A Study Protocol on the Situational Analysis on the Current Practice of Screening and Treatment of Retinopathy of Prematurity (ROP)

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ABSTRACT

Objective: The study protocolaims to provide an overview of the current practice of screening and treatment of ROP in the selected, to estimate the proportion of childhood blindness due to ROP and assess the number of premature babies at risk for ROP.

Methods: The study protocol is a descriptive, cross sectional study design using survey questionnaire to be sent out to pediatric ophthalmologists, vitreo-retina specialists and division heads of the neonatal intensive care units of different hospitals in a selected area. Student records and medical abstracts from local schools for the blind will be obtained and will be reviewed. All qualitative data will be reported by frequency distribution and percentages. Extrapolation on the proportion of ROP in the area will be done.

Conclusion: Results from the study can show an overview of the current situation of ROP in a selected area and provide the framework for recommendations for programs aimed providing criteria for timely screening and treatment of ROP to prevent complications such as childhood visual impairment and blindness in the country.

Keywords: ROP, retinopathy of prematurity, retrolental fibroplasia, ischemic retinopathy, childhood blindness

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INTRODUCTION

According to the World Health Organization (WHO), childhood blindness refers to a group of conditions occurring in childhood, which could result in blindness or severe visual impairment, and are likely to be untreatable later in life. Severe visual loss in childhood can affect productivity, education, and employment opportunities, thereby reducing the quality of life for visually impaired children.

The major causes of blindness in children vary according to socio-economic development. Various diseases such as measles, vitamin A deficiency, ophthalmianeonatorum and malaria, high risk factors such as malnutrition, and lack of health care facilities with appropriate personnel and equipment for treating eye diseases plague the system for treating eye diseases in developing countries.[1] Despite these, even in these countries, ROP is emerging as an important cause of childhood blindness. [2]

Retinopathy of Prematurity (ROP), previously known as retrolental fibroplasia, is an ischemic retinopathy affecting premature and low birth weight infants, which may cause some degree of visual loss, ranging from mild to severe. There is altered development of the retinal vascularization leading to abnormal new vessels that may lead to dire consequences like vitreous hemorrhage and retinal detachment. ROP can also lead to complications such as refractive errors, amblyopia, strabismus, glaucoma, blindness and phthisis. Some of the risk factors for the disease are degree of prematurity, low birth weight, poor weight gain, sepsis and exposure to fluctuating supplemental oxygen. [3]

Historically, two epidemics of retinopathy of prematurity have been described in industrialized countries. The first epidemic occurred in the 1940's to 1950's which affected babies in the USA and Western Europe. The principal risk factor for this epidemic was the unmonitored indiscriminate use of supplemental oxygen, affecting babies with mean birth weight of 1370g in both the United Kingdom (UK) and the United States (US). The second epidemic was seen in industrialized countries in the 1970's due to the higher survival rates in extremely premature babies. A "third epidemic" has been described in developing countries as survival rates of premature and low birth weight infants are improving. [2] If appropriate screening and treatment guidelines are implemented, however, ROP as a cause of blindness can be a potentially avoided. [3] Prompt and timely intervention is necessary to optimize the long-term outcome of the child's vision.

In this study protocol, the current situation in a selected area as regards ROP management will be evaluated by providing an overview of policies followed by vitreo-retina specialists and pediatric ophthalmologists in Metro Manila. Likewise, an estimate of the proportion of childhood blindness or visual impairment that is caused by ROP will be obtained by information gathered from local schools for the blind. In addition, Neonatal Intensive Care Units (NICUs) in a selected area will be surveyed to provide an estimate of the number of premature babies at risk for ROP.

METHODOLOGY

The study protocol is a descriptive, cross sectional study using survey questionnaire. The primary objectives of the study are to provide an overview of the current practice of screening and treatment of ROP in a selected area, to estimate the proportion of childhood blindness due to ROP in the area and assess the number of premature babies at risk for ROP. All qualitative data will be reported by frequency distribution and percentages and extrapolation will be done.

