



## IAPB VISION 2020 WORKSHOP

**Regional ROP workshop, Black Sea Countries:  
Bulgaria, Georgia, Moldova, Romania, Turkey and Ukraine**

**June 13<sup>th</sup> and 14<sup>th</sup> 2014, Budapest, Hungary**

Hosted by Professor Janos Nemeth, Semmelweis University



*Funded by: Eye Samaritans International*



**Black Sea Regional ROP workshop**  
**13<sup>th</sup> – 14<sup>th</sup> June 2014**

**The purpose** of this 1<sup>st</sup> Black Sea Regional ROP workshop was to bring together ophthalmologists, neonatologists and nurses professionals who are involved in ROP, to explore how to strengthen national ROP programmes and to draft national guidelines for ROP prevention, screening and treatment. A group of 23 ophthalmologists, 20 neonatologists, and 10 nurses from 6 countries convened in Department of Ophthalmology, Semmelweis University, Budapest, Hungary. Participants in teams of 3 from each NICU represented the following countries:

	2013 population (M)	Births/1000	% <14 years	IMR
Bulgaria	7	9.2	13.2	7.8
Georgia	4.5	12.9	16.9	14.7
Moldova	3.5	11.1	16.4	13.3
Romania	20	9.9	15.6	9.2
Turkey	75	16.9	24.5	11.6
Ukraine	46	11.4	14.6	8.4

**Objectives:**

- To present and discuss current services and programmes, and policies and practices in relation to ROP
- For each country, to review current practices and identify areas for strengthening
- For neonatologists, neonatal nurses and ophthalmologists to work together to strengthen and improve their ROP programmes
- To highlight the role nurses play in ROP, by reducing the risk of severe ROP, in communicating with parents, and in helping to run efficient ROP programmes
- To start developing ROP regional guidelines for ROP screening and treatment, and for the prevention of ROP which could be used as a template for national guidelines
- To develop a standard data recording form for ophthalmologists to use in ROP programmes, so that the programme can be monitored
- Develop an Action Plan for further progress and support

**Outputs:**

- Data collection forms;
- Draft guidelines for prevention of ROP and for ROP programmes at national level;
- Action plans for improving neonatal care and ROP programmes

**Day 1**

After a welcome by Dr Janos Nemeth, Chair of Department of Ophthalmology, Semmelweis University, and Regional IAPB Chair, participants introduced themselves and Dr Erika Maka, paediatric ophthalmologist at Semmelweis University described the purpose and objectives of the workshop.

Presentation Session 1

Professor Clare Gilbert reported on a recent meta-analysis on ROP as a cause of blindness and visual impairment worldwide. These estimates indicate that there are 32,300 new cases of ROP blindness/visual impairment annually. The highest numbers are in the Asian regions and the lowest in Africa. She highlighted that the incidence of blindness and visual impairment due to ROP in

Eastern and Central Europe is approximately 2.5 higher than in industrialized countries. These data can be useful for advocacy.

Dr Graham Quinn and Dr Erika Maka reported on telemedicine screening for ROP, focussing and on the e-ROP study in the US, and the system based in Budapest in which four trained neonatal nurses take images in units in Budapest and in other cities when required, using the ambulances dedicated to newborn care. This has greatly increased coverage of programmes and reduced the travel and workload of ophthalmologists.

Dr. Shahid Husain outlined risk factors for ROP, highlighting data from the recent series of clinical trials of oxygen therapy for premature infants. Not all the trials have reported, but the published trials and meta-analysis suggest that saturation targets should probably be in the range 90-95%.

Ms Julie Flanagan reviewed the vitally important role nurses play in the care of premature infants, emphasising how they can reduce the risk of ROP as well as assist in the examination and treatment of infants. Nurses also all play an important role in communicating with parents.

#### Poster session:

Each participating centre brought a poster with specific information about the birth weight and gestational age of infants admitted to their units, and the number who survived to discharge and who underwent examination. Data were also presented on the rates and severity of ROP in examined babies and the number treated, by birth weight and gestational age. Authors of the posters presented the data to groups of participants. **(see Appendix 1)**

#### Discussion session 1:

In this session, ophthalmologists, neonatologists and nurses from the 6 countries met in separate groups to discuss their main challenges and possible solutions.

