-region.
- To evaluate the present system of delivering and financing of eye care and its availability to inhabitants of the sub- region
- To summarize suggestions regarding the possible ways to improve of eye care

2.3. Study Content

Over the last two decade, health care in Central and South-eastern Europe has undergone a comprehensive process of transformation. Remarkable achievements in ophthalmic care have been obtained. However, both eye care affordability and availability have remained affected by various changes in the economic infrastructure in the sub-region.

Leading eye care professionals in Central and South-eastern Europe were invited to participate in a survey, which gave eye health practitioners an opportunity to describe and summarize the conditions of eye care in the region as found in 2009.

2.4. Methodology

- The study was prepared and co-coordinated by the Loins Educational Centre of Ophthalmology in Prague, the Czech Republic.
- An International study group was created, consisting of representatives of the National Societies of Ophthalmology in the countries which have joined the study. Their offices served as the National Study Co-coordinating Centre.

- Members of the International Study Group obtained a study methodology manual which included a questionnaire and guidelines on how to summarize the data collected.
- Questionnaire one was used to obtain information from surgically active eye departments in the participating countries. Questionnaire two was used to complete national eye care reports.

3. International Study Co-coordinating Centre

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6. Results - Country Reports

6.1. Reports of Principal Investigators

6.1.1. Eye Care Services in Bulgaria in 2009

Total number of ophthalmic beds: 682

Total number of ophthalmologists in the country: 862

Performing cataract surgeries	209
Performing vitreo-retinal surgeries	32
Performing retinal laser photocoagulation	108
Specialized in diagnostics and treatment of retinopathy of prematurity	30
Specialized in pediatric ophthalmology	40

Cataract Surgery

Extra capsular extraction with intraocular lens	3,683
Extra capsular extraction without intraocular lens	212
Phacoemulsification with intraocular lens	26,617
Phacoemulsification without intraocular lens	1,587
Other with intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	1,260
Other without intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	358
Keratoplasty	160

Vitreoretinal Surgery

Extraocular surgery for retinal detachment	501
Pars plana vitrectomy for retinal detachment	607
Pars plana vitrectomy for complications of diabetes mellitus	423
Surgery for intraocular trauma	110
Vitrectomy for endophthalmitis	35
Others	80

Ophthalmic Equipment

Indirect ophthalmoscope	48
Phacoemulsification equipment	67
Pars plana vitrectomy equipment	31
Laser for retinal phacoemulsification	41
YAG laser	33
Funduscamera	32

Cataract

The cataract surgery rate (CSR) was 4.50 in 2009 in Bulgaria.

The number of phacoemulsification operations with intraocular lens is larger, but it is not possible to give a precise number because there are doctors working in the private sector (their own clinics or hospitals) who do not provide information concerning the sort and amount of procedures they conduct. The number which is given (26,617) is only for those operations that are officially recorded.

Cataract patients do not pay for the surgery and the National Health Insurance Fund (NHIF) covers the expenses of the surgery. The average cost paid by the National Health Insurance Fund is € 220.

Patients pay for the IOL and it varies between €450 and €1300.

Negotiations between the Ministry of Health and the NHIF are required regarding the financing of IOLs. Many of the patients cannot bear the cost of IOLs by themselves and refuse surgery. Besides, around 90% of the district eye departments need modern equipment. As most is either missing or is old and in bad condition. There are enough cataract surgeons in Bulgaria, so the average wait for a cataract operation is about a month.

Areas for improvement

Bulgarian eye doctors require MoH to help finance IOLs and they also need modern equipment for the eye departments.

Diabetic Retinopathy (DR)

Bulgarian ophthalmologists need a comprehensive national plan for the screening and treatment with patients of diabetes, supported by the MoH or NHIF.

The Ministry of Health in Bulgaria has experienced a period of personnel turnover and financial difficulties.

Bulgaria only has a plan only at the National committee level for the prevention of blindness.

There are enough retinal lasers, but the main need is train and educate ophthalmologists to diagnose and refer patients with DR for treatment (part of this problem are the existing financial constraints and referral limits).

Laser treatment is affordable for patients, however they have to pay for consumables in vitreo-retinal surgery (silicon, extendable gas, etc.). There are no strict regulations for those payments.

Areas for improvement

Ophthalmologists in Bulgaria need a comprehensive national plan for the screening and treatment of patients with diabetes.

The major need is to educate and train eye doctors to care for patients with DR.

Glaucoma

There is no policy on glaucoma at the MoH. The guidelines encourage performing a comprehensive eye exam, but there is no system for control. Eye doctors need additional training for diagnosing and following up glaucoma patients. Doctors' lack of motivation is also a problem, as there is no system for re-certification and continuous professional development.

Laser treatment for glaucoma is available, as well as medications, but unfortunately the co-payment is not affordable, which puts patients in a very difficult financial situation.

Areas for improvement

Bulgaria lacks a system for the control of glaucoma. Ophthalmologists need additional training and much more motivation for their work. Financial support for patients is also necessary.

Age Related Macular Degeneration (ARMD)

Services for ARMD diagnosis and treatment, there are available both at public and private eye units with FA and OCT facilities. The main CNV treatment practiced is intravitreal application of Avastin. The procedure is financed by the NHIF, but patients have to pay for the medication, the average amount is € 150.

Many of the doctors around the country do not follow new developments in ophthalmology, or visit and participate at congresses and conferences, do not read ophthalmologic journals.

The NHIF should pay for medication (anti-VEGF drugs).

Areas for improvement

Doctors should visit congresses, conferences, and meetings focused on ARMD and also study available materials dealing with this eye problem.

Retinopathy of Prematurity (ROP)

The situation with ROP is the same as with the previous eye conditions the various meetings of eye care professionals. The guideline for screening is included in the national standard for ophthalmology, but screening is performed only in main university hospitals - there are six in the country: in Sofia, Varna, Plovdiv, Stara Zagora and at the private Japanese hospital, "Tokuda" Sofia. The number of trained ophthalmologists remains low and some of them lack motivation.

The national standard for ophthalmology is a document created by ophthalmology experts, containing the rules of organization and requirements in the country for eye care services (premises, facilities, equipment, staff, medical and surgical activities).

Screening of ROP is critical for the prevention of childhood blindness. Most of the affected children are referred too late, when no treatment is possible. Indirect ophthalmoscopes are still not adequately available. Ophthalmologists need additional training in pediatric ophthalmology to be able to screen premature babies and detect early stages of ROP.

There are only two RetCams in the whole country, in Sofia and Varna. Premature babies should be referred to eye care centres with ophthalmologists trained in ROP screening. At present, there are about 30 departments with facilities for premature babies. Local eye doctors have not been trained to screen and refer ROP patients. Screening is a problem, even at the university hospitals because it is difficult, time-consuming, risky. In addition, screening is not financed by the NHIF.

In summary, the main needs are as follows: better training of ophthalmologists and increase their motivation, supply at least two more RetCams, and better coordination between ophthalmologists and neonatologists.

Areas for improvement

More hospitals are needed where eye doctors screen ROP patients as there only six university hospitals now do this. ROP eye doctors need training and motivation to take care of the ROP patients. It is necessary to improve the equipment in hospitals.

Low Vision Services

There are no official low vision services, even at the university centres. Low vision services are provided only occasionally at doctors' discretion. The Low vision services are shared between the patients and the social services at the Ministry of Labour and Social Politics. There are two schools for blind children in Bulgaria, one in Sofia and one in Varna. The main needs in this area refer to training staff and establishing at least three to four low vision centres with staff and resources.

Areas for improvement

There is a need to build more clinics for low vision patients and train the necessary personnel for this work in Bulgaria.

Provision of Eye Care – General Comments

Several proposals for developing a policy and a national plan for eye care and the prevention of blindness have been made to the MoH (almost every other year). The main concerns in the area are: training, re-certification and quality control. Health care is financed by the NHIF without adequate attention to the quality of the provided services and vision results. Eye care services (both their affordability and availability) were affected by changes in the economic infrastructure in the (sub-region).

Areas for improvement

The main concerns in Bulgaria are training, re-certification and quality control.

Management and Financing of Health Care

Health care is financed by the NHIF. The NHIF collects a tax equal to 8% of the monthly remuneration of every worker (the cost is split between the employer who covers 4.8% and the employee at 3.2%). People exempted from this tax (and covered in this case only by the state) are children, public service employees and pensioners.

Eye care is given very low priority at the MoH because of other urgent agendas. The payments by the NHIF are limited and too often delayed to assure good quality services and working conditions. Payments are distributed into “clinical paths” covering different diagnoses, treatment and surgeries.

The health system is based on general practitioners who refer patients to the specialists, including ophthalmologists. This may cause delays in the proper care, especially in cases of emergency. After patients have been referred to see a specialist, they have to pay for medical devices, consumables, and medications, with consideration to the limited health budget. Now all patients are expected to pay for treatment in the state hospitals. Treatment is not financed, leading to unnecessary hospitalization and abuse of the budget.

There are several private health insurance companies (some of them possess their own hospital), but they represent just 2% of the health care expenditure. The insurance they offer is additional and voluntary. In order to have insurance with them, one has to be employed on a permanent basis. Secondly, the company one works for has to be large enough to be able to bear the cost of this additional insurance – the employee does not pay anything. This additional and volunteer insurance covers the costs of health services which are not on the list of the NHIF, and provides with the opportunity to undergo specialized examination without a GP’s referral.

Prevalence and causes of blindness

During the period 1993 – 1995 a population-based blindness and visual impairment survey was performed, and results were published in *Ophthalmic Epidemiology* 1996; 3: 143-149.

Sofia Eye Survey (SES) covered the Sofia district region and Sofia city in Western Bulgaria (population – 2, 4 million). It contains data on 6275 randomly selected males and females from urban and rural areas. A complete house-to-house census on all adults over the age of 40 was undertaken and a visual acuity test performed on 98%. One hundred and seventy –one individuals (with VA of the better eye below 0.3) were referred for a comprehensive eye examination in mydriasis. Trained ophthalmologists refracted all the referred subjects and then examined them with a slit lamp and ophthalmoscope to determine the cause of visual loss. The rate of blindness (defined as vision in

the better eye worse than 0.05) in this population sample was 0.49% and the rate of visual impairment (0.3 to 0.5 in the better eye) was 0.83% (total visual impairment + blindness – 1.32%). The leading cause of both blindness and visual impairment was cataract (40-50%), followed by ARMD (20%), glaucoma (20%) and DR (10%).

Areas for improvement

There is a need to frequently and thoroughly examine the Bulgarian population to avoid unnecessary damage to the eyes.

Education in ophthalmology

To obtain a medical degree takes 6 years. Those who want to become an ophthalmologist must pass an entrance examination. It is very competitive and only those with the highest grade are accepted. Young doctors must spend 4 years full time at postgraduate centres or 5 years part-time.

There are national educational guidelines for training in ophthalmology but only in the Bulgarian language.

The current postgraduate curriculum involves:

- four year training at certified centres with teaching faculty;
- a schedule of colloquiums
- a final examination – two sessions per year (May and December)

Bulgarian ophthalmologists must pay for the training and not all of them can afford it. There are 12 accredited places in the country and about 58 ophthalmologists are in training per year but there is no any limit. The number of residents in ophthalmology is offered every year by the state educational authorities At the Sofia Medical University, according to the needs of such specialists in the country (the number is also subject to the suggestions of the university hospitals). Recently, the number of candidates and residents has been decreasing. After finishing the specialization program defined by the curriculum, residents have to pass the special State certification exam held in Sofia by a board appointed by the MoH. Usually around 60% of the residents pass the exam and receive the Certificate for Specialists in Ophthalmology. They then apply to the Union of Bulgarian Physicians for permission to practice in this area.

There are no optometrists in Bulgaria.

Areas for improvement

Government involvement, re-certification, focus on practical skills responsibility of faculty – each faculty member should be more responsible towards their mentoring/teaching duties, better communicate with their trainees etc., quality control.

6.1.2. Eye Health Care Services in the Czech Republic in 2009

Total number of ophthalmic beds: not available
Total number of ophthalmologists in the country: 1099

Information listed only in those sections for which it was available.