Pediatric Ophthalmologists and Vitreo-Retina specialists

A list of the practicing pediatric ophthalmologists and vitreo-retina specialists practicing in the selected area will be retrieved from the local ophthalmological society. Questionnaires will be sent out to all pediatric ophthalmologists and vitreo-retina specialists in the area. The prepared forms include questions on the estimated number of ROP cases seen, diagnosed and treated by consultants, screening and treatment criteria used, the kind of treatment modality used for ROP cases in need of treatment and referral to other subspecialist after treatment. Information about the timing of screening and techniques of examination will also be gathered. Respondents will be contacted via phone or email regarding additional information or clarifications. (Appendices 1 and 2)

Estimate the proportion of ROP

A database search of local blind school/s in

the area will be done to estimate the proportion of childhood blindness or visual impairment identified as due to ROP. Student records and clinical abstracts, when available, will be reviewed from the different schools for the blind in the area. Clinical diagnoses were tallied and the percentage of ROP will be taken. For diagnosed ROP cases, data on the age of gestation, birth weight, course in the NICU and previous treatment will be noted.

Neonatal Intensive Care Units

Hospitals with NICU facilities in the area are listed. A survey on the Neonatal Intensive Care Units (NICU) will done using questionnaire forms to be sent to the Division Heads of these hospitals. The forms include questions on the estimated number of premature babies admitted to the NICU by birth weight and gestational age, survival rates of premature infants, presence of necessary equipment and personnel in the NICU, ROP screening policies in their institution and criteria used for referral of infants with high risk for ROP. For additional information and clarifications, respondents will be contacted by the researchers through telephone or email. (Appendix 3)

International studies on ROP screening and treatment in other countries and international societies will be reviewed for comparison with the ROP guidelines set by the local subspecialty societies. Local national programs regarding ROP, if present, will also be reviewed.

All qualitative data will be presented in frequency distribution and percentages and will be presented in tabular form.

DISCUSSION

ROP is considered as an important and emerging cause of childhood blindness. This study aimed to show the current practices of specialists in ROP screening and treatment, the estimated proportion of childhood blindness caused by ROP and the number of premature babies at risk. This proposal aims to establish the proportion of ROP in a selected area and the show the magnitude of the disease in the area though extrapolation. By assessing the NICU prematurity incidence and survival rates, the number of babies at risk for the development of ROP can be determined. The study protocol aims to show the importance of timely screening and treatment of ROP cases to prevent complications of ROP such as visual impairment and blindness. An advantage of using the survey questionnaire in this study design is the practical way of colleting large information from a large number of specialists in a short period of time and in a cost effective way. However, survey questionnaires are limiteddue tolow response rates, responses based on recollection or estimates and are based on their interpretation of the question. The responses will be limited to the amount of information being asked without further explanation.

CONCLUSION

Results from study designs like this can provide the framework for recommendations for programs aimed providing criteria for timely screening and treatment of ROP to prevent complications such as childhood visual impairment and blindness in the country.

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APPENDIX I

TOOL FOR ASSESSMENT OF RETINOPATHY OF PREMATURITY (ROP) SCREENING AND TREATMENT PROGRAMS

Situation analysis survey for Pediatric Ophthalmologists

FOREWORD

Retinopathy of prematurity (ROP) is an ocular disorder involving abnormal vascular proliferation in the retina of premature infants which can progress

to visual impairment or blindness. Severe visual loss in childhood can affect productivity, education and employment opportunities, thereby reducing the quality of life for visually impaired children. According to WHO, childhood blindness refers to a group of conditions occurring in childhood, which could result in blindness or severe visual impairment that are likely to be untreatable later in life. The major causes of blindness in children vary according to socioeconomic development and accessibility of primary health care. In middle-income countries, retinopathy of prematurity is emerging as an important cause of childhood blindness. The aims of this tool are:

- To provide an estimate of the prevalence of childhood blindness or visual impairment that is caused by Retinopathy of Prematurity (ROP)
- To provide an overview of existing national ROP guidelines, policies and recommendations and their utilization
- To assess the current capacity of NICUs with ROP screening programs and treatment facilities

The purpose of the study is to evaluate the current situation of the country in regards to ROP management. Information collected will be intended for planning a national ROP screening and treatment programs.

Name: _____

How many years have you been practicing Pediatric Ophthalmology? _____

Which hospital or clinic do you practice at? Please give name and location.