#### **Ophthalmology:**

	<b>Challenges</b>	<b>Possible solutions</b>
<b>Georgia:</b>	<ul style="list-style-type: none"> <li>• No official guidelines for screening and treatment</li> <li>• Few ophthalmologists</li> <li>• No governmental funding, no training for laser</li> <li>• Treatment – Avastin only</li> </ul>	<ul style="list-style-type: none"> <li>• National program</li> <li>• Screening and treatment criteria</li> <li>• Recruiting and training of the specialists in ROP</li> <li>• Better communication between neonatologists – ophthalmologists - society</li> </ul>
<b>Romania</b>	<ul style="list-style-type: none"> <li>• No screening for ROP in level 2 units</li> <li>• Late referral of the infants coming from level 2 units</li> <li>• Anti-VEGF injections are not official</li> <li>• Lack of documentation – only one RetCam in Romania</li> <li>• Few ophthalmologists</li> <li>• Financing – not satisfactory</li> </ul>	<ul style="list-style-type: none"> <li>• Trained ophthalmologists in the level 2 units</li> <li>• Clear criteria for the referral of infants in adequately equipped units</li> <li>• Development of Telemedicine</li> <li>• Development of a better framework within hospitals: neonatologists – ophthalmologists</li> </ul>
<b>Turkey &amp; Moldova</b>	<ul style="list-style-type: none"> <li>• Lack of trained staff</li> <li>• Lack of equipment for ROP screening and treatment: <ul style="list-style-type: none"> <li>◦ Retinal imaging (Retcam)</li> </ul> </li> <li>• Governmental policy to improve perinatal and neonatal care to decrease prevalence of ROP</li> <li>• The ROP screening criteria should be</li> </ul>	<ul style="list-style-type: none"> <li>• In Turkey: ROP training should be a MUST during ophthalmology education. Turkish Ophthalmologic society and Ministry of Health may be warned about this subject.</li> <li>• In Moldova there is no training centre for ROP and the ophthalmologist may be sent to Turkey for ROP education since there are a lot of training centres in Turkey.</li> </ul>

	revised for different parts of Turkey	<ul style="list-style-type: none"> <li>• Donations of RetCams from foundations (eg. IAPB?)</li> <li>• Ophthalmology and Neonatology Societies should alert the ministry of Health.</li> </ul>
<b>Bulgaria &amp; Ukraine</b>	Lack of National ROP Program - Logistics Lack of motivation and stable governmental structure to support efforts	<ul style="list-style-type: none"> <li>- Data collection (National register)</li> <li>- Screening and treatment criteria (form or change national guidelines)</li> <li>- Funding (government support)</li> <li>- Identify qualified personnel</li> </ul>



**Neonatology:**

Challenges	Possible solutions
<ul style="list-style-type: none"> <li>• Lack of national screening guidelines: some countries (Turkey and Georgia are in the process of developing them)</li> <li>• Insufficient ophthalmologists, neonatologists and neonatal nurses</li> <li>• Insufficient equipment</li> <li>• Insufficient incubators</li> <li>• Lack of communication and coordination between neonatal units, and neonatologists and ophthalmologists</li> <li>• Lack of government funding and support</li> <li>• Insufficient training</li> <li>• Large geographical areas: wide variation between centres</li> </ul>	<ul style="list-style-type: none"> <li>• Increase awareness of ROP</li> <li>• National data</li> <li>• Neonatal networks</li> <li>• Written national guidelines for screening and treatment that have been developed locally</li> <li>• Training doctors and nurses</li> <li>• Financial support from government</li> <li>• Cooperation and communication between professionals</li> </ul>