Performing cataract surgeries	184
Performing vitreoretinal surgeries	
Performing retinal laser photocoagulation	
Specialized in diagnostics and treatment of retinopathy of prematurity	
Specialized in pediatric ophthalmology	130

Cataract Surgery

Extra capsular extraction with intraocular lens	
Extra capsular extraction without intraocular lens	
Phacoemulsification with intraocular lens	82,253
Phacoemulsification without intraocular lens	13
Other with intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	
Other without intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	

Vitreoretinal Surgery

Extraocular surgery for retinal detachment	
Pars plana vitrectomy for retinal detachment	
Pars plana vitrectomy for complications of diabetes mellitus	
Surgery for intraocular trauma	
Vitrectomy for endophthalmitis	
Others	

Ophthalmic Equipment

Indirect Ophthalmoscope	
Phacoemulsification equipment	
Pars plane vitrectomy equipment	
Laser for retinal phacoemulsification	
YAG laser	
Funduscamera	

Cataract

The cataract surgery rate was 7.90 in 2009 in the Czech Republic. There is no fee for insured patients who undergo cataract surgery. An intraocular lens is included. The most commonly used intraocular lens is made of hydrophilic acrylate.

The guidelines for cataract surgery in adults are under preparation by the Czech Society of Cataract and Refractive Surgery, and should be available in 2012. So far, there is no option for the patients to receive an intraocular lens of their choice, as there is no provision for the patients to partially cover its cost. This matter is under negotiations with the health insurance companies, and it is expected that patients will be allowed to purchase an intraocular lens of their choice later in 2011. There is a fixed reimbursement for cataract surgery in the amount of approximately € 400. This amount is received per patient by the eye care establishment providing cataract surgeries. It is not sufficient and there are negotiations to increase this amount.

CSCRS – Czech Society of Cataract and Refractive Surgery provided this information.

Areas for improvement

An option for the patients to purchase the latest IOLs
Increase reimbursements for cataract surgeries

Diabetic Retinopathy (DR)

There is a national plan for the screening and treatment of diabetes. There is also a plan for the comprehensive care for patients with eye complications due to diabetes. The latter is with the National Society of Ophthalmology, however, it has not been endorsed by the Ministry of Health.

Areas for improvement

Improve collaboration among diabetologists and ophthalmologists to strengthen referral, screening and follow-up.
Increase awareness among patients of the eye complications in diabetes.

Glaucoma

The European Glaucoma Society Guidelines are used for screening and treatment:

<http://www.eugs.org/eng/default.asp>

It appears there is a sufficient number of ophthalmologists available for the screening and treatment of glaucoma. It is understood that the equipment and consumables are available. Most frequently used medication is supplied by Alcon, Neomed, Pfizer, and MSD.

Areas for improvement

- To reduce waiting time for patients with glaucoma
- To better equip state operated hospitals
- To agree on the referral system for glaucoma specialists

Age Related Macular Degeneration (ARMD)

Fluorescein angiography is available in all provincial hospitals. Some of the hospitals have optical coherence tomography devices (OCT).

The treatment of the neovascular form of ARMD is provided in seven clinical centres in the country. The treatment options comprise photodynamic therapy with Visudyne and Anti vascular endothelial growth factor (anti-VEGF) medications (e.g. Avastin for intravitreal injection).

Areas for improvement

Specialized centers providing comprehensive therapy have a limited annual budget which cannot be exceeded. Patients who can be fitted in the budget are treated for free. Those interventions which exceed the ceiling need to be paid.

Retinopathy of Prematurity (ROP)

Conditions for screening

Compulsory:

- All babies born before or in the 32nd gestation week
- All babies under 1500g birth weight

Optional:

- Babies with intensive oxygen therapy during the first days or weeks of life
- Babies in poor health status (cardio-pulmonary conditions, anemia, etc.)

The screening is usually initiated in the 5th week of life or 31st postconceptional week.

Depending on the fundus findings, follow-up is scheduled once in one or two weeks. In case of atypical findings, it may be performed more frequently, followed by treatment in one or two days.

The screening is usually terminated in and after the 40th postconceptional week. The babies are followed up by pediatric ophthalmologists.

The screening follows the internationally recognized recommendations. It is coordinated by the respective neonatological units, in collaboration with ophthalmologists. In 2008, the National Ophthalmological Society endorsed "a dual screening principle" combining two conditions: 5th week of life and/or 31st postconceptional week.

Tertiary level screening and treatment is provided at the following paediatric eye departments: two in Prague, one in Brno, one in Hradec Kralove.

The national reference centre for ROP is located at the university paediatric eye clinic in Prague - Motol. The paediatric eye department was founded in 1979 and is the leading the ROP care provision in the country. Another is the ROP centre at the university paediatric eye clinic in Brno.

There has been a significant increase in the number of extremely low birth weight babies born and surviving (on average there are 1500 per year). This offers new challenges for the provision of immediate paediatric ophthalmological services. The success in controlling ROP in babies at risk is subject to the currently available technologies and highly experienced ROP specialists.

It has been recognized that the screening and follow-up for babies at risk of ROP has been significantly improved. It remains a priority of neonatological and ophthalmological societies. There is well organized interdisciplinary care for those with ROP related vision impairment.

In addition to cryotherapy and retinal laser treatment, new treatment protocols using Avastin for intravitreal injection are under consideration.

Areas for improvement

Human resource development to secure sufficient number of highly skilled paediatric ophthalmologists

Availability of the latest screening and treatment devices, e.g. Ret Cam

With the increase in the numbers of extremely low birth weight babies, ROP control requirements remain challenging

Low Vision Services

1) Low vision devices

Health insurance companies have lists of low-vision devices which are covered for patients who are insured with them. They comprise special glasses, loupes, telescopes, etc. Those which are not on the list are covered by the patient. Loupes can be reimbursed once in five years, telescopes once in eight years, for instance. In justified cases, the period can be shortened. There are social and educational services for people with low vision and those who are blind.

There are 14 ophthalmologists - low vision specialists who are eligible to endorse a prescription for low vision devices for reimbursement by the respective health insurance company. They are responsible for patient assessment, prescription and follow-up. <http://www.sons.cz/ocni-lekari.php>
Low vision aids are made or ordered in specialized optic shops.

2) Social and educational services:

The Early Intervention Centres provide comprehensive services for children with disabilities up to the age of six years: <http://www.ranapece.cz/>

There are resource centres and educational institutions for school-age children. The historically longest operating establishment for blind children was

founded in 1907, the first educational establishment of its kind in the Czech lands: <http://www.skolajj.cz/>

Children over 15 years of age and adults are helped by various governmental and nongovernmental organizations, some with district operations, e.g. <http://petrahele.webnode.cz/sikovne-odkazy2/>
<http://www.brailnet.cz/menueng.htm>
<http://centrumpronevidome.cz/en/>

Areas for improvement

There are financial constraints which limit further expansion of low vision services.

Provision of Eye Care - General Comments

There are guidelines under development for cataract management in adults. It was recognized that additional main preventable and/or treatable eye conditions should be addressed through national guidelines and policies.

It is desirable to negotiate with health insurance companies the possibility for patients who wish so, to be allowed to purchase the latest types of intraocular lenses.

Areas for improvement

The improvement of postgraduate and continued training in ophthalmology is needed. In some institutions, additional resources for equipment are needed.

Management and Financing of Health Care

The following 11 health insurance companies operate in the Czech Republic:

Česká národní zdravotní pojišťovna (222) www.cnzp.cz
Česká průmyslová zdravotní pojišťovna (205) www.czp.cz
Oborová zdravotní pojišťovna zaměstnanců bank, pojišťoven a stavebnictví (207) www.ozp.cz
Revírní bratrská pokladna (213) www.rpb-zb.cz
Vojenská zdravotní pojišťovna ČR (201) www.vozp.cz
Všeobecná zdravotní pojišťovna ČR (111) www.vzp.cz
Zaměstnanecká pojišťovna ŠKODA (209) www.zpskoda.cz
Zdravotní pojišťovna AGEL (227) www.zpagel.cz
Zdravotní pojišťovna Média (228) www.mediazp.cz
Zdravotní pojišťovna METAL-ALIANCE (217) www.zpma.cz
Zdravotní pojišťovna ministerstva vnitra ČR (211) www.zpmvcr.cz

Most treatments and hospital stays are covered by the health insurance companies. Patients financially contribute towards their drugs which are not on the essential list of medicines.

Prevalence and causes of blindness

There is no recent data published.

Education in Ophthalmology

In the Czech Republic it takes 6 year to obtain a medical degree.

Ophthalmologists use the national educational guidelines.

Teaching faculties take care about the pregraduate education and MoH about the post-graduate education in the Czech Republic.

As of December 2010, a new guideline was introduced by the Ministry of Health (No 361 of 1 December 2010) addressing postgraduate education in medicine, stomatology and pharmacology. Ophthalmology was recognized as a distinct subspecialty according to the curriculum as follows:

The initial two year period, comprising of:

- Internal medicine - two months
- General surgery - two months
- Acute and emergency medicine: two months
- Ophthalmology - the remaining period
- The graduates qualify for the L2 Grade

The following three year period comprises ophthalmology only. The process has been decentralized and administered by the individual university medical schools. It is completed by an exam which is recognized within the EU. There are 63 certified training eye care establishments in the country, all are tertiary centres, and some selected secondary eye care centres. Some of them are private.

There are about 30 new ophthalmologists graduating annually.

Optometrists are trained at two teaching institutions in the Czech Republic:

There are about 460 optometrists and ophthalmologists in the CR.

There is a scientific journal dedicated to eye care:

Czech and Slovak Ophthalmology

Editor: Prof. Eva Vlková

Contact address: Sokolská 31

120 00 Prague 2

evlkova@fnbrno.cz

6.1.3. Eye Health Care Services in Estonia in 2010

Total number of ophthalmic beds: 20
Total number of ophthalmologists in the country: 132

Performing cataract surgeries	19
Performing vitreoretinal surgeries	6
Performing retinal laser photocoagulation	18
Specialized in diagnostics and treatment of retinopathy of prematurity	3
Specialized in pediatric ophthalmology	6

Cataract Surgery

Extra capsular extraction with intraocular lens	16
Extra capsular extraction without intraocular lens	11
Phacoemulsification with intraocular lens	12,700
Phacoemulsification without intraocular lens	27
Other with intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	8
Other without intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	14
Keratoplasty	56

Vitreoretinal Surgery

Extraocular surgery for retinal detachment	181
Pars plana vitrectomy for retinal detachment	117
Pars plana vitrectomy for complications of diabetes mellitus	147
Surgery for intraocular trauma	72
Vitrectomy for endophthalmitis	2
Others	62

Ophthalmic Equipment

Indirect ophthalmoscope	7
Phacoemulsification equipment	10
Pars plana vitrectomy equipment	4
Laser for retinal diseases	6
YAG laser	5
Funduscamera	5

Cataract

Cataract patients do not pay for surgery.

The average waiting list for a cataract operation is from two months to two years, depending on the indications (short and long list) and each department's waiting list depends on the agreement with the local Sickness Fund. There are enough cataract surgeons in the country.

Diabetic Retinopathy (DR)

There is no comprehensive national plan for the screening and treatment of patients with diabetes at the Ministry of Health.

Areas for improvement

- Eye doctors should use up to date equipment: EG retinal laser
- Increase retina laser availability in small ophthalmic service units
- Improve cooperation between ophthalmologists and endocrinologists, in order to select out patients with diabetes who need laser treatment as early as possible

Glaucoma

To improve eye care in the field of glaucoma patients, young doctors should be better educated in glaucoma surgery.

Age Related Macular Degeneration (ARMD)

ARMD patients have their diagnosis confirmed by Fundus-Camera, FAG, OCT (free-of-charge). Intravitreal injections, must be paid (proximately €60)

Retinopathy of Prematurity (ROP)

All babies at risk for ROP are screened at Tartu University Eye Clinic. Estonian doctors currently use the internationally adopted guidelines for screening: birth weight lower than 1500g and/or 32 week and less gestational age. East Tallinn Central Hospital Eye Clinic has a specialized centre for treating babies with ROP.

Areas for improvement

Treatment for babies at risk of vision loss due to ROP should be made possible in a timely manner.

Low Vision Service

The Tallinn Centre of Visual Rehabilitation provides care for low vision patients in Estonia and covers the whole country. Patients have to pay appr.10%-50% of the cost of the low vision aid, depending on the type.

Patients might not receive all the necessary low vision aids, due to the lack of governmental funding. Priority is usually given to children, young people and people in working age.

Provision of Eye Care – General Comments

In Estonia, there is no national policy for eye care provision and eye health.

The level of financing is relatively good. It is necessary to promote the education of young ophthalmologists. Estonia should find more training programs for junior ophthalmologists in eye centres abroad, as it is too small a country for such programs.

Management and Financing of Health Care

Thirteen percent of the national budget is allocated to the social sphere. That means that Estonia is able to cover all ophthalmology treatments and medical care for ophthalmology patients.

Money comes from the MoH (originally from taxes).

Patients do not expect to pay for their treatment and for staying in hospital.

There is very good collaboration between Estonia, Latvia and Lithuania. These countries help send patient abroad if is necessary, and money comes from all three countries.

There exists a collaboration agreement.