Private:_____
_____
Public:_____
_____

1. Do you see Retinopathy of Prematurity (ROP) cases in your clinic? ☐ Yes ☐ No

2. How many patients are referred to you for screening for possible Retinopathy of Prematurity per week?

	Name of Clinic/Hospital	# of pts
Private patients		
Charity patients		

3. How many new ROP cases are diagnosed per week?

	Name of Clinic/Hospital	# of pts
Private patients		
Charity patients		

4. How many among the diagnosed ROP cases are treated per week?

	Name of Clinic/Hospital	# of pts
Private patients		
Charity patients		

5. How many new and old ROP cases do you see/follow up per week?

	Name of Clinic/Hospital	# of pts
Private patients		
Charity patients		

5. These cases are usually referred to you by (specialty): Please check all that apply.
   - ☐ Retina specialist
   - ☐ Pediatric intensivist
   - ☐ Neonatologist
   - ☐ General pediatrician
   - ☐ Others _____

A. Spontaneously Resolved ROP Patients (patients whose retina eventually achieved complete vascularization without the need for any therapy):

1. What are the usual findings among your patients with resolved ROP?
   - ☐ regression of vessels
   - ☐ vascularization of entire retina
   - ☐ attached retina
   - ☐ others (please specify) _____

2. What is your usual management in patients with resolved ROP?
   - ☐ observation
   - ☐ refraction
   - ☐ glasses prescription
   - ☐ others _____

3. How often do you see/follow up these patients?
   - ☐ weekly
   - ☐ 1-2 weeks
   - ☐ 2-4 weeks

☐ monthly
☐ 1-2 months
☐ 3 months
☐ others

B. Treated ROP patients (s/p cryo/Anti-VEGF/ Laser IO or post surgical patients)

1. What are the usual findings among your patients with resolved ROP?
   ☐ regression of vessels
   ☐ vascularization of entire retina
   ☐ attached retina
   ☐ others _____

2. What is your usual management in patients with resolved ROP?
   ☐ observation
   ☐ refraction
   ☐ glasses prescription
   ☐ others _____

3. How often do you see/follow up these patients?
   ☐ weekly
   ☐ 1-2 weeks
   ☐ 2-4 weeks
   ☐ monthly
   ☐ 1-2 months
   ☐ 3 months
   ☐ others

C. Do you do ROP screening?

☐ Yes
☐ No

If yes, please proceed. If no, then you have completed the questionnaire. Thank you.

SCREENING ROP

1. Regarding the criteria for identifying babies at risk of ROP, which do you follow?

   Age:
   ☐ ≤28 weeks AOG
   ☐ ≤30 weeks AOG
   ☐ ≤ 32 weeks AOG
   ☐ Others (please specify) _____

   OR

   Birth weight
   ☐ ≤ 1250 grams
   ☐ ≤ 1500 grams
   ☐ ≤ 1800 grams
   ☐ Others (please specify) _____

   OR

   Other criteria
   ☐ older babies / larger babies with prolonged oxygen therapy (use of oxygen hood, nasal cannula, nasal prongs, oxygen dependency at 28 days of age or oxygen dependency at 36 weeks corrected gestational age)
   ☐ stormy course in the NICU (intubation, sepsis, pneumonia, blood transfusion,etc)
   ☐ poor weight gain (failure to gain weight within a few days from birth; weight gain less than a quarter of an ounce each day for every pound baby weighs or about equal to 15 grams per kilogram per day)
   ☐ parent's request
   ☐ Others(please specify) _____

2. At what age do you usually perform screening for those at risk for ROP?
   ☐ 31-33 weeks Post conceptual age
   ☐ 4-6 weeks after birth
   ☐ whichever is later
   ☐ whichever is earlier
   ☐ immediately after referral
   ☐ Others _____

3. Regarding clinical examination of these patients,

   a. What is your usual topical cycloplegic drugs used? (pls specify dose)
      ☐ Tropicamide 0.5% combined with Phenylephrine 0.5% (SanMyd) eyedrops, 1 drop q15 mins x 3 doses prior to examination
      ☐ Tropicamide 0.5% eyedrops, then Phenylephrine 0.5% (separate) 1 drop q15mins x 3 doses prior to examination
      ☐ Others (pls specify drug and dose) _____
      _____

   b. What is the topical anesthetic you use?
      ☐ Topical proparacaine 0.5% immediately before examination
      ☐ Others _____

   c. Do you do scleral depression during indirect ophthalmoscopy?
      ☐ Yes
      ☐ No

   d. How do you record the clinical findings?
      ☐ drawing
      ☐ photo (pls specify machine used_____
      ☐ ROP form
      ☐ others _____

4. What is the usual interval of examinations/follow up period for the following patients:

	weekly	2-3 weeks	monthly	2-3 months	Others
Stage 1					
Stage 2					
Stage 3					
Threshold dse					
Stage 4a					
Stage 4b					
Stage 5/End Stage					