**Nurses:**

<b>Challenges</b>	<b>Possible solutions</b>
<ul style="list-style-type: none"> <li>• Lack of multidisciplinary (mdt) guidelines in relation to oxygen management of premature infants/oxygen saturation limits</li> <li>• Lack of mdt guidelines pertinent to management of infant undergoing ROP screening and treatment</li> <li>• Insufficient specialist trained neonatal nurses</li> <li>• Nurse:infant ratio not conducive to safe and effective nursing practice</li> <li>• Insufficient specialist equipment-monitors/incubators</li> <li>• Nurse education is medically driven</li> <li>• Lack of parent education resources(Turkey presented their parent info version but very basic)</li> <li>• In many areas infants are screened in ophthalmology clinic not on neonatal unit which leads to workload challenges</li> </ul>	<ul style="list-style-type: none"> <li>• Written multidisciplinary (mdt) local guidelines relating to oxygen management/infant management</li> <li>• Recruit more nurses to this speciality through improved government support/funding</li> <li>• Appoint named experienced nurse knowledgeable in ROP to work alongside ophthalmologist/neonatologist to manage ROP programme in each unit</li> <li>• Nursing institutions to run neonatal workshops/courses either via e-learning packages(all nurses attending conference have access to computers)or accessible face to face lectures-run by nurses.</li> <li>• Develop neonatal nurse's association group to provide support, enable networking and sharing good practice (this can be undertaken electronically).</li> <li>• Involve parents throughout neonatal period in the care of their baby and involve them in all decisions relating to their infants care</li> <li>• Promote parent education through parent craft classes and adequate parent info literature on neonatal conditions such as ROP</li> <li>• Infants to be screened on neonatal unit where inpatient.</li> </ul>

Presentation Session 2

Professor Quinn presented an update on the use of anti-VEGF in ROP from an ophthalmology perspective. Only one clinical trial has been undertaken (BEAT-ROP), which had some methodological limitations, and several case series have been reported. There are an increasing number of reports of changes in the retina months after injection, including persistent abnormalities in the retinal vasculature and failure of vascularisation of the retinal periphery. He urged caution in their use. Studies are underway to assess the lowest effective dose.

Dr Husain presented the neonatology perspective, emphasizing that the safety of anti-VEGF preparations in premature infants is not yet known. These agents have the potential to affect developing organs (e.g., lung, kidney and brain) and large scale clinical trials with long term follow up (at least 5 years) will be needed to demonstrate safety.

Dr Fedchuk from the Ukraine talked about her experience of working with Dr Subhadra Jalali at LVPPrasad, Hyderabad, India last year and related how important this experience had been in her care of children in Kiev and throughout Ukraine.

**Day 2**Presentation Session 3

Prof Clare Gilbert talked about the importance of gathering evidence for use in advocacy for policy change, highlighting that the implementation of policies in relation to the control of visual loss from ROP is the only way for health systems to provide ROP programmes on a large scale. She gave examples of the impact of policies in Latin America where ROP has been prioritized for control.

### Group work 2

Ophthalmologists were asked to design a standard recording form and determine how programs might be monitored. Nurses discussed how to improve communication with parents and how they might improve the ROP programs in their institutions and countries, and neonatologists were asked to determine what measures were needed to improve the quality of neonatal care (see below).

These activities were followed by feedback and discussion

1. Many countries have the examination forms already. They will revise their form and modify. Everybody agrees that it is very important to have such a form.
2. Very low number of ophthalmologist dealing with ROP is the main problem in all countries. Ophthalmologists are not motivated for ROP practice by the governmental regulations.
3. Georgia does not have laser for ROP treatment: they are using anti-VEGF only. They need laser!
4. In Turkey they have many training centres but they do not have RetCam to be used for educational purposes.

### Group work 3

In this session country teams worked together and each was given a copy of the UK's national ROP guidelines and those for Latin America. Teams without guidelines were asked to discuss whether the UK guidelines would form a useful template and what they might want to modify, and teams with national guidelines were asked to discuss whether they would adapt their guidelines based on what they saw covered in the UK guidelines.

During feedback, teams said it was useful to have examples of other guidelines and each made specific comments. All teams were asked to say what their screening criteria would be based on their data and/or experience (**see Appendix 2**).

During the discussion Dr Shad Husain and Ms Julie Flanagan designed a template for neonatal data recording – please see **Appendix 7**.