Prevalence and causes of blindness

There are no publications addressing prevalence and causes of blindness in Estonia.

Education

A medical degree takes 6 years in Estonia.

Annually 3 – 4 residents in ophthalmology graduate. Estonian eye doctors use the national educational guidelines for specialized training in ophthalmology. The current postgraduate curriculum consists of a three, year training period with an examination after this period. About 30% of residents take the EBO exam in Paris every year. During training, ophthalmologists receive a salary. Estonia has two accredited training places; one is in Tartu and one in Tallinn. In 2009 were trained 12 junior eye doctors. In Estonia there is no central institution granting, a permission to practice ophthalmology.

In Tallinn and Tartu there are training institutions for optometrists. About 20 optometrists per year graduate from these centres. The length of the study is four years.

There is no national journal of ophthalmology.

Areas for improvement

- Identification of training opportunities for junior eye doctors abroad
- Establishment of a wet-lab in Tallinn and Tartu

6.1.4. Eye Health Care Services in Hungary in 2009

Total number of ophthalmic beds: 1070
Total number of ophthalmologists in the country: 1064

Performing cataract surgeries	394
Performing vitro-retinal surgeries	69
Performing retinal laser photocoagulation	224
Specialized in diagnostics and treatment of retinopathy of prematurity	90
Specialized in pediatric ophthalmology	89

Cataract Surgery

Extra capsular extraction with intraocular lens	2, 884
Extra capsular extraction without intraocular lens	64
Phacoemulsification with intraocular lens	54 936
Phacoemulsification without intraocular lens	275
Other with intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	1,153
Other without intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	114
Keratoplasty	583

Vitreoretinal Surgery

Extraocular surgery for retinal detachment	306
Pars plana vitrectomy for retinal detachment	1,126
Pars plana vitrectomy for complications of diabetes mellitus	1,573
Surgery for intraocular trauma	134
Vitrectomy for endophthalmitis	48
Others	326

Ophthalmic Equipment

Indirect ophthalmoscope	82
Phacoemulsification equipment	76
Pars plane vitrectomy equipment	49
Laser for retinal photocoagulation	37
YAG laser	27
Funduscamera	28

Cataract

Patients usually do not pay for cataract surgery. Those patients who are insured and prefer having surgery with no additional delay are requested to pay approximately €385.

If patients want to get a multifocal IOL, they have to pay for it. Multifocal IOL (Restor) costs 168.750 Ft which is approx. € 602. The average IOL costs 30.000 - 40.000 Ft, which is approx. € 107-14. Otherwise patients can not choose the type of IOL.

On the average, patients have to wait 103 days (7-540 days) for cataract surgery. (Big differences may be caused by the uneven density of hospitals and population in the country.)

The number of cataract surgeons is sufficient, but the distribution is not equable as there are many more surgeons in the capital and bigger cities, and few in the countryside.

More eye services need be established in smaller cities. This is conditioned by having the hospitals there better equipped and by the MoH permitting the provision of cataract surgeries, including more financial support to the hospitals.

Areas for improvement

It is necessary to distribute eye doctors between big cities and the countryside.

Hospitals need better equipment for cataract surgeries

Diabetic Retinopathy (DR)

In Hungary there are DR guidelines published and updated by the Ministry of Health. About the EBM diagnosis and treatment for diabetic retinopathy. However no national program has been started, in spite of the joined and repeated initiatives of the Hungarian Ophthalmological Society and National Diabetes Society.

Areas for improvement

Firstly, the most important issue is to improve the prevention of diabetic retinopathy and have the patient informed about the illness. Secondly, the screening of patients by general practitioners and referral to a diabetologist to manage the carbohydrate balance. The next step is regular screening by an ophthalmologist and laser photocoagulation if essential. Training of eye doctors is indispensable.

In the past several years, a national telemedical diabetic screening program has been proposed, but has not yet been accepted. Without financial support, only a pilot study was completed with some encouraging results.

Glaucoma

Screening after the age of 45 is the most important service which should be improved. Positive family history, applanation tonometry, papilla analysis with a slit lamp or optical coherence tomography, and nerve fiber layer analysis with scanning laser polarimetry are all necessary for diagnosis. Training of eye doctors is indispensable. Glaucoma treatment (drops) is considerably expensive for most of the patients in Hungary.

There is a protocol of the Ministry of Health for diagnosis and treatment for glaucoma, based on the European Glaucoma Society EBM guidelines.
www.eum.hu/egeszsegepolitika/minosegfejlesztes/szem-glaucoma-kezelese

Age Related Macular Degeneration (ARMD)

In Hungary there are four officially recognized university eye departments for the diagnosis and treatment of ARMD. The available methods for extrafoveal CNV are: laser therapy, PDT used only for CNV in high myopia or angioid streaks, and intravitreal anti VEGF injection (ranibizumab=Lucentis) used for wet AMD in most cases.

ARMD treatment is free for patients but due to the very limited budget for the Lucentis intravitreal injection therapy, many patients (around 50-70%) are not treated in a timely manner and go blind.

Cost of one Lucentis intravitreal injection is 270.000 Ft which is approximately 964 EUR

The four existing ARMD centers may be enough for Hungary, but more patients should receive intravitreal ranibizumab.

Areas for improvement

Financial support for ARMD is necessary.

Retinopathy of Prematurity (ROP)

There is a protocol of the Ministry of Health for screening and treating ROP.

The first examination is in the 31st postconceptional or 4th postnatal week. Babies born before the 27th gestational week are examined in the 31st postconceptional week; babies born after the 27th gestational week are examined in the 4th postnatal week for the first time. Treatment is laser photocoagulation or vitrectomy. ROP treatment is available in all of the four university eye hospitals.

The provision of screening in smaller hospitals -not only at university eye departments- should be secured. More and better equipment (indirect binocular ophthalmoscope and laser) would be essential. More eye doctors through Hungary should be trained in the screening method. More doctors should be trained in the main centres for laser photocoagulation. Alternatively telemedical screening might solve the problem, and a pilot program is going on with great success (the first 200 babies were already screened in this way in the framework of a comparative study).

Areas for improvement

The provision of screening in smaller hospitals

More and better equipment (indirect binocular ophthalmoscope and laser) would be essential

More doctors should be trained in the main centres for laser photocoagulation

Low Vision Services

There are state institutions, foundations and civil organizations in Hungary. The Blind's State Institute is in Budapest, two foundations came into existence in 2006 (Szempont and Fehér Bot Alapítvány). Since 2008, rehabilitation centres are in the countryside. These institutions receive the money from European Union tenders. The services of rehabilitation centres are free for patients.

Various examinations are provided to patients (e.g. functional visual acuity tests, psychological tests). Patients are trained to manage their everyday life (e.g. public transport, cooking, cleaning and how to find an adequate job). They learn Braille and to work with a computer, and how to use optical aids. They are allowed to borrow optical aids.

Provision of Eye Care - General Comments

The Ministry of Health provides guide lines or directives which can be found below (no English version available).

[HTTP://WWW.EUM.HU/EGESZSEGPOLITIKA/MINOSEGFEJLESZTES/SZEMESZET](http://www.eum.hu/EGESZSEGPOLITIKA/MINOSEGFEJLESZTES/SZEMESZET)

Areas for improvement

The Hungarian VISION 2020 program is managed by the Hungarian District Ophthalmological Society with close cooperation with national institutions, organizations, foundations and patients' clubs who are also responsible for visual rehabilitation in the country. In the last decade, the Ministry of Social Welfare provided a lot of support to developing a national vision rehabilitation network. Based on current discussions with the authorities, it seems that vision prevention will also become a governmental priority in the future.

Better financing of AMD intravitreal therapy is necessary. Official and financial support of screening programmes (diabetes, glaucoma, ROP) proposed by the experts need to be improved as well.

Management and Financing of Health Care

The Hungarian health care system has recently undergone extensive privatization but its funding is still predominantly through the National Health Insurance Fund (HIF) (Országos Egészségbiztosítási Pénztár – OEP) and taxes.

Hungary's healthcare system is financed through the Health Insurance Fund (HIF), which is primarily responsible for covering health care costs. The result is a mix of tax and social insurance-based funds responsible for financing Hungary's system.

Health insurance contributions are collected from employees, who pay 3% of their total income, and employers who pay 15% of the employee's gross salary plus a lump sum tax or 'healthcare contribution'. The population also pays local and national income tax, which helps to finance the investment costs of health care. Patients make co-payments on certain services, including pharmaceuticals, dental care and rehabilitation. These out-of-pocket payments have increased substantially since 1990, and currently contribute 18% to health care financing.

There are no fees to pay for services. It is fully covered by the health insurance company. Coverage is universal and provides access to all ambulatory and secondary hospital health care. All citizens are covered, regardless of their employment status, with the government paying contributions for certain groups such as the unemployed and pensioners. Only one national health insurance company exists which is owned by the Hungarian Government. Hungarian patients do not expect to pay for their treatment and stay in a hospital. They do not pay for drugs during staying in a hospital as well but for home treatment they have to buy medicines and drops. There is some governmental support in drug prices ranging from 0 to 100% depending on the diagnosis and drug specialty. If the patients have medication for other general or special diseases, they have to take their own medicines during their stay in the hospital. A hospital VIP room (single room with television and own bathroom) costs 10.000 Ft/day which is approx. € 36.

Prevalence and causes of blindness

The calculated incidence of blindness is 59/100000 persons per year. The leading causes of blindness in Hungary are: AMD (22,7%), diabetic retinopathy (15,6%), myopia (13,9%), glaucoma (12,6%), cataract (7%), and optic nerve atrophy (6,4%).

Title of the published articles:

Causes of blindness in Hungary between 1996 and 2000. (Article in Hungarian)

Nemeth J., Frigýik A., Vastag O., Gócze P., Pető T., Elek I., Adatszolgáltatók: Vaksági okok Magyarországon 1996 és 2000 között. Szemészet 2005; 142: 127-133.

Education in ophthalmology

In Hungary it takes 6 years to complete a medical degree. The national educational guidelines are available at: <http://www.sote.hu/intezetek/oktatas/>

The current postgraduate curriculum for specializing in ophthalmology comprises the following:

1st year: 6 months emergency, 1 month neurosurgery, 5 months microsurgery in ophthalmology practice (wet lab practice on animal eyes, assisting in operating theatre, theoretic lectures)

2nd year: 3 months basic examination methods in ophthalmology, 1 month electrophysiology, 2 months ultrasonography, 1 month special diagnostic methods in ophthalmology (corneal topography, nerve fiber analyzer, HRT etc.), 1 month special investigations (FLAG, MRI, CT etc.), 1 month clinicopathology, 1 month ergophthalmology, 1 month laser in ophthalmology

3rd year: Anterior segment diseases of the eye: 2 months eyelids and dacryology, 2 months conjunctival and corneal diseases, corneal operations, refractive surgery, 3 months diseases of the lens, assisting in cataract operations, first cataract surgery, 2 months treatment of anterior segment and penetrating injuries, 3 months glaucoma diagnosis, conservative and surgical treatment

4th year: Uveal and posterior segment diseases: 2 months uveal and posterior segment inflammation, endophthalmitis, 4 months vascular retinal diseases, 4 months acquired macular disorders, 2 months chorioretinal and chorioideal diseases, tumors, hereditary and congenital retinal and chorioretinal diseases. Assisting in operations, cataract surgery on their own, retinal photocoagulation, smaller operations are expected to perform in this year.

5th year: 4 months pediatric ophthalmology, 3 months ophthalmoneurology, 2 months adnexal diseases, 2 months tumors, 1 month low vision clinic.

Closing examination in front of an ad hoc national board of ophthalmological professors. The ophthalmologists do not have to pay for training and they receive a salary.

There are four grades of accreditation.

“A “ type: ophthalmologist in training can spend all 5 years of training (4 university eye departments and 1 department which is not a university)

“B” type: ophthalmologist in training can spend only 2 years of training (all the departments of the country)

“C” type: ophthalmologist in training can spend only 6 months of training (all the outpatient clinics of the country)

“D” type: non accredited place, training is not performed there,

Accreditation criteria are: the institution of the training has to have adequate staff and premises, sufficient numbers of patients, operations and tutors with experience and scientific degrees. The institution has to have sufficient equipment and instruments for practical and theoretical training. National and international literature, ophthalmological books and databases have to be available for ophthalmologists in training.

The terms of accreditation are regulated by the Ministry of Health.

Fifteen new junior doctors were accepted for e training in the year 2009.

Altogether 120 doctors were in the five year training in the year of 2009.