TREATMENT

1. Do you treat Retinopathy of Prematurity (ROP) cases?
   ☐ Yes
   ☐ No

2. If yes, how many new and old ROP cases are treated in a week?

Treatment	# Private patients	# Charity patients
Laser Indirect Ophthalmoscopy		
Anti-VEGF injection		
Cryotherapy		
Surgery		
Others (pls specify)		

3. Do you refer to other specialist for treatment of ROP?
   - ☐ Yes
   - ☐ No

4. When do you refer patients to other specialists for ROP treatment?
   - ☐ Surgical intervention needed
   - ☐ Laser IO intervention needed
   - ☐ Anti-VEGF injection needed
   - ☐ cryotherapy intervention needed
   - ☐ others (please specify) _____

5. What criteria for treatment do you follow?
   - ☐ CRYO-ROP Threshold: Zone 1-2, Stage 3, 5 contiguous or 8 cumulative clock hours with plus disease
   - ☐ ETROP Type 1 – Zone 1, any stage with plus OR Zone 1, stage 3 without plus OR Zone 1-2, Stage 3 with plus
   - ☐ others _____

6. What is your usual treatment for: please check treatment per stage

	Observe	Cryotx	Laser IO	Anti VEGF Please specify drug	Surgery Please specify procedure	Others Please specify
Stage 1						
Stage 2						
Stage 3						
Threshold disease						
Stage 4a						
Stage 4b						
Stage 5						

7. What clinical findings do you look for in clinical examination to say that treatment is completed and satisfactory? (please check all that applies)
   - ☐ regression of vessels
   - ☐ decreased tortuosity of new vessels
   - ☐ more quiet ridge
   - ☐ vascularization of entire retina
   - ☐ attached retina
   - ☐ others (please specify) _____

8. What is the interval of follow up after treatment?

	weekly	2-3 weeks	monthly	2-3 months	Others
Stage 1					
Stage 2					
Stage 3					
Threshold dse					
Stage 4a					
Stage 4b					
Stage 5					

Thank you for your time.

APPENDIX II

TOOL FOR ASSESSMENT OF RETINOPATHY OF PREMATURITY (ROP) SCREENING AND TREATMENT PROGRAMS

Situation analysis survey for Retina Specialists

FOREWORD

Retinopathy of prematurity (ROP) is an ocular disorder involving abnormal vascular proliferation in the retina of premature infants which can progress to visual impairment or blindness. Severe visual loss in childhood can affect productivity, education and employment opportunities, thereby reducing the quality of life for visually impaired children. According to WHO, childhood blindness refers to a group of conditions occurring in childhood, which could result in blindness or severe visual impairment that are likely to be untreatable later in life. The major causes of blindness in children vary according to socioeconomic development and accessibility of primary health care. In middle-income countries, retinopathy of prematurity is emerging as an important cause of childhood blindness.The aims of this tool are:

- To provide an estimate of the prevalence of childhood blindness or visual impairment that is caused by Retinopathy of Prematurity (ROP)
- To provide an overview of existing national ROP guidelines, policies and recommendations and their utilization
- To assess the current capacity of NICUs with ROP screening programs and treatment facilities

The purpose of the study is to evaluate the current situation of the country in regards to ROP management. Information collected will be intended for planning a national ROP screening and treatment programs.

Name: _____

How many years have you been practicing as Vitreo-Retina Specialist? _____

Which hospital or clinic do you practice at? Please give name and location.

Private: _____
_____
_____

Public:_____
_____
_____

For numbers 1-4, please give your best estimate. Thank you.

1. How many patients are referred to you for screening for possible Retinopathy of Prematurity (ROP) per week?

	Name of Clinic/Hospital	# of pts
Private patients		
Charity patients		

2. How many new ROP cases are diagnosed per week?

	Name of Clinic/Hospital	# of pts
Private patients		
Charity patients		

3. How many new and old ROP cases do you see/follow up per week?

	Name of Clinic/Hospital	# of pts
Private patients		
Charity patients		

4. How many newly diagnosed ROP cases are treated in a week?

Treatment	# Private patients	# Charity patients
Laser Indirect Ophthalmoscopy		
Anti-VEGF injection		
Cryotherapy		
Surgery		
Others (pls specify)		

5. These cases are usually referred by (specialty): please check all that apply:
   - ☐ Neonatologist
   - ☐ Pediatrician
   - ☐ Pediatric Ophthalmologist
   - ☐ Others _____