### Group work 4

In the final session of group work teams were asked to identify a few actions points that could be implemented quickly (within one year) and activities they would like to undertake in the medium term (in year 2)(**see Appendix 3**).

The discussion covered topics such as online systems for data entry for ROP programmes and neonatal care, and the benefits of being part of formal or informal networks of neonatal units.

### Summing up

Dr Erika Maka summed up the workshop, highlighting the importance of data for advocacy and monitoring.

Through this workshop potential for collaboration between countries became evident. Some of the larger countries were well placed to provide training and other support to other countries.

Possibilities might also include arranging for short term training and/or observership opportunities and or exchanges between ophthalmologists, neonatologists and neonatal nurses between the UK and Black Sea countries. To facilitate this funding for cross-cover, logistics and regulatory approvals would need to be in place.

## Appendix 1: Neonatal data from NICUs (see attached posters as pdfs)

### List of posters:

#### Turkey:

1. Management of ROP at Eskisehir, Eskisehir Osmangazi University Ophthalmology Department, Turkey – not available unpublished data
2. ROP outcomes for the last three years in Eskisehir – not available unpublished data
3. ROP data from Ankara – pdf attached
4. Neonatal and ophthalmological data of premature infants in Çukurova University Hospital, Adana, Turkey – pdf attached
5. Incidence of type-1 retinopathy of prematurity in premature babies born small for gestational age and appropriate for gestational age, Ankara, Turkey – pdf attached
6. Retinopathy of prematurity: screening & treatment, Izmir, Turkey – pdf attached

#### Georgia:

7. ROP diagnostics and treatment data of recent years in Tbilisi area, Georgia – not available
8. Screening and anti-VEGF therapy for retinopathy of prematurity in Ajara region, Georgia – not available
9. The structure, screening and anti-VEGF therapy for retinopathy of prematurity in Georgia, Kutaisi, Georgia – pdf available

#### Romania:

10. ROP National Screening & Treatment Programme – 2010-2013 comparative results; Institute of Mother and Child Care “Alfred Rusescu” - Neonatal Department, “Gheorghe Polizu’ Bucharest. Not available

#### Moldova:

11. Perinatal care in the republic of Moldova, Chisinau, Moldova – pdf available

#### Ukraine:

12. ROP in the Southern region with a population of 8 million people, Odessa, Ukraine: The Filatov Institute of Eye Diseases – pdf available
13. National Pediatric specialized Hospital ‘OHMATDYT’, Kiev, Ukraine – pdf available
14. Nikolaev region child hospital, Nikolaev, Ukraine – not available

## **Appendix 2. Discussion on national guidelines**

### **Turkey**

- Screening criteria: <32 weeks GA or <1500 g BW, and if greater, condition of baby determines whether exam should be done
- First exam at 31 weeks or 4 weeks whichever is greater
- Oxygen saturation targets: 90-95%

### **Bulgaria**

- Screen every baby <32 weeks gestation and every baby <1500g. Some babies beyond this are screened if identified by neonatology.
- There is no ROP working system. Every 2-3 years, there are political crises that interfere with progress.
- Screen at age 2 weeks and every baby should be examined prior to discharge
- Treatment: laser therapy available, but sometimes not when the 3 individuals with experience are not available. Consider anti-VEGF for some babies if no laser available or very aggressive appearing disease.
- Treatment should be done in the NICU and not in the ophthalmology unit as is currently done. There is an insurance issue that restricts this.

### **Georgia**

- Screening criteria: GA <34 weeks or BW < 2500g
- All NICUs are currently covered by ROP programs
- Examinations are currently done using UK guidelines except for BW/GA criteria
- Low GA babies examined at 31 weeks PMA
- Others at 4 weeks after birth
- Treatment: no laser experience or instrument available. Criteria for treatment are Type 1 ROP and anti-VEGF drug (Avastin) is the treatment used.