After the 2nd year, ophthalmologists in training have to find an “A” or “B” type accredited training centre which can provided a salary for them and let them go back to the “A” type accredited training centre for the last, 5th year. “B” type places usually have enough or close to enough eye doctors, so there can be a limit to number of junior eye doctors to be trained. There is a lack of graduated eye doctors in “C” type places, in particular in the countryside, as junior eye doctors do not like to go to these clinics, because they are not accredited.

The National Examination Committee of the Ministry of Health gives permission to practice after successfully passing a theoretic and practical examination following 5 years of training. After this examination, graduated eye doctors have to spend an additional 5 years in accredited training centres to get permission to perform surgeries on their own.

There is one educational establishment in Hungary where optometrists are trained: Semmelweis University Budapest, at high school level. Until now 980 optometrists have graduated. An estimated 20-25 of them work abroad, 40-50 are on maternity leave, 10 of them died. Approximately 800 optometrists are active.

There is a scientific journal dedicated to eye care:

Title of the Journal: Szemészet

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1124 Budapest, Lejtő út 27.

hatvani_istvan@hotmail.com

Tel/fax: 0036-1-319-1738

6.1.5. Eye Health Care Services in Latvia in 2009

Total number of ophthalmic beds: 56

Total number of ophthalmologists in the country: 251

Performing cataract surgeries	46
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Performing vitreoretinal surgeries	11
Performing retinal laser photocoagulation	14
Specialized in diagnostics and treatment of retinopathy of prematurity	3
Specialized in pediatric ophthalmology	24

Cataract Surgery

Extra capsular extraction with intraocular lens	592
Extra capsular extraction without intraocular lens	5
Phacoemulsification with intraocular lens	10,969
Phacoemulsification without intraocular lens	
Other with intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	
Other without intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	
Keratoplasty	21

Vitreoretinal Surgery

Extraocular surgery for retinal detachment	176
Pars plana vitrectomy for retinal detachment	263
Pars plana vitrectomy for complications of diabetes mellitus	112
Surgery for intraocular trauma	134
Vitrectomy for endophthalmitis	3
Others	

Ophthalmic Equipment

Indirect ophthalmoscope	24aprox.
Phacoemulsification equipment	18
Pars planavitrectomy equipment	5
Laser for retinal phacoemulsification	12
YAG laser	7
Funduscamera	9

Cataract

The cataract surgery rate (CSR) was 5.15 in 2009 in Latvia. Patients pay € 20 in state hospitals for cataract surgery and in private hospitals € 648. They do not pay for an IOL. The waiting list is two years. There is enough cataract surgeons.

Areas for improvement

Latvian ophthalmology needs more funding for cataract surgery

Diabetic Retinopathy (DR)

Latvia has a comprehensive national plan for the screening and treatment of patients with diabetes but needs to add the screening database to the national register.

Areas for improvement

It is necessary to add the screening database of patients to the national register.

Glaucoma

Doctors who treat patients with glaucoma use the European Glaucoma Guidelines - EGS

Age Related Macular Degeneration (ARMD)

ARMD patients must pay for Lucentis and Avastin.

Areas for improvement

It would be helpful if Lucentis is free.

Retinopathy of Prematurity (ROP)

The general practice is 100 % screening of prematurity born babies by a photo with retcam.
Latvian ophthalmologists use their national guidelines.

There are specialized centres for treating babies with ROP in childrens ' hospitals and eye clinics.

Areas for improvement

It is necessary to improve anti-VEGF treatment

Low Vision Services

The state pays for magnifying glasses and some reading machines for patients with visual impairment due to ROP.

Provision of Eye Care - General Comments

There is no national policy document for the provision of eye care and eye health in general.

Areas for improvement

Latvia needs more funding to improve eye care in the country

Management and Financing of Health Care

In Latvia there is state insurance and private insurance. State insurance is available for all inhabitants. Private insurance is voluntary. Latvian patients pay 20-60 EUR for surgery and MRI, and CT. In hospitals they must pay 20-60 EUR per day. Regarding the cost of prescribed drugs, only glaucoma drugs are fully compensated to patients.

Prevalence and causes of blindness

Latvian ophthalmologists have reliable information on ARMD, glaucoma and trauma. There are no publications which can give information on the cause of blindness and visual impairment and their prevalence.

Education in ophthalmology

In Latvia to complete a medical degree takes six years. Is available specialized training in ophthalmology, a residency program.

According to the current postgraduate program, young ophthalmologists work four years as residents and then must pass a final exam. To become an ophthalmologist in Latvia young eye doctors must be involved in tender. They receive a salary while in training.

There are two accredited eye departments to train ophthalmologists in Latvia. Ten junior eye doctors are trained per year. Latvia has no limit as to the number of young doctors in training. They are limited by funding received from the government. After the residency exam, junior doctors get permission to practice as ophthalmologists.

Every year, 20 optometrists are trained at university in Latvia. In Latvia, there is no national journal of ophthalmology

Areas for improvement

The most important issues for improvement are the training of eye doctors and more training exchange programs.

6.1.6. Eye Health Care Services in Lithuania in 2009

Total number of ophthalmic beds: 268
Total number of ophthalmologists in the country: 400

Performing cataract surgeries	41
Performing vitreoretinal surgeries	8
Performing retinal laser photocoagulation	13
Specialized in diagnostics and treatment of retinopathy of prematurity	4
Specialized in pediatric ophthalmology	13

Cataract Surgery

Extra capsular extraction with intraocular lens	439
Extra capsular extraction without intraocular lens	31
Phacoemulsification with intraocular lens	12,565
Phacoemulsification without intraocular lens	17
Other with intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	1,018
Other without intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	16
Keratoplasty	63

Vitreoretinal Surgery

Extraocular surgery for retinal detachment	12
Pars plana vitrectomy for retinal detachment	358
Pars plana vitrectomy for complications of diabetes mellitus	225
Surgery for intraocular trauma	165
Vitrectomy for endophthalmitis	3
Others	286

Ophthalmic Equipment

Indirect Ophthalmoscope	36
Phacoemulsification equipment	14
Pars plana vitrectomy equipment	4
Laser for retinal phacoemulsification	8
YAG laser	6
Funduscamera	6

Cataract

Lithuanian patients do not have to pay for cataract surgery. The state patients fund at the Ministry of Health buys IOLs on a tender basis and usually for the lowest price offered. Patients can buy IOLs of different models, but get no reimbursement. The waiting list is 1-3 months approximately.

Lithuania has enough cataract surgeons but some have insufficient equipment for performing cataract surgeries.

Areas for improvement

It is necessary to increase the number of phaco machines and to better supply the eye departments in the country.

Diabetic Retinopathy (DR)

In Lithuania there is a comprehensive national plan for the screening and treatment of patients with diabetes by the departments of endocrinology.

Areas for improvement

It is necessary to improve the availability of retinal lasers, OCT, training of young eye doctors and family doctors and to better supply diagnostic tools.

Glaucoma

Glaucoma is the only eye disease for which medical treatment is covered by the government. There are guidelines for glaucoma the medical treatment. Up-to-date diagnostic equipment for objective glaucoma diagnoses, and follow-up required needs to be improved. Glaucoma shunts and devices for IOP lowering, as well canaloplasty should be covered by patients.

Age related macular degeneration (ARMD)

ARMD is being diagnosed in many eye care establishments, but a comprehensive eye fundus examination with fluorescein angiography is performed in 2-3 places. A negligible amount of patients are treated for free (photodynamic therapy). Intravitreal injections of lucentis are covered by patients. The price of an injection is about 4500,00 Lt (€ 1,323,00), the price for OCT~ 190,00 Lt. (€ 1 - 3,4 Lt) approximately € 56.

Areas for improvement

Diagnostics and treatment should be covered by the government. In the case of lacking expensive diagnostic equipment, diagnostics and treatment need to be referred to the private sector.

Retinopathy of Prematurity (ROP)

The general practice is that babies of gestation less than 32 weeks of age and birth weight less than 2kg, are screened for ROP.

There are two specialized centres for treating babies with ROP, in Vilnius and Kaunas.

Areas for improvement

It is necessary to better supply the eye departments with RetCam, and other equipment

Low Vision Services

There is a low vision care unit for pediatric patients in the Kaunas Medicine University Hospital Eye Clinic. Just few ophthalmologists prescribe low vision aids for adults. Low vision aids are provided by the social insurance system and delivered according to referrals by family doctors or ophthalmologists.

Although there are teaching courses for ophthalmologists on how to prescribe low vision aids, it is not a common practice yet.

Areas for improvement

It is necessary to focus on the common practice.

Provision of Eye Care - General Comments

In Lithuania there is no national policy document for eye care provision. Vitreoretinal surgery is a challenging subspecialty. There are trained, highly qualified experts, but there is a shortage of equipment and consumables. The overall treatment of patients in Lithuania is less expensive in comparison with treatment abroad.

Areas for improvement

Treatment for ARMD should be more accessible and affordable. It is very important to provide recommendations to the government concerning the general strategy in ophthalmology and particularly in the diagnostics and treatment of vitreoretinal diseases and ARMD.

Management and Financing of Health Care

Basic diagnostics and treatment for Lithuanian citizens in state institutions is free. In order to be on the waiting list, one needs to pay an extra fee.

All Lithuanian citizens are covered by health insurance. A private insurance system is under development.

In state institutions patients do not pay, in private ones they must have an agreement with the State Patients' Fund at the Ministry of Health, Republic of Lithuania.

Only glaucoma patients do not have to pay for their medication.

Prevalence and causes of blindness

There is no reliable information on the prevalence and causes of blindness in the country.

Unofficially the main reasons for blindness in Lithuania are glaucoma, complicated high degree myopia and ARMD.

Education in ophthalmology

To complete a medical degree takes six years in Lithuania

There are national educational guidelines for specialized training in ophthalmology. The current postgraduate curriculum for specializing in ophthalmology takes three years of residency. During residency trainees cover all topics of ophthalmology, and gain some knowledge of surgical skill. At the end of the three year course, a trainee must pass the national final exam.

There is no entrance examination to become a trainee - ophthalmologist, only an interview and the overall studies rating are considered. A certain number of residents (set by the Ministry of Education) do not pay for their education and they receive a salary. The others may be admitted to residency, however they pay a fee.

There are 2 accredited places to train ophthalmologists – Kaunas and Vilnius. In 2009, six residents graduated. A limit for the final number of graduates is given by the Ministry of Education. After passing the national examination in ophthalmology, trainees receive the university diploma in ophthalmology.

Lithuanian eye doctors have a National Journal of Ophthalmology: *lietuvos opftalmologija* (ophthalmology of Lithuania), www.medicina.lt

Optometrists are trained at Siauliai University by a faculty from Italy.

Areas for improvement

It has been suggested that postgraduate training for eye doctors be prolonged to four years in order to improve quality.

6.1.7. Eye Health Care Services in Romania in 2009

Total number of ophthalmic beds: 678
Total number of ophthalmologists in the country: 982

Performing cataract surgeries	109
Performing vitro-retinal surgeries	17
Performing retinal laser photocoagulation	52
Specialized in diagnostics and treatment of retinopathy of prematurity	5
Specialized in pediatric ophthalmology	8

Cataract Surgery

Extra capsular extraction with intraocular lens	2, 602
Extra capsular extraction without intraocular lens	22
Phacoemulsification with intraocular lens	34,025
Phacoemulsification without intraocular lens	0
Other with intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	242
Other without intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	0
Keratoplasty	35

Vitreoretinal Surgery

Extraocular surgery for retinal detachment	35
Pars plana vitrectomy for retinal detachment	1, 785
Pars plana vitrectomy for complications of diabetes mellitus	2, 011
Surgery for intraocular trauma	445
Vitrectomy for endophthalmitis	146
Others	710

Ophthalmic Equipment

Indirect Ophthalmoscope	28
Phacoemulsification equipment	31
Pars plana vitrectomy equipment	13
Laser for retinal phacoemulsification	14
YAG laser	8
Funduscamera	7

Cataract

The cataract surgery rate was 1.28 in 2009 in Romania.
Romanian patients do not pay for cataract surgery in state hospitals. In private ones they must pay for surgery, IOL and consumables

All patients pay for their IOL (in private and state clinics). The average amount is € 200-400, except for special IOLs (e.g.: multifocal), for which the price is about € 950.

The average waiting list time for a cataract operation is from 1-2 days; up to 30 days at the very most. This mainly depends on how many procedures the surgeon can perform.

In Romania there are enough cataract surgeons.

Areas for improvement

It is important to improve health insurance conditions, in order to cover the cost of the IOLs.

Better health education of patients, encouraging them to request cataract surgery before their vision significantly deteriorates should be stressed (lower than 0.5, not lower than 0.2, as is usually the case).