6. Regarding the criteria for identifying babies at risk of ROP, which do you follow? (please check all that applies)
   A Age:
   - ☐ ≤ 28 weeks AOG
   - ☐ ≤ 30 weeks AOG
   - ☐ ≤ 32 weeks AOG
   - ☐ Others (please specify) _____

   OR

   B. Birth weight
   - ☐ ≤ 1250 grams
   - ☐ ≤ 1500 grams
   - ☐ ≤ 1800 grams
   - ☐ Others (please specify) _____

   OR

   C. Other criteria
   - ☐ older babies / larger babies with prolonged oxygen therapy (use of oxygen hood, nasal cannula, nasal prongs, oxygen dependency at 28 days of age or oxygen dependency at 36 weeks corrected gestational age)
   - ☐ stormy course in the NICU (intubation, sepsis, pneumonia, blood transfusion, etc)
   - ☐ poor weight gain (failure to gain weight within a few days from birth; weight gain less than a quarter of an ounce each day for every pound baby weighs or about equal to 15 grams per kilogram per day)
   - ☐ parent's request
   - ☐ Others (please specify)_____

   D. Which among the established guidelines do you usually follow for screening and treatment of ROP?
   - ☐ The Early Treatment for Retinopathy of Prematurity Study (ETROP)
   - ☐ Cryotherapy for Retinopathy of Prematurity Study (CRYO-ROP)
   - ☐ Policy statement of VRSP, PSPOS and PPS
   - ☐ Others (please specify) _____

7. At what age do you usually perform screening for those at risk for ROP?
   - ☐ 31-33 weeks Post conceptual age
   - ☐ 4-6 weeks after birth
   - ☐ whichever is later
   - ☐ whichever is earlier
   - ☐ immediately after referral
   - ☐ Others _____

8. Regarding clinical examination of these patients,
   A. What is your usual topical cycloplegic drugs used?
   - ☐ Tropicamide 0.5% combined with Phenylephrine 0.5% (SanMyd) eyedrops, 1drop q15 mins x 3 doses prior to examination
   - ☐ Tropicamide 0.5% eyedrops, then Phenylephrine 0.5% (separate) 1 drop q15mins x 3 doses prior to examination
   - ☐ Others (pls specify drug and dose) _____

B. What is the topical anesthetic you use?
☐ Topical proparacaine 0.5% immediately before examination
☐ Others _____

C. Do you do scleral depression during Indirect Ophthalmoscopy?
☐ Yes
☐ No

D. How do you record the clinical findings? You may check more than 1 item.
☐ drawing with notes
☐ photo please specify machine used:_____
☐ ROP form
☐ Others _____

E. What is the usual interval of examinations for the following patients:

	weekly	2-3 weeks	monthly	2-3 months	Others
Stage 1					
Stage 2					
Stage 3					
Threshold disease					
Stage 4a					
Stage 4b					
Stage 5					
Non ROP/ Immature Retina patients					

9. What criteria for treatment do you follow?
☐ CRYO-ROP Threshold: Zone 1-2, Stage 3, 5 contiguous or 8 cumulative clock hours with plus disease
☐ ETROP Type 1 – Zone 1, any stage with plus OR Zone 1, stage 3 without plus OR Zone 1-2, Stage 3 with plus
☐ others _____

10. What is your usual treatment for: (please check treatment per stage)

	Observe	Cryo-theraphy	Laser IO	Anti VEGF Please specify drug	Surgery Please specify procedure	Others Please specify
Stage 1						
Stage 2						
Stage 3						
Threshold disease						
Stage 4a						
Stage 4b						
Stage 5						

11. What clinical findings do you look for in clinical examination to say that treatment is completed and satisfactory? (please check all that applies)
☐ regression of vessels
☐ decreased tortuosity of new vessels
☐ more quiet ridge
☐ vascularization of entire retina
☐ attached retina
☐ others (please specify) _____

12. What is the interval of follow up after treatment?

	weekly	2-3 weeks	monthly	2-3 months	Others
Stage 1					
Stage 2					
Stage 3					
Threshold disease					
Stage 4a					
Stage 4b					
Stage 5					

13. Referral to other specialist/s after treatment
☐ Pediatric Ophthalmologists
☐ General Ophthalmologists
☐ Others (please specify) _____

Thank you for your time.