### **Moldova**

- Screening criteria: UK guidelines used at present, but currently working with MOH to develop new guidelines
- <32 weeks GA must be screened at discharge and again 2 weeks after discharge
- Potential problem is that some preterm babies are discharged at 34-35 weeks PMA.
- One tertiary NICU in country

### **Romania**

- Screening criteria: GA <34 weeks or BW <2000g
- If discharged before 1 month after birth, baby must be examined before discharge.
- Concern about no screening currently in the Level II NICUs.
- No current written information for parents in the country (though available in Bucharest at present).
- Parents must be informed at discharge whether further exams are needed.

### **Ukraine**

- Screening criteria: BW <2500 g or GA <35 weeks
- All premature babies must be examined at least once.
- National guidelines similar to UK, but a bit higher since larger, more mature babies require treatment.



### Appendix 3. Discussion on Action plans

#### Turkey

##### Short term

- Examine children in schools for the blind to determine the proportion due to ROP
- ROP to be included in training in medical schools and postgraduate training
- ROP commission should determine the centres for program of training
- National guidelines should be reviewed and revised as needed
- Develop database for ROP collection
  - The first screening exam should be entered into the database
- Ask MOH for help in transferring infants
- Turkey can provide ROP training for other countries. Contact information:

##### Long term

- Consider developing telemedicine for eastern parts of Turkey
- Newborn nurse training
- High risk pregnancy

#### Bulgaria

##### Short term

- Prepare presentations for national organizations of neonatology, ophthalmology and nursing to share information about this workshop
- Short training programs for neonatology
- Establish a national database using ROP form for ROP data and neonatology data

##### Long term

- Train one ophthalmologist for each NICU
- Train 2 ophthalmologists in each university for ROP treatment
- Develop telemedicine program for ROP detection in other NICUs
- Establish national ROP network

#### Georgia

##### Short term

- Training for examination and treatment for ROP
- Consider help from other Black Sea countries
- Equipment
  - Indirect ophthalmoscopes (2-3) and associated equipment for exams
  - Laser for treatment
- Information for protocols and brochures for examination and treatment

##### Long term

- Consider telemedicine as a way of extending ROP expertise
- Develop a national database
- Share personal experience with anti-VEGF, in particular for AP-ROP

##### Neonatal care

- Blenders and equipment
- Oxygen monitors
- Training of neonatologists regarding ROP

##### Nurses

- Information for parents for discharge and follow up

#### Ukraine

##### Short term

- Letter about the meeting to disseminate information to all centers that provide care to premature babies
- Training of ophthalmologists in ROP detection and treatment

- Equipment including indirect ophthalmoscopes, oxygen therapy systems
- Neonatal nurse training should be undertaken throughout the country

#### Long term

- Develop regional centres for training for detection and treatment
- Organization of a conference about ROP with wide participation of all stakeholders to determine baseline data on examined, treated
- Establish oxygen target levels that should be used in NICU for babies
- Use developmental care programs for ROP examinations and treatment
- Develop a mobile unit for underserved areas

### **Romania**

#### Short term

- Ophthalmology
  - Improvement of infant referral from level II units
  - Eye exam must be mandatory before discharge
  - Information for parents
- Neonatology
  - Improve
  - Neonatal resuscitation
- Common meetings between ophthalmology and neonatology
- Improve nurse training and decrease ratios

#### Long term

- More than one ophthalmologist per centre
- If there is no ophthalmologist, develop telemedicine program
- Neonatal resuscitation for
- Creation of neonatal network for premature babies
- Implementation of a parent school system
- Increase the number of hours dedicated to nurse training in neonatology

### **Moldova**

#### Short term

- Improve ophthalmologist, neonatologist, and nurse training
- Brochure on ROP
- Develop national guidelines
- Need neonatal and ophthalmological equipment
- Create an association of parents of premature babies
- Nurses
  - Brochures
  - Training

#### Long term

- Ophthalmologist experience in detection and treatment
- National telemedicine network
- Database for eye and neonatal data
- Increase length of neonatal follow up from age 2 years to age 5 years
- Specialized nurses for ROP program