Diabetic Retinopathy (DR)

Diabetic retinopathy is currently the leading cause of vision loss in Romania. There is a national program for the screening, monitoring and treatment of patients with diabetes in general, but there is not a national program for the screening of ocular complications of diabetes, only local initiatives (i.e. Bucharest, Craiova, Timisoara, Cluj), where centres dedicated to this purpose exist (patients are monitored with fluorescein angiography, laser photocoagulation, fundus cameras). Patients in advanced stages of DR, needing vitreo-retinal surgery, are sent to the following clinics:

- SUUMC Ophthalmology Clinic (Bucharest)
- Emergency Eye Hospital (Bucharest)
- LaserOptics private clinic (Bucharest)
- UMF Iasi Ophthalmology Clinic
- UMF Cluj Ophthalmology Clinic

Areas for improvement

There is a need for a national program for the screening, monitoring and treatment of DR, paid for by the National Health Insurance System, so that patients could receive adequate services for free.

Local centers dedicated to diabetic retinopathy, at least in all university centres, and one for 2-3 neighboring counties should be assigned. All these centres should be provided with more ophthalmologists educated in laser photocoagulation (with functional, well-maintained equipment). If screening for DR is done in the early stages, with much better collaboration between ophthalmologists, general practitioners and diabetologists, the number of patients needing vitreo-retinal surgery should decrease.

Currently there are over 750,000 diabetic patients in Romania, out of which around 150,000 have already developed ocular complications.

The number of ophthalmologists providing vitreo-retinal surgery is not enough (17 are already specialized and another 10 are doing fellowships); all of

them work in university clinics. They had to cover the 2011 pars plana vitrectomy procedures for diabetes mellitus performed in Romania in 2009.

In 2007, a joint plan for Romania, Bulgaria and the Baltic countries (BALT-BALK) was developed by Professor Lotta Salminen of Finland, in order to request funding from the EU for national screening, monitoring and early treatment of diabetic retinopathy in each of the above-mentioned countries. Sadly, the project was rejected, with no explanation for this decision.

Glaucoma

The Romanian Glaucoma Society was founded nine years ago, affiliated with the Romanian Society of Ophthalmology, which has developed a National Registry of Glaucoma patients, with the help of Romanian ophthalmologists. There is no National Glaucoma Program. supported by the Ministry of Health.

Excellent Glaucoma centres have been created in all universities centres, with appropriate equipment for the diagnosis and monitoring of glaucoma patients.

All Romanian ophthalmologists treat glaucoma patients according to the recommendation of the European Glaucoma Society - EGS.

All anti-glaucoma medication classes are currently available in Romania and medication is fully supported by the National Health Insurance.

Patients' compliance is not adequate. There are not enough Nd-YAG lasers, nor are there enough ALT/SLT Argon lasers.

There are enough ophthalmology surgeons trained for glaucoma surgery. Glaucoma is estimated to be the third main cause of blindness in Romania. There are around 120,000-150,000 glaucoma patients.

Areas for improvement

There is a lack of Nd-YAG lasers, nor are there enough ALT/SLT Argon lasers.

Age Related Macular Degeneration (ARMD)

ARMD is the second leading cause of blindness in Romania, but there is no national program for diagnosis and monitoring, nor an adequate screening program.

Only private clinics and a few of the university clinics have adequate diagnostic equipment (OCT, Fluorescein angiography).

There are many anti-oxidant products on the market, a few of them partially supported by the National Health Insurance System. Intravitreal Bevacizumab and Triamcinolone injections are available. Vitreo-retinal surgery is performed in advanced cases, in Bucharest and Iasi, especially in private practices. The cost of surgery is very high (around €1,000 /eye) and is fully paid for patients, (if they choose a private clinic) and partially paid for by the patients in university clinics, where the cost of surgery itself is supported by the National Health insurance.

Areas for improvement

A national early screening program for ARMD needs to be established and become mandatory. Screening is important for the high risk patient groups, and in the fifth and sixth decade of life. All general practitioners should be involved, and their cooperation improved.

Retinopathy of Prematurity (ROP)

The National Guidelines for ROP screening are: all premature babies born at a gestational age of less/equal to 34 weeks a birth weight of less/equal to 2000 g and, also, all premature babies above these screening criteria, which had an unstable postnatal clinical course and are considered to be at high risk by their attending neonatologist.

There are seven eye departments specialized in laser treatment for RO, in Bucharest (institute for mother and child care) and in district hospitals in Cluj, Iasi, Brasov, Oradea, Targu Mures and Timisoara.

Areas for improvement

It is intended to extend ROP screening in all the main cities in the country and to train pediatric ophthalmologists interested in this issue. It is also hoped that some support will be identified to expand a telemedicine program, at least to pilot it in one district. A national register of ROP will be available soon, which will improve these patients' follow-up.

Low Vision Services

There are low vision services in the main cities of Romania. The basic low vision aids (loupes, telescopes) are affordable for patients but they need to pay for them. Closed circuit television systems are available only in low vision schools. It is desirable to help these patients, providing them with low vision devices at a lower cost.

The first LIONS Club in Romania (Lions Club International, 124th district, Romania) founded in 1990, launched in 2009 the most ambitious project for low vision screening and treatment, "clear vision, healthy eyes", as part of the SightFirst II campaign of Lions International.

Areas for improvement

Objectives: - eye screening of pre-school children

- correction of refractive errors
- adequate amblyopia treatment
- surgical management of strabismus, congenital palpebral ptosis, congenital cataract and congenital glaucoma

Provision of Eye Care - General Comments

There is an ophthalmology commission at the Ministry of Health, but its function is not decisional, it can only be consulted. It supports the requests of ophthalmologists, but is subordinated to the Ministry of Health, whose decisions for ophthalmology policies are limited by the lack of funds. Currently, there is no document for eye care provision and eye health at the Ministry of Health.

A representative of the Ministry of Health signed, on behalf of Romania, the WHO Action Plan for the Prevention of Avoidable Blindness (June 2009). Ten years after the beginning of the „VISION 2020” Program, we find ourselves in a situation where every step forward depends entirely on financial support, which dropped dramatically in the past 2 years (2009-2010), due to the economic crisis.

There is a good training system for ophthalmologists, but after they become specialists, they are not provided with jobs in state clinics/hospitals, or if they are, they have to perform without even minimal technical equipment. Thus, they prefer to work in medical optics shops, in order to earn more money. Additionally, intense recruiting from countries such as France, Germany and England started a few years ago, with ophthalmologists being paid 10-12 times more/month than the Romanian government is willing to pay.

We agree with the Australian experience – National Framework for Action to promote eye health and prevent avoidable blindness, and vision loss, which outlines five areas for action:

- Reduce risks
- Increase early detection
- Improve access to eye care services
- Improve the systems and quality of care
- Improve the evidence base

Areas for improvement

It is essential that comprehensive eye care is part of the public health policy in the country and is financed as part of the national health system.

Management and Financing of Health Care

The employers, employees and other physical/juridical persons must pay around 11.2% of the monthly income to the FNUASS (National Fund of Social Health Insurance). This fund is coordinated by the Ministry of Finances and the National Health Insurance Company (CNAS), who distribute a yearly budget to the County Health Insurance Companies. This budget includes for all types of medical care: outpatient, general practitioners, pharmacies, hospitals, (the latter being financed through the DRG system per solved case), and medical devices (IOL cost is partially supported, with € 60/piece). There are National Health Programs for several chronic diseases, coordinated and financed (from the National Budget) by the Ministry of Health.

In Romania there are health companies such as ING, AIG, ASIMED. These companies are partially involved in the health insurance system; they are optional.

Health insurance does not have a well-defined group of laws. All Romanian citizens, children, the elderly and employees or residents in Romania are entitled to the social health insurance, represented by National Health Insurance Company and County Health Insurance Companies, Health Insurance Company of the Ministry of Transport, Construction and Tourism and Health Insurance Company of Ministry of Defence, Public Order, National Security and Juridical Authority.

Patients do not pay for their treatment in state or private practice if they have a contract with a national health insurance company. Private practices without a contract with health insurance require payment. Patients do not have to pay for treatment if medical treatment is included in the Ministry of Health list of free medicine. The stay in hospital is free.

Areas for improvement

Funding is needed if patients require special IOLs (multifocal), as they must pay for these devices.

Advised tests (OCT) or refractive surgery procedures, etc. are fully paid for by patients.

Prevalence and causes of blindness

ROP is a main cause of childhood blindness.

An article published in *Oftalmologia* no.1/2010, pages 110-117: "Retinopathy of prematurity – screening results on a sample of 1783 premature newborns, examined between September 2002 and December 2007", authors: Ileana Vataavu MD, Constanta Nascutzy, MD, Prof. Silvia Stoicescu, MD, from Institute for Mother and Child Care, Bucharest), emphasized that the overall incidence of ROP was 55%; 15.2% had severe ROP, which required laser photocoagulation, and favourable outcomes of laser treatment were obtained in 86.7% of the total sample.

Education in ophthalmology

To complete a medical degree takes six years in Romania. There are national educational guidelines for specialized training in ophthalmology. The current postgraduate curriculum for specializing in ophthalmology takes five years and involved training. There are two specialization examinations annually (in March and October), organized by the University Departments of Ophthalmology. There is an annually held entrance examination to become a trainee ophthalmologist and is given yearly. Only university eye departments are allowed to train ophthalmologists. There are 12 such University Eye departments in Romania. About 45 ophthalmologists are trained per year and

they receive a salary of € 200 per month. The Ministry of Health grants permission to practice as an ophthalmologist. There is an examination (written and clinical) at the end of the five years of training, allowing ophthalmologists to practice as specialists. The examination is held by the university eye departments.

In Romania there are optometrists who attend studies of 2-3 years, only in private schools. They only practice in private optic shops. Their specialization is not officially recognized by the Ministry of Health and they are not authorized to give prescriptions for glasses or contact lenses in the absence of an ophthalmologist (resident or specialist).

OFTALMOLOGIA Journal, (4 issues/year) is the journal for eye doctors in Romania, web page: www.oftalmologia.ro

Areas for improvement

- Access of all residents in training to modern diagnostic and therapeutic methods (OCT, HRT, GDX, etc), with inclusion of these methods in the final specialty examination
- Access of all residents in training to development of surgical skills (wet-labs, simulators) and inclusion of these skills in the final specialty examination
- Access to multiple sub-specialties, on a regular basis (rotation every 6 months – 1 year), with examination of developed skills and theoretical knowledge after each rotation
- Access to emergency eye departments
- Enrolment of residents in training in research programs

The Romanian Health System is currently undergoing major changes, directly affecting all fields, including ophthalmology care (decrease of hospital beds, decrease in the total of number of doctors in State Health Care, etc). This, added to the negative effects of the financial crisis, lead to a significant reduction in a doctors' monthly income. The consequence is a major migration of residents, specialists and senior doctors to other EU countries. Under these circumstances, although significant progress has been made during the past 5 years (with respect to the doctors' training and technology), in the long term, securing financial and health system stability is the only way to keep and improve eye care services in Romania.

6.1.8. Eye Health Care Services in Serbia in 2009

Total number of ophthalmic beds: 654
Total number of ophthalmologists in the country: 700

Performing cataract surgeries	162
Performing vitro-retinal surgeries	17
Performing retinal laser photocoagulation	51
Specialized in diagnostics and treatment of retinopathy of prematurity	6
Specialized in pediatric ophthalmology	27

Cataract Surgery

Extra capsular extraction with intraocular lens	5, 687
Extra capsular extraction without intraocular lens	305
Phacoemulsification with intraocular lens	15, 988
Phacoemulsification without intraocular lens	87
Other with intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	132
Other without intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	61
Keratoplasty	24

Vitreoretinal Surgery

Extraocular surgery for retinal detachment	407
Pars plana vitrectomy for retinal detachment	299
Pars plana vitrectomy for complications of diabetes mellitus	388
Surgery for intraocular trauma	268
Vitrectomy for endophthalmitis	29
Others	121

Ophthalmic Equipment

Indirect ophthalmoscope	43+10 in private
Phacoemulsification equipment	37+19 in private
Pars plane vitrectomy equipment	7+7 in private
Laser for retinal phacoemulsification	13+15 in private
YAG laser	4+15 in private
Funduscamera	6+5 in private

Cataract

The cataract surgery rate was 2.25 in 2009 in Serbia. There is no payment for cataract surgery. The only payment is the participation: € 0,5 per day. In state hospitals patients have to pay 20% of the IOL cost. The waiting list for a cataract operation is 2-6month. In Serbia there are enough cataract surgeons. In Serbia there were 22, 478 cataract performed in the state hospital, and 4 500 in the private practice in 2009.