APPENDIX III

TOOL FOR ASSESSMENT OF RETINOPATHY OF PREMATURITY (ROP) SCREENING AND TREATMENT PROGRAMS

Situation analysis survey for Neonatal Care

FOREWORD

Retinopathy of prematurity (ROP) is an ocular disorder involving abnormal vascular proliferation in the retina of premature infants which can progress to visual impairment or blindness. Severe visual loss in childhood can affect productivity, education and employment opportunities, thereby reducing the quality of life for visually impaired children. According to WHO, childhood blindness refers to a group of conditions occurring in childhood, which could result in blindness or severe visual impairment that are likely to be untreatable later in life. The major causes of blindness in children vary according to socioeconomic development and accessibility of primary health care. In middle-income countries, retinopathy of prematurity is emerging as an important cause of childhood blindness.The aims of this tool are:

- To provide an estimate of the prevalence of childhood blindness or visual impairment that is caused by Retinopathy of Prematurity (ROP)
- To provide an overview of existing national ROP guidelines, policies and recommendations and their utilization
- To provide an estimate on prematurity, access to intensive neonatal care, and survival rate of premature babies once in the NICU

- To assess the current capacity of NICUs with ROP screening programs and treatment facilities

The purpose of the study is to evaluate the current situation of the country in regards to ROP management. Information collected will be intended for planning a national ROP screening and treatment programs.

Name: _____

How many years have you been practicing as a Neonatologist?

_____

Hospital Name: _____

☐ Private
☐ Public

1. Estimate Number of Total Admissions in the NICU per month? _____

2. Estimate number of premature babies admitted to the NICU per month by:

Birth weight category:	#	%
i. ≤ 1500 grams	_____	_____
ii. ≤ 2500 grams	_____	_____
Gestational Age:	**#**	**%**
i. ≤ 30 weeks	_____	_____
ii. ≤ 37 weeks	_____	_____

3. Estimate number of surviving premature babies admitted in the NICU per month by:

Birth weight category:	#	%
i. ≤ 1500 grams	_____	_____
ii. ≤ 2500 grams	_____	_____
Gestational Age:	**#**	**%**
i. ≤ 30 weeks	_____	_____
ii. ≤ 37 weeks	_____	_____

4. Estimate number premature babies admitted in the NICU per month by:

   i. those with prolonged oxygen therapy _____ (# and %)
   ii. those with stormy course in the NICU (intubated, sepsis, pneumonia, blood transfusion etc) _____ (# and %)
   iii. those with poor weight gain _____ (# and %)

5. Human Resources:

	Number of Human Resources
Availa	
Neonatologists	
Neonatology Fellow	
Pediatician	
Pediatric Resident ICU Nurse	
Staff Nurse	
Auxillary Nurse	
Respiratory Therapist	
General Doctor	

   i. Please provide an estimate number of human resources available in the NICU:
   ii. How many preterm babies are supervised by each nurse?

_____

6. Infrastructure and Equipments:

   i. Are these equiptments available in your NICU?

Cots	☐ Yes	☐ No
Vital Signs Monitors	☐ Yes	☐ No
Ventilators	☐ Yes	☐ No
Oxygen blenders	☐ Yes	☐ No
Humidifier	☐ Yes	☐ No
Flowmeter	☐ Yes	☐ No

7. Does the NICU in your institution have an established referral system for ROP patients to the ophthalmologists?
   ☐ Yes ☐ No

8. To whom do you refer Retinopathy of Prematurity patients: (please check all that apply)
   ☐ General Ophthalmologists
   ☐ Vitreo-Retina specialists
   ☐ Pediatric Ophthalmologists
   ☐ Fellows of the Ophthalmology Department
   ☐ Others _____

9. What criteria do you use for referral of ROP patients?

   Age:
   ☐ ≤ 28 weeks AOG
   ☐ ≤ 30 weeks AOG
   ☐ ≤ 32 weeks AOG
   ☐ Others (please specify) _____

   OR

   Birth weight
   ☐ ≤ 1250 grams
   ☐ ≤1500 grams
   ☐ ≤1800 grams
   ☐ Others (please specify) _____

   OR

   Other criteria
   ☐ older babies / larger babies with prolonged oxygen therapy
   ☐ stormy course in the NICU (intubation, sepsis, pneumonia, blood transfusion etc)
   ☐ poor weight gain
   ☐ parents request

10. Does your hospital have the facilities for treatment of these ROP patients? ☐ Yes ☐ No

Thank you for your time.