#### Appendix 4: Programme: Day 1

9:00	Welcome and introductions	Prof. Janos Nemeth
9:20	Purpose and objectives of the workshop	Dr. Erika Maka
9:30	Update on ROP as a cause of blindness and the population at risk	Prof. Clare Gilbert
10:00	Telemedicine in ROP	Prof. Graham E. Quinn
10:15	Telemedicine in Hungary	Dr. Erika Maka
10:30	Risk factors for ROP and update on clinical trials of oxygen for reducing the risk of severe ROP	Dr. Shahid Husain
11:00	<b>Break</b>	
11:30	Role of nurses as essential part of the neonatal team	Julie Flanagan
11.50	Impact of nurse training in Brazil: methods, results and e-learning course	Prof. Clare Gilbert
12:10	Review of posters	Participants
13.00	<b>Lunch</b>	
14:00	Review of posters continued	Participants
15.00	<b>Group Work 1</b> Ophthalmologists, neonatologists and nurses in separate groups. <i>Discussion topic: What are the main challenges and what are possible solutions?</i>	Participants
15.30	<b>Break</b>	
16.00	Report back and discussion	Participants
17:00	Update on anti-VEGF preparations: potential ocular and systemic complications	Prof. Clare Gilbert Dr. Shahid Husain
17:30	Learning from India	Dr. Kateryna Fedchuk
18:00	Close	

## Programme Day 2

8:30	The importance of advocacy and policy in the control of ROP	Prof. Clare Gilbert
	<b>Group Work 2:</b> Country teams	
9:00	<i>Discussion topic: Review existing guidelines (UK and Latin America) and discuss how might these could be amended as guidelines for the Black Sea Region</i>	Participants
10:30	Feedback and discussion	Participants
11:00	<b>Break</b>	
	<b>Group Work 3:</b> Ophthalmologists, neonatologists and nurses in separate groups	
	<u>Ophthalmologists:</u> <i>Design a standard data recording form and discuss how programs might be monitored</i>	
11:30	<u>Neonatologists:</u> <i>Discuss what can be done to improve the quality of neonatal care e.g. written protocols/guidelines; team building; seminars etc</i>	Participants
	<u>Nurses:</u> <i>Discuss how to improve communication with parents and how they might improve the efficiency of ROP programs</i>	
13:00	Lunch	
14:00	Feedback and discussion	Participants
	<b>Group Work 4:</b> Country teams	
15:00	<i>Discussion topic: Priority actions for the next 1-2 years</i>	Participants
16:00	Feedback and discussion	Participants
16:30	Next steps	Participants
17:00	Concluding remarks	Dr Erika Maka

## Appendix 5: Important information for participants to prepare posters:

The posters should provide the following information:

### For each country:

Total Live births and total admissions into NICU by Gestational age and Birth Weight

### For each NICU:

#### Neonatal data

- Number of neonatal units in region
- Proportion of neonatal units with an ROP program
- Proportion of neonatal units with blood saturation target guidelines
- Number of babies admitted to the unit, and their survival by birth weight group (<1000g, 1001-1499g, 1500-1999g, 2000-2499g, ≥ 2500g) and gestational age (<28 weeks; 28-31 weeks; 32-36 weeks, ≥37 weeks)
- Number of beds in NICU, incubators, pulse oximeters
- Number of cot days and ventilator days (to get an idea of neonatal activity)
- Nurse to Infant Ratio
- Doctor to Infant Ratio

#### Ophthalmology data

- Screening criteria
- Method of examination to detect ROP
- % of at risk babies examined and % of those who are treated
- Birth weight and gestational age of babies treated
- Indications for treatment
- Treatment used (laser, cryo, anti-VEGF, other)
- Outcome of treatment
- Rates of follow-up after discharge, and who does the follow-up
- Links to low vision services

#### Also emphasize:

- Cooperation between neonatologists and ophthalmologists and nurses
- Governmental framework and organizational/management aspects
- Challenges and constraints
- What should happen next in the NICU/region?