According to the last cross section study from 2007-2008, prevalence of cataract in Vojvodina was 1.57% in the population over 50 years of age (12, 800 cases in 38,7% of the population 50+years of age), of these cases 55.3% were incipient and monocular cataracts with (VA> 0.4) and 44.7 visually impaired (5 424 cases).

Areas for improvement

- For better coverage of visually impaired individuals it is important to introduce better criteria for surgery and a central cataract register for determining priority for surgery.
- Introduce an annual plan for the number of surgeries according to the available budget.
- Better support and continuous supply of surgical material (IOL, viscoelastic)
Instruments, equipment and better education and training of young eye doctors

Diabetic Retinopathy (DR)

There is no systematic approach for the screening and treatment of patients with diabetes at the national level. There is no optimal cooperation between the level of health care, practitioners, endocrinologists and ophthalmologists.

According to the blindness and low vision study in Vojvodina 2007/08, diabetic retinopathy is the leading cause of preventable visual impairment (8.7%). The prevalence of diabetes mellitus in Vojvodina is very high (14%) so it is important to introduce a program for diabetic retinopathy prevention which will, most importantly, include the general practitioners and the primary health care level.

There is a need for a national screening plan for diabetic retinopathy, to organize trainings and education of eye doctors and general practitioners, and to provide better health care for diabetics at the primary practice level, as well as better education for diabetic patients about the consequences of poorly regulated diabetes mellitus.

In Serbia there is a low number of retinal specialists as well as specialists for diabetic retinopathy and other retinal diseases.

The number of retinal lasers in the public eye care sector is low and inadequately distributed. There are retinal lasers in private practice clinics (numbers are not available). Should they be covered by health insurance they may provide much better coverage of diabetic patients. □

Areas for improvement

There is a need for a national screening plan for diabetic retinopathy, to organize trainings and education of eye doctors, general practitioners and to provide better health care for diabetics at the primary practice level, as well as better education of diabetic patients about the consequences of poorly regulated diabetes mellitus.

In Serbia there is a low number of retinal specialists as well as specialists for diabetic retinopathy and other retinal diseases.

Glaucoma

There is no national plan for glaucoma screening and treatment. From the study (Blindness and low vision study in Vojvodina 2007/08) the prevalence of visual impairment caused by glaucoma is 5.4% in the population 50+ years of age.

In some institutions diagnosis and treatment is applied according to the European glaucoma guidelines. The treatment is mostly aimed at POAG using medication. Surgery is the treatment of second choice. Modern topical antiglaucomatose medication is not accessible to everyone (various participation paid by the patient). The availability of Nd: Yag lasers is only in university and private clinics.

A national plan should be developed for screening and early diagnosis of glaucoma (mandatory IOP measurement in individuals older than 45 years - when they come for their presbyopic correction). Most of the primary eye care providers however do not have adequate equipment nor a tonometer.

Areas for improvement

There is a need for a national screening and treatment plan for glaucoma.

Age Related Macular Degeneration (ARMD)

Primary and secondary ophthalmological centres refer the patients to tertiary level institutions for diagnostics and treatment. New diagnostic equipment is very scarce (OCT, FA, ICG). Some are available in private practices but not many of the patients can afford it.

If possible, laser treatment is provided for free (in the public hospitals). In public health services, an Anti VEGF treatment is still in trial use (scientific projects - for free, but very low accessibility). In private practices, anti VEGF and PDT are available (€200 -1000 per treatment).

There is a high prevalence of visual impairment caused by AMD (5.8%)

Areas for improvement

It is necessary to develop the registration of anti VEGF medication, education training and equipping of secondary eye care centres for early detection of AMD and timely referral to the retina centres.

Retinopathy of Prematurity (ROP)

Screening of babies at risk of ROP has been available at the pediatric clinic at Novi Sad since 1990 and in Belgrade since 2007. From 1991 to 1997, cryo treatment was performed in threshold stage III. Since 1997, indirect diode laser treatment has been performed in the University eye clinic of Novi Sad. In Belgrade, laser treatment has been performed since 2008.

Screening is available only in the two leading ROP centres but there is only one specialized centre for ROP treatment (University eye clinic, Clinical Centre of Vojvodina in Novi Sad). In the three years since national interest in ROP has evolved, not enough ROP specialists for screening and treating the disease have been trained.

Areas for improvement

It is necessary to develop a unified national policy for the screening and diagnostics of ROP, and to form paediatric teams within neonatologist services for the monitoring and treatment of prematurely born babies. Numbers of ophthalmologists should be trained in cryo and laser treatment, also one of the existing vitreoretinal centres should be equipped and staffed to provide sufficient surgery for ROP patients.

Low Vision Services

Low vision services and low vision aids are not available in Serbia.

Provision of Eye Care - General Comments

The document, Provision on the content and scope of mandatory health care insurance and participation fee for 2007 regulates health care, which rather the participation paid by the patient. According to this document, and for health care in general (not eye care), children and persons older than 65 year of age, or after trauma and tumours, have all their fees are covered by health insurance. Other than that, this document provides the regulations for patient participation for every single health service. The document which can be considered a national policy: “

A national policy for eye care, especially addressing eye diseases causing visual impairment should be developed.
There should be a national policy to standardize knowledge and skills of ophthalmologists to meet the international standards.
An eye bank needs to be established to facilitate cornea transplantations.

Areas for improvement

- Help in improvement and development of national programs for eye care in Serbia according to the programs of VISION 2020.

- Help in organizing a centre for training in the practice of ophthalmology, which could also coordinate future education programs for young ophthalmologists and residents in ophthalmology and optometry. The centre should collaborate with governmental institutions in order to apply and implement the ICO or EBO program of education and assessment to standardize the knowledge of ophthalmologists in the country.
- Organize an eye bank in order to tackle corneal surgery problems

Management and Financing of Health Care

The financing of health care is provided by the government. Every employee appropriates 11.7% of their the monthly income for health insurance and for certain services and medications.

Patients are required to pay the participation – percentage of the participation varies and certain services and drugs are not covered by national insurance.

There is only one compulsory insurance coverage required by law.

Considering the total number of employees, their average income, and the resulting contribution to the health budget, the available funds for health services remain insufficient.

(In 2009 the average income per capita was USD 6,9000.00).

Patients are expected to pay for an eye examination and for the implanted material 20% of the actual price, (optic glasses, IOL and prosthesis)

Areas for improvement

There are essential lists of medication which should be provided at the lowest cost by national insurance.

Prevalence and causes of blindness:

The only epidemiological study regarding the causes of blindness and low vision in Serbia, was performed in the autonomous province of Vojvodina. Two research projects of the Academy of Science and Art and the Faculty of Medicine University of Novi Sad have also been carried a:

1. In 2004: prevalence of registered visual impairment,
2. In 2007- 2010: blindness and low vision and the importance of cataract surgery to decrease treatable blindness in Vojvodina), supported by the provincial secretariat for science and technological development.

The publicised data were presented at various congresses and meetings.

In the cross-section randomized study of the population 50 years and older (total 38.3%), 10.9% of people had vision problems. The prevalence of visual impairment was 1.63% ($va \leq 0.3$ in the better eye), of low vision was 1.13% ($0.3 \geq va > 0.05$) and blindness 0.5% ($va \leq 0.05$).

The rate of visual impairment increased with age and decreased with education level.

The main disease causes of visual impairment were: cataract 23.5%, (31.6% of blind people and 48.2% of those with low vision), diabetic retinopathy 8.7% (18.8% low vision and 23.7% blind), and 5.8% (16.5% low vision and 21.0% blind), glaucoma 5.4% (5.9% low vision and 5.2% blind) and uncorrected refractive errors 29.08%, mainly in the rural population.

In Serbia there has been no additional publication on the causes of blindness and visual impairment and their prevalence.

Education in ophthalmology

To complete a medical degree takes six years in Serbia. From October 2010 there has been a new curriculum adopted by the Ministry of Health: http://www.medical.uns.ac.rs/userfiles/file/Pravilnici/Pravilnik_o_specijalizacijama_21.09.pdf (the ophthalmology specialization curriculum - pages 119-120)

Specialization in ophthalmology training lasts for four years, organized by four existing university clinics. All candidates must spend at least one year at the university eye clinic, the final exam (practical and theoretical part) takes place at the six university centres in Serbia. Criteria are not unified and the examination is evaluated by a three member examination committee.

Since 2001 at the medical faculty of Novi Sad, ICO assessment has been organized and coordinated by Prof. Dr S. Latinović. Over this period of time 55 candidates have applied for the exam and the complete examination (basic science, optics and refraction and clinical science) was completed by 6 candidates and another 10 candidates passed the first two parts. Since this examination is not accepted at the national level in Serbia, interest in the assessment is getting lower.

There is no entrance examination to become a trainee ophthalmologist. Eye doctors who are in training receive a salary.

The only accredited institutions for specialization in ophthalmology are the university departments. There are six university eye departments in Serbia (Belgrade - 3, Novi Sad, Niš, Kragujevac). Ophthalmologists are obligated to spend at least one year at the university eye department and another three years in secondary and primary eye care establishments.

The Ministry of Health has limited the number of specialization in ophthalmology posts according to the needs for eye care in the population. Approximately five residents finish their specialization annually.

Permission for practicing ophthalmology is granted upon completion of the required training and passing the final exam.

Since 2007 training in optometry has been organized at the Department of Physics, Faculty of Natural Scientist in collaboration with the University Eye Departments. The studies last for three years and the first class will be graduating this year. In total there are 32 optometrists trained in the country.

6.2. Short reports on available data presented at the Principle Investigators Meeting

6.2.1 Eye Health Care Services in Albania in 2010

The population of Albania is 3.5 million (Albanian Institute of Statistics) Health care in Albania is fully covered by State National Insurance and all Albanians have to be insured by law. The budget for health services is 3.5% of GDP and health care is directly financed through the state budget. Health insurance fund slowly being under the control and granted over the health financing and contracting but do not covered the private health care up to date. In Albania there are eighty-eight ophthalmologists with thirty-eight in the public sector and fifty eye doctors working in e private practice.

There are seventeen residents in training. Continued Medical Education is performed only at UHC of Tirana. Education in ophthalmology is also completed by local conferences, seminars and congresses. The first International Congress of Ophthalmology was held in Tirana in 2010.

Cataract

An estimated 3,500 cataract operations were performed in Albania in 2010. Most of the patients (approximately 80% phaco) are operated on in Tirana. Surgeons performing cataract surgery need new operating microscopes and phaco machines in all districts.

Areas for improvement

Junior eye doctors need more opportunities for the wet lab training to be trained on the wet labs.

Glaucoma

Ophthalmologists provide the examination, medical and surgical treatment for the glaucoma patients.

There is no national glaucoma screening to date.

Areas for improvement

There is a need for a national screening and treatment plan for glaucoma.

Diabetic Retinopathy (DR)

Screening is possible only for patients from the Tirana district. Ophthalmologists cooperate with endocrinologists there.

In Albania angiography and laser treatments are provided only in private sector where there is suitable equipment for diabetic patients. There are six angiography and four laser machines in private clinics. Vitreo-retinal surgery is not provided in the public hospitals. Eye doctors in Albania urgently need angiography and argon/ diode laser machines in the public sector.

Areas for improvement

Eye doctors in Albania urgently need angiography and argon/ diode laser machines in public sector.

Age Related Macular Degeneration (ARMD)

Albania has no national screening up to now.
In the public sector, doctors who treat ARMD patients do not have OCT available.
Anti-VGF therapy is extremely expensive and limited for patients.
Albanian doctors can provide anti - VGF treatment only in the private sector.
The first LOW VISION CENTRE has opened.

Areas for improvement

There is a need for a national screening plan for ARMD.

6.2.2. Eye Health Care Services in Bosnia and Herzegovina in 2010

Bosnia and Herzegovina is a federal state with 3.8 million habitants. There are 198 ophthalmologists.
In the Federation part: 119 ophthalmologists.
In Republic Srpska: 79 ophthalmologists.
The most important medical centres are in Sarajevo, Tuzla, Mostar, Zenica and Banja Luka. University Clinical Centres are located in: Sarajevo, Tuzla, Mostar and Banja Luka.

In Bosnia and Herzegovina there are five surgically active departments of ophthalmology.

Cataract surgery

Patients have to pay for the only IOL (app. €150) and they can choose the type of IOL; they have to pay extra money for some.
Two - three months is an average waiting list time for a cataract operation.
Considering the needs of the population there should be twice as many cataract surgeons in Bosnia and Herzegovina.

Areas for improvement

In order to improve availability and affordability of cataract surgical services, the major issues which should be addressed are education and equipment. There were 30 000-40 000 cataract surgeries done in 2010 year. This is approximate because all data from private practices are not available.

Diabetic Retinopathy (DR)

There is no national plan (policy) at the Ministry of Health for the screening and treatment of patients with diabetes.

Areas for improvement

To improve care for the patients with diabetic retinopathy, it is necessary to educate patients about DM and eye complications, provide diagnostic procedures and treatment and better access to health facilities.

Glaucoma

There is no policy at the Ministry of Health for a comprehensive eye examination in glaucoma. IOP measurement should be done at the time of prescribing glasses. The parameters for glaucoma diagnosis are value of IOP, optical nerve changes and visual field deterioration.

There are two OCT in Sarajevo, one in Banja Luka and one in Heidelberg. Laser treatment for glaucoma is available. Notice: Only 1 type of eyedrops (Timolol-maleat) is available for free but for all other eyedrops patients have to pay.

Areas for improvement

There is a need for a national screening and treatment plan for glaucoma.

Financial support for treatment is also necessary.

Age Related Macular Degeneration (ARMD)

There is no specialized center or services for age related macular degeneration. For AGVF (Avastin application, for example) a patient will be sent to one of clinical centers (Tuzla, Sarajevo, Banja Luka).

Suggestions for improving services for patients with ARMD include the new diagnostic devices (OCT; Heidelberg retinography, fluorescein angiography)

Areas for improvement

There is a need to improve services for patients with ARMD (OCT; Heidelberg retinography, fluorescein angiograph.)

Retinopathy of Prematurity (ROP)

There is no general practice for the screening of prematurely born babies for ROP. There are no departments or centres in the country specialized in treating babies with ROP. For the time being it is possible only to diagnose ROP but there are no chances for treatment.

Areas for improvement

It is necessary to improve the current care for ROP, which includes providing better screening programmes, equipment and the training of eye doctors.

Low Vision Services

Low vision services are organized at secondary and tertiary eye care levels. Patients have to be on the waiting list if they do not suffer from it anything urgent considering visual acuity. Children have special consideration for low vision services and it not necessary for them to be on a waiting list.

There are no optometrist professions in Bosnia and Herzegovina (only 2 persons with take care about low vision services).

The top causes of visual impairment and blindness in Bosnia and Herzegovina are diabetic retinopathy, cataract and glaucoma.

Areas for improvement

It is necessary to do much more in preventive eye care to educate patients.

Provision of Eye Care

There is no national policy document for eye care provision and eye health in general.

There are many urgent needs concerning eye care services.

1. Equipment - all kinds are necessary
2. Provide drugs to patients for free
4. Management and financing (to be independent from regional health services management and from politics...)

Areas for improvement

To get human resources development to provide comprehensive ophthalmological, surgical, conservative and pediatric ophthalmology and be straight in realisation of these goals.

Management and Financing of Eye Health Care

People without health insurance have to pay all medical services irrespective of the provider in (public or private). Children, students, working and retired people do not have to pay for medical services.

The political situation influences the quality of the health system in Bosnia and Herzegovina.

There are some insurance companies beginning to be established.

Education in Ophthalmology

To complete a medical degree it takes six years in Bosnia and Herzegovina.

There are national educational guidelines for specialisation training in ophthalmology. (www.fmoh.gov.ba/page)

The postgraduate curriculum for specialization in ophthalmology consists of 24 months spent at an ophthalmology department (conservative and surgical treatment assistance) and 12 months is necessary to spend in neurology, neurosurgery, ETN, transfusiology departments, physiology, plastic surgery departments.

There is no "entrance examination" to become an ophthalmologist in training.

During the period of training, the trainees receive salaries.

(In Bosnian and Hrezevovina there are three accredited places for ophthalmologists: Sarajevo, Tuzla and Banja Luka).

Approximately five ophthalmologists complete education per year and there is no limit for young doctors to be trained in ophthalmology, there especially for private needs.

But there is limit how many ophthalmologists could be in one town/ region-for 40,000 habitants per a one an ophthalmologist.

The Regional Ministry of Health is the central institution for granting permission to practice as an ophthalmologist with final approval from the Federal Ministry of Health.

There is no optometrists train programme in B&H

National Journal of Ophthalmology:

Oftalmološki arhiv (Ophthalmology Archive). The person in charge concerning this journal is Emina Alimanović, MD PhD Head of Eye Clinic in UKC Sarajevo.

The webpage of the Federation Ophthalmology Society (www.opht.org/index.)

From the point of future ophthalmological education, it should consist of:

1. Posterior segment surgery (vitroretinal surgery-because of higher number of diabetic retinopathy complications)
2. Phacoemulsification operations which should be acceptable for all ophthalmosurgeons
3. Glaucoma operations
4. ultrasound school education
5. education for strabology (conservative and surgical approach)

Areas for improvement

There are no optometrists in Bosnia and Herzegovina.

6.2.3. Eye Health Care Services in Croatia in 2009

There are 4.5 million inhabitants in Croatia. There are 400 eye doctors in Croatia. There are 7 university departments and 14 eye departments all over the country. 275 eye doctors work in the state hospitals and outpatient clinics: 70 (25%) out of 275 perform some kind of surgery, 205 (75%) work outpatient clinics.

There are 2 ophthalmological societies:

(Croatian Ophthalmological Society (mostly governmental sector)

(Croatian Society for Cataract and Refractive Surgery (mostly private sector)

Patients are not required to pay for surgery in Croatia in state hospitals; they pay only a small amount of participation.

Type of surgery and the amount Health Insurance Company are as follows:

Cataract surgery	€ 650
Vitrectomy	€ 3000
Glaucoma	€ 350
Squin	€ 350
Corneal transplantation	€ 1000
Outpatient examination	€ 15

In the private sector, the fees are higher, except for vitrectomy.

Regarding cataract surgery 3,450 operations were performed per million inhabitants (state hospitals), together with private clinics, the amount includes 3,955 per million, 90% surgeries is PHACO, 10% surgeries is ECCE.

Generally it is possible to say that Croatian ophthalmology is improving and the quality of services and technology was increased, but there are some negative points as well.

Areas of improvement

Croatia needs more vitreoretinal surgeons.

It is necessary to improve the treatment and screening in glaucoma, DM, pediatric ophthalmology and AMD.

There is a lack of cornea donors in the country and state hospitals are very limited by available funding.

Junior eye doctors need to be educated in courses, seminars and international programmes.

6.2.4. Eye Health Care Services in Georgia in 2009

There are 4.4 million habitants in Georgia

Total number of ophthalmic beds: not available
Total number of ophthalmologists in the country: 300

Performing cataract surgeries	25
Performing vitro-retinal surgeries	4
Performing retinal laser photocoagulation	7
Specialized in diagnostics and treatment of retinopathy of prematurity	0
Specialized in pediatric ophthalmology	12

Cataract Surgery

Extra capsular extraction with intraocular lens	3,970
Extra capsular extraction without intraocular lens	55
Phacoemulsification with intraocular lens	5,530
Phacoemulsification without intraocular lens	27
Other with intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	79
Other without intraocular lens (e.g.pars plana lensectomy, intracapsular extraction)	12
Keratoplasty	54

Vitreoretinal Surgery

Extraocular surgery for retinal detachment	69
Pars plana vitrectomy for retinal detachment	104
Pars plana vitrectomy for complications of diabetes mellitus	147
Surgery for intraocular trauma	54
Vitrectomy for endophthalmitis	5
Others	

Ophthalmic Equipment

Indirect ophthalmoscope	
Phacoemulsification equipment	
Pars plana vitrectomy equipment	
Laser for retinal diseases	
YAG laser	
Funduscamera	

Cataract

Cataract patients pay from USD 470 USD to USD 560 for surgery.
They can choose the type of IOL; its price is from USD 35 to USD 160.
The average waiting list for a cataract operation is only a few days.
There are enough cataract surgeons in the country.

Areas for improvement

It is needed to improve the equipment and the training of surgeons.

Diabetic Retinopathy (DR)

There is no comprehensive national plan for the screening and treatment of patients with diabetes at the Ministry of Health.

Areas for improvement

A national screening plan is urgently needed.
It is necessary to improve equipment as well as the training program for laser surgeons.

Glaucoma

There are guidelines for screening.

Age Related Macular Degeneration (ARMD)

Unfortunately nothing is done in this part of ophthalmology.

Areas for improvement

To train young doctors in ARMD is the basic need.

Retinopathy of Prematurity (ROP)

There are only private doctors who deal with ROP patients.

Areas for improvement

It is necessary to develop a screening program in Georgia.

Low Vision Services

Unfortunately nothing is done in this part of ophthalmology.

Provision of Eye Care – General Comments

Georgia should find more training programs and better equipment is also necessary. The funding in ophthalmology is needed as well as the human resources.

Areas for improvement

Active cooperation must occur improve between the Ministry of Health and the Georgian Association of Ophthalmologists for developing a national plan or national program in screening, diagnostics and the appropriate treatment of patients.

Management and Financing of Health Care

There are seventeen private insurances, insurance for poor inhabitants, underprivileged people and self-payer patients.

Patients are ready to pay for treatment, for their staying in hospitals and for prescription of drugs.

Prevalence and causes of blindness

Cataract, diabetic retinopathy, glaucoma and age related macular degeneration are the leading causes and prevalence of blindness and visual impairment in the country.

Education

A medical degree takes 6 years in Georgia. Eye doctors in Georgia have a four year residency program. They must pass the entrance examination. Young eye doctors who are in training in the ophthalmology receive a salary. There are six accredited places to train eye doctors. In Georgia there are no optometrists. Georgian ophthalmologists do not have national journal.

6.2.5. Eye Health Care Services in the Republic of Moldova in 2010

In the Republic of Moldova there are 3.575 million habitants

Total number of ophthalmic beds: 420

Total number of ophthalmologists in the country: 183

Cataract

There are four public eye departments and two private eye clinics in Chisinau and ten districts where cataract surgery is performed.

The total number of cataract surgeons is 61.

In 2010 5,612 cataract surgeries were performed in the country.

Patients who have health care insurance do not pay for cataract surgery and for an IOL.

The average waiting list time for a cataract operation is about 2 months.

Areas for improvement

- To improve the availability and affordability of cataract surgical services.
- Update existing tertiary eye centres and district eye departments with diagnostic and surgical equipment/instruments, drugs and supplies.
- Increase the cataract surgical rate.

Diabetic Retinopathy (DR)

The Ministry of Health of Moldova has a program, MOLDDIAB, which deals with the screening and treatment of diabetic patients. However, the management of DR has not been included.

According to the standard procedure, all hospitalized patients suffering from DM are screened for ocular diabetic complications.

There is no national guideline protocol for the screening and treatment of DR.

Areas for improvement

Update existing tertiary eye centres with diagnostic and surgical equipment OCT, AFG (only 1 in a private clinic) and endolaser.

Provide district eye departments with basic ophthalmic equipment for the improved screening of DR.

Increase availability of retinal laser treatment

Train eye doctors in screening and treatment of DR

Develop of a relevant guiding national protocol

Glaucoma

According to the Ministry of Health of Moldova, patients over 40 years undergo IOP measurements once a year.

Guidelines for establishing glaucoma diagnosis and treatment is under development.

Laser treatment is performed only in Chisinau:

2 - Public Clinics

2 - Private Clinics

Availability of medication: the market in Moldova comprises five groups of hypotensives:

Beta-blockers (timolol, betaxolol-selective)

Carbonic anhydrase inhibitors (dorsolamide)

Parasympathomimetic (pilocarpine)

Prostaglandin analogues (travaprost)

Sympathomimetic (adrenaline)

The most frequently used are beta-blockers. The others are more expensive and less affordable for patients.

Areas for improvement

- Update existing tertiary eye centres with equipment (OCT, laser for glaucoma treatment, Heidelberg tomograph, pachimeter).
- Provide district eye departments with basic diagnostic ophthalmic equipment for glaucoma.
Increase availability of medication (including in medical insured patients).
- Train eye doctors in glaucoma screening and treatment.

Age Related Macular Degeneration (ARMD)

There is only one private eye clinic that has the required equipment for the diagnosis of AMD (OCT, AFG).

Only one medication for prophylaxis and treatment is available on the Moldavian drug market (Ocuvite - Lutein, Vitrum Vision).

Areas for improvement

- It is necessary to develop existing tertiary eye centres with diagnostic equipment and medications (OCT; AFG, medication Lucentis) for patients with ARMD
- Human resource development for diagnosis and treatment of ARMD
- Development of a relevant and clear guiding protocol

Retinopathy of Prematurity (ROP)

Screening for ROP started in 2006 according to the elimination of avoidable childhood blindness project elaborated in 2004 in cooperation with the WHO and due to the financial support of the Lions Club.

One ophthalmologist is consulting prematurely born children in a rehabilitation centre of premature children in Chisinau.