**See Appendix for recommended layout of the data**

**APPENDIX: Suggested tables and graph for data for posters**

	<b>Admissions (N)</b>	<b>Survivors to hospital discharge (N)</b>	<b>Survival rate to hospital discharge (%)</b>
<1000g			
1001-1499g			
1500-1999g			
2000-2499g			
2500g+			
<b>Total:</b>			

	<b>Admissions (N)</b>	<b>Survivors to hospital discharge (N)</b>	<b>Survival rate to hospital discharge (%)</b>
<28 weeks			
28-31 weeks			
32-36 weeks			
$\geq 37$			
<b>Total:</b>			

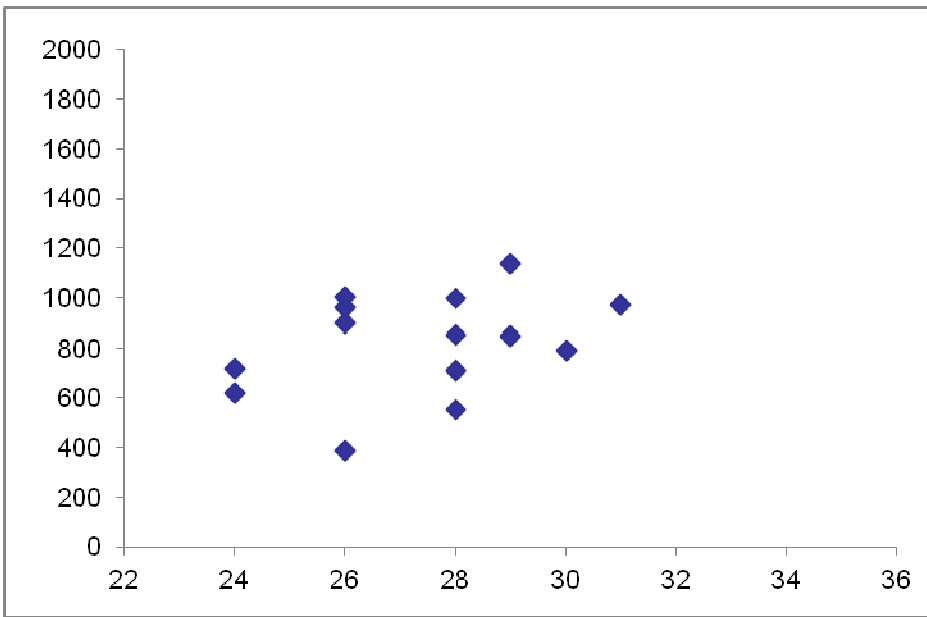
**Infants screened for ROP**

	No ROP		ROP that did not require treatment		Treated for ROP		Stage 4 or 5 ROP		Total
	No	%	No	%	No	%	No	%	
<1000g									
1001-1499g									
1500-1999g									
2000-2499g									

**Information on infants treated for ROP**

<b>Inborn infants( screened from the maternity unit attached to the eye unit)</b>		
Birthweight	Mean and range	
Gestation age	Mean and range	
	N	%
>1500gs AND >32 weeks		
<b>Infants referred for ROP (referred from outside NICUs for ROP screening)</b>		
Birthweight	Mean and range	
Gestation age	Mean and range	
	N	%
>1500gs AND >32 weeks		