There is only one eye department in the country specialized in treating babies with ROP -

The Ophthalmology Department of Republic Pediatric Hospital 'Em. Cotaga' with one specialist.

The national protocol was elaborated this year.

Areas for improvement

Update the existing eye centre for treatment of ROP with diagnostic equipment (Redcam, indirect ophthalmoscope, VEP test)

Training of eye doctors in screening ROP is needed

Low Vision Services

In April 2009, the first "LOW VISION" opened in Moldavia Centre for the Medical-Social Rehabilitation of Low Vision People due to the support of humanitarian organization "Hjelp Moldova" from Norway, who took the responsibility to support this centre for three years.

The centre assists all children and adults from the republic and the devices include magnifiers, telescopes, spectacle microscopes, non-optical devices, illumination sources, contrast enhancement aids, and electronic video magnifiers - CCTV.

All the services and low vision aids are given for free. The cost of aids is covered by the Norwegian organization.

Areas for improvement

- To provide evidence on the prevalence and causes of visual impairment.
- To increase awareness of the need for low vision services.
- To expand low vision services in all regions of the country.
- To increase evidence for the cost-effectiveness of low-vision care interventions.
- To provide scholarship and grants for educating rehabilitated low vision patients and to encourage the establishment of new programmers.

Management and Financing Health care

Eye care services are supported by the government, NGO and other partners (Lions Club, CBM, Hjelp Moldova from Norway, etc.).

There is a National Medical Insurance Company that covers hospitalizations, surgery and treatment during hospitalization of patients with an insurance policy, pregnant women and those under 18 years of age.

Education

To graduate from the Moldova State University of Medicine and Pharmacy with a Doctor of Medicine (M.D.) degree takes 6 years.

Residency programs in ophthalmology involve 4 years of training.

To practice ophthalmology in Moldova, the residents must successfully pass all three steps of the Licensing Examinations

There is a limit for an number of junior eye doctors to be trained yearly

2009 – 8

2010 – 5

Areas for improvement

Increase awareness of all stakeholders in eye care needs.

Highlight eye care services as being one of the MoH priorities in the context of the VISION 2020 project of work.

Increase awareness of the importance of early detection of glaucoma, diabetic eye disease, and low vision services, with the ultimate goal of achieving appropriate behavioural change.

Establish a step by step process to carry out community level mobilization activities to raise awareness of AMD disease.

Attract more resources into prevention of blindness interventions

Establish a clear and relevant set of guiding policies and strategies for achieving integrated and coordinated eye care services, as well as ensuring equitable distribution of quality eye care services in the country.

6.2.6. Eye Health Care Services in the Russian Federation in 2009

There are 144. 5 million habitants in the Russian Federation.

Total number of ophthalmic beds: 3, 820

Total number of ophthalmologists in the country: 13, 969

Cataract

About 80% of cataract patients do not pay for their surgery.

The average waiting list time is from 2 weeks to 3 months.

The number of cataract surgeons is not sufficient and the distribution of surgeons is not even equable.

There are many more surgeons in the capital and bigger cities, and only few in the countryside. There is difficult access for many people from sparsely populated areas. Cataract is a leading cause of blindness together with ROP in Russia.

Cataract operation costs from € 150 to €1,500.

Areas for improvement

It is necessary to inform inhabitants early regarding cataract surgery and that is a safety procedure to avoid unnecessary complications and to cover all districts with a sufficient number of ophthalmologists.

Diabetic Retinopathy (DR)

Russian eye doctors use the screening guidelines for secondary complications of diabetic retinopathy patients.

Areas for improvement

There is a need for photographic screening with mid level personnel.

For newly diagnosed patients it is necessary to fast their treatment in all regions.

Glaucoma

Glaucoma doctors use guidelines according to the European Glaucoma Society.

Age Related Macular Degeneration (ARMD)

Intravitreal injections of Lucentis are available under the state insurance plan in some regions. OCT is a common method of screening and diagnoses available in most regions of the country.

Retinopathy of Prematurity (ROP)

Areas for improvement

It is necessary and essential to ensure that the national screening obligatory standards to detect all infants at risk of ROP are observed.

Provision of Eye Care – General Comments

Screening facilities are very uneven throughout the Russian regions.

Management and Financing of Health Care

The total population of Russia is covered by health insurance. Almost all ophthalmic procedures are covered by the state insurance plan. In 2009-2010 there was uneven coverage of procedures from region to region, but from 2012-2013 the Federal Government is planning to establish the same price for any medical procedure through all regions.

Education

To complete a medical degree takes six years. Residency programs in ophthalmology involve two years of training. There is not any special permission if eye doctors pass a professional exam every five years in Russia.

The Russian Society of Ophthalmology provides:

- Advanced training in physician qualification
- Development of prospective research
- Perfection of ophthalmic care for population
- Most rapid introduction of new technologies in diagnostics, surgery, treatment

Interaction with Health Care Authority of Russia

Relations with international scientific societies

Areas for improvement

The reform of the ophthalmic service needs:

- New forms of organization
- Development and introduction of new efficient technologies
- Personnel training

7. Meeting of the Study Principle Investigators

7.1. Date and venue

June 25 – 26, 2011

Lions International Educational Centre of Ophthalmology, Prague, Czech Republic (LECOP)

7.2 Participants - Principle investigators and invited participants

Albania

Prof. Pajtim Lutaj, MD
Hospital "MariaTeresa"
Tirana

Bosnia and Herzegovina

Suzana Pavljašević, MD, PhD, as. Prof.
Eye Policlinic
Public Health Centre
Tuzla

Croatia

Ante Barisic, MD
University Department of Ophthalmology
Zagreb

Georgia

Giorgi Chichua, MD
Eye Clinic "MZERA"
Tbilisi

Czech Republic

Ivo Kocur, MD, MA, MSc
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Mr Peter Ackland, CEO International Agency for the Prevention of Blindness

Prof Voller Klauss, MD, Regional Chair for Europe, International Agency for the Prevention of Blindness

Ms Robin Percy, VISION 2020 Workshop Programme Manager, International Agency for the Prevention of Blindness

Serge Resnikoff, MD, PhD, International Council of Ophthalmology

Katarina Jankovic, MD, Fred Hollows Foundation UK

Mr Jaf Shaf, CEO, Fred Hollows Foundation UK

7.3. Minutes of the Meeting

A meeting of Principle Investigators was convened to review the data and information comprised in the countries reports. In addition to the Principle Investigators, special guests and representatives of some international partners participated in the meeting.

Prof. Petja Vassileva from Bulgaria and Prof. Luidmila Marchanka from Belarus sent their apologies as they could not participate due to conflicting commitments.

A summary report on the eye care service information supplied by the representatives from the countries which were included in the data collections was presented. It was recognized that the data collection efforts have been hampered by a growing private sector and decentralisation of eye care service management. While the private eye care establishments may not necessarily disclose statistical information on eye care they provide, in some countries the decentralization of state-operated health care resulted in lacking eye health information in various national registers and/or health information system structures.

After discussion on the summary report, country reports were presented in the following sequence:

- a) Reports of Principle Investigators: the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Romania, Serbia,
- b) Short reports on available data presented by special guests at the meeting: Albania, Bosnia and Herzegovina, Croatia, Georgia, the Republic of Moldova, the Russian Federation.

The presentations were structured to cover the following areas: availability and affordability of eye care, education in eye care, summary of needs assessment.

The information shared by the presenter was complementing their country reports. Presenters provided an essential feedback for verification of some sections of their written reports which required further clarifications.

IAPB, ICO, and Fred Hollows Foundation UK presented on their activities and possible future involvement in prevention of blindness in the sub-region. It was recognized that the funding opportunities have been significantly reduced recently following CBM's termination of their direct support to prevention of blindness projects in eastern Europe. It was also recognized that the future educational programmes of LECOP may not receive sufficient funding and LECOPs future operations are at serious risk.

The presentations were followed by a thorough discussion around the existing opportunities and limitations for further expansion of prevention of blindness activities in eastern Europe.

On Day 2 of the meeting, two working groups were formed to address the following agenda:

Group 1: Needs assessments in the area of management of the leading causes of avoidable blindness in the region

Group 2: Development of human resources for eye health

The key findings of Group 1 were as follows:

Cataract

More educational opportunities for junior eye doctors, including the use of simulators for surgical training and web labs allowing for hands-on skill transfer

Glaucoma

Ensure implementation of internationally accepted clinical guidelines
Ensure inclusion of early detection of glaucoma in eye examinations provided by optometrists and street ophthalmologists
Established national practice guidelines for medical treatment of glaucoma
Ensure availability of adequate diagnostic equipment, such as visual field (VF) examination devices and Optical Coherence Tomography (OCT)

Diabetic Retinopathy (DR)

Explore opportunities for establishing screening programmes transmitting fundus images to the specialized reading centres (Telemedicine)
Education for vitreoretinal surgeons
Equipment for diabetic retinopathy diagnosis-fluorescein angiography and fundus camera
Education for patients, GPs and Family doctors about DR
HbA1C has to be guideline of regulated DM

Retinopathy of Prematurity (ROP)

Establishing national ROP control programmes-following international recognized clinical guidelines and best practice

Ensure availability of equipment - Red cam for diagnostic and for treatment cryo and laser
Provide more education for neonatologist and ophthalmologist for ROP screening and treatment

Age Related Macular Degeneration (ARMD)

Ensure availability of equipment- Optical Coherence Tomography (OCT) and fluorescein angiography
Screening for higher risk groups
Availability for medical treatment-antioxydants and anti VEGF

Refractive Services and Low Vision Services

Screening for school children and risk groups
Equipment for correcting refractive errors and for low vision services
Equipment for education for blind and severely visually impaired children

Other areas of eye care

Strengthening of cornea banks

Integration of eye care in border health agendas

Ophthalmologists and their national societies of ophthalmology need to work closely with MoH

The key findings of Group 2 were as follows:

1. Development of human resources for eye health

Residency:

- Increase availability and affordability of short-term visits of junior ophthalmologists to leading eye care teaching institutions abroad
- Provide improved information on the recommended text books in ophthalmology
- Agree on the recommended procedures and skills for ophthalmologists in training
- Standardise the duration and curricula of the teaching programmes
- Increase availability of wet lab surgical training
- Encourage foreign language learning (English, Russian, Chinese)
- translate textbooks books into Russian

Postgraduate continued education:

- fellowships to relevant subspecialty training centers
- educational courses at LECOP in Prague to continue

- increase provision of EBO grants and access to travel grants for young ophthalmologist
- examination EBO to be available for eastern European countries

2. International collaboration in ophthalmology

- increase invitation of international experts in order to held national courses/lectures (like small EUPO courses)
- increase internet resource, joint web page for the SEE region where each country can put relevant info/resources
- congresses
- to increase meetings and education on regional level (using regional lecturers)
- collaboration in the research field (approach possible donors with the joint proposal covering more countries)

The meeting was concluded by agreeing the following actions:

1. LECOP will compile and finalize a study report based on the presented information and written country reports
2. Further continuation of international collaboration in the sub - region, including the data collection and educational activities conducted by LECOP is highly recommended
3. Funding opportunities for the prevention of blindness agenda in the sub - region needs to be further explored with the international partners in VISION 2020

9. Abbreviations

ALT	argon laser trabeculoplasty
SLT	selective laser trabeculoplasty
Anti - VEGF	anti-vascular endothelial growth factor drugs
ARMD	Age Related Macular Degeneration
CSCRS	Czech Society of Cataract and Refractive Surgery
CCTV	close-circuit television used as low vision video magnifier
CNV	choroidal neovascularization
CT	computer tomography
DM	diabetes mellitus
DR	diabetic retinopathy
EBM	evidence based medicine
EBO	European Board of Ophthalmology
EGS	European Glaucoma Guidelines
ETN	ear throat and nose (or otorhinolaryngology)
EU	European Union
FA	fluorescein angiography
GDP	gross domestic product
GDX	name of the machine: Nerve fibre analyser
GPs	general practitioners
HRT	Heidelberg retina tomograph
IAPB	International Agency for the Prevention of Blindness
ICE	intra-capsular cataract extraction
ICO	International Council of Ophthalmology
IOL	Intraocular lens
IOP	Intraocular pressure
MoH	Ministry of Health
MRI	magnetic resonance imaging
MSD	name of pharmaceutical company
Nd – YAG laser	a laser that uses neodymium-doped yttrium aluminiumgarnet as its medium
NGO	non-governmental organization
NHI	National health information
NHIF	National Health Insurance Fund
OCT	optical coherence tomography
PDT	photodynamic therapy
POAG	primary open angle glaucoma
RetCam	retinal camera
ROP	retinopathy of prematurity
VA	visual acuity
VEP test	visual evoked potential test
WHO	World Health Organization