**A graph of treated infants, as below, would be ideal**  
Birth weight



*Gestational weeks*

## Appendix 6: Participant list

Ukraine	Name	e-mail
Kiev	Dr. Kateryna Fedchuk	f_katyshka@yahoo.com
	Dr. Bakaieva Olena	elenabakaieva@gmail.com
	Teleganenko Olga	mushe4ka0109@gmail.com
Odessa	Dr. Sergii Katsan	s.katsan@mail.ru
	Dr. Andrey Kuriluk	akmrivne@gmail.com
Nikolaev	Dr. Olga Nastoiascha	nastoiascha82@mail.ru
	Dr. Natalya Martyanova	natali.martyanova@gmail.com
<b>Bulgaria</b>		
Varna	Dr Svetla Nikolova	svetynik@dir.bg
	Dr Diana Yordanova	djordanova@abv.bg
	Ivalina Marinova	lkjuio@abv.bg
Plovdiv	Dr Rayna Stoyanova	rayna_stoyanova59@abv.bg
	Dr Vasil Marinov	vas_marinoff@yahoo.com
Sofia	Dr Nevyana Veleva	nevyana.veleva@abv.bg
	Prof.Dr. Ralitsa Georgieva	raligeorgi@yahoo.com
	Stefka Velkova	stefyvelkova@abv.bg
<b>Georgia</b>		
Tbilisi	Dr. Irakli Abuladze	irakliabuladze@yahoo.com
	Dr. Natia Kintsurashvili	nattia_k@yahoo.com
	Nino Maglakelidze	n_nino99@yahoo.com
Kutaisi	Dr. Lana Datuashvili	datuashvili.lana@yahoo.com
	Dr. Tamara Michitashvili	tata14ta@yahoo.com
Batumi	Dr. Nino Akhobadze	Renima@mail.ru
	Dr. Nato Gorgadze	nato_gor@yahoo.com
<b>Moldova</b>		
Chisinau	Dr. Corina Magdei	corinamagdei@gmail.com
	Dr. Verejan Victoria	verejan_victoria@yahoo.com
	Dr. Pinzari Liudmila	liudmilapinzari@rambler.ru
	Dr. Enachi Alla	alla_jitarciuc@mail.ru
	Moruz Olga	moruz.olga@gmail.com
	Cantir Svetlana	evghenicantir@gmail.com
<b>Romania</b>		
Bucharest	Dr. Cristina Nitulescu	crisnit2003@yahoo.com
	Dr. Carmen Voicila	dr.voicila@gmail.com
	Carmen Tomescu	remus_tomescu@yahoo.com
Cluj-Napoca	Dr. Simona Nicoara	simonanicoara1@gmail.com
	Dr. Melinda Matyas	melimatyas@yahoo.com
	Teodora Lung	teodora_lung@yahoo.com
Timisoara	Tunescu Mihaela Narcisa	florinastoica@gmail.com
	Dr. Florina Stoica	
	Tunescu Mihaela Narcisa	
	Diana Caragena	caragenadiana@yahoo.com
<b>Turkey</b>		
Eskisehir	Dr Hikmet Basmak	hbasmak@gmail.com
	Dr Neslihan Tekin	tekinneslihan@yahoo.com
	Suzan Celiloğlu	
Ankara	Dr Şengül Özdek	sozdek@gazi.edu.tr
	Dr Esin Koç	esinkoc@gazi.edu.tr
	Dr İmren Akkoyun	retina95akk@yahoo.de
Adana	Dr Nihal Demircan	nihaldemircan@gmail.com
	Dr. Hacer Yapıcıoğlu	
	Yıldızdaş	hyapicioglu@cu.edu.tr
Ankara	Dr. Bora Baysal	borabysl@hotmail.com
	Dr. Emre Hekimoglu	emrehekimoglu@yahoo.com
	Dr. Caner Kara	canerkara@hotmail.com



## Appendix 7: Template for collecting neonatal data

### Neonatal database

Collecting and collating accurate data on patient demographics and clinical course in every hospital is vital in understanding how services are currently provided. When collected over a period of time, these data allow development of services in an orderly fashion that will fulfil the clinical needs of the local population. In addition, the data aid in the development of services such as ROP screening and treatment which require working and cooperation beyond the boundaries of any single institution.

We suggest that the following items are routinely collected and recorded electronically for each baby admitted to a Neonatal Unit. The list is not exhaustive and can be adjusted to suit local/regional requirements.

### Mother

Full name  
Date of birth  
Hospital and/or national health ID number  
Maternal antenatal steroids (Yes/No)

### Baby

Hospital and/or national health ID number  
Birth place  
Date and time of birth  
Date and time of admission  
Gestation at birth  
Birth weight  
Gender  
Singleton/multiple  
Apgar score at 1, 5 and 10 minutes  
Surfactant administration (Type, dose, date/time given)  
Days of ventilatory support:  
    Endotracheal ventilation  
    CPAP  
    Vapotherm/nasal cannula  
Total days of oxygen therapy  
ROP screen (Yes/No)  
Date of first ROP screen  
Date of last ROP screen  
ROP screening outcome  
Discharge date  
Discharge status:  
    Alive/dead  
If alive, discharged to:  
    Home  
    Another unit