



RECOMMENDED PHILIPPINE GUIDELINES FOR SCREENING AND REFERRAL OF RETINOPATHY OF PREMATURITY (ROP)

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PHILIPPINE ACADEMY OF OPHTHALMOLOGY (PAO)

PAO-RETINOPATHY OF PREMATURITY WORKING GROUP (ROPWG)

PAO–PHILIPPINE SOCIETY OF PEDIATRIC OPHTHALMOLOGY AND STRABISMUS (PSPOS)

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I. INTRODUCTION AND SIGNIFICANCE

Retinopathy of Prematurity (ROP) is a potentially blinding disease of retinal blood vessel development in preterm and low birth weight infants. Several factors are involved in its pathogenesis – some are known, such as oxygen, systemic stress, low birth weight, preterm age, IGF-1 and VEGF, but there are others that still remain unknown.

Due to the progressive nature of ROP, all infants at risk must be screened in order to give us a chance to intervene in what could be a devastating eye problem. ROP screening must be done at the proper time, in the right manner, and with the least frequency possible in order to minimize stress on the fragile premature infant. Thus, a set of screening criteria that is most efficient and can give the best yield should be in place in order to balance ensuring the infant's safety and performing all means necessary to saving his/her vision.

ROP screening criteria were well established initially in Western countries, particularly in the USA and UK. For decades, the criteria set by the American Academy of Pediatrics, American Academy of Ophthalmology and the American Association for Pediatric Ophthalmology and Strabismus has been followed here in the Philippines. However, recent evidence has shown that older and bigger babies are now acquiring ROP, especially in developing countries. And so, other countries have created their own guidelines unique to their current healthcare situation and tailored according to their own scientific evidence and experiences. We are thus, fortunate to now have available data that allowed us to make our own screening criteria for our population based on local experience.

In the Philippines, we are experiencing rapid progress and improvement in neonatal care and survival rate of preterm infants, thus giving us an increasing number of potential ROP patients. Currently, there are over 4000 pediatricians all over the country, among them 88 neonatologists, and all of them providing improving care of newborns. Likewise there are over 1600 ophthalmologists in the different regions of the country. Although retina specialists and pediatric ophthalmologists are quite a handful, potentially all general ophthalmologists, given the proper tools and training are capable of screening for ROP. Technically, we are equipped with the needed manpower for providing this valuable newborn care.

Large trials have been done to study the best management of ROP. The Cryo-ROP and ETROP studies have shown that peripheral retinal ablation is an effective intervention that can halt the progression of ROP and minimize unfavorable visual outcomes. Cryotherapy was initially the ablative therapy of choice but the more recent ETROP study demonstrated that laser photocoagulation is now the preferred mode of peripheral retinal ablation. More recent studies are looking into intravitreal anti-VEGF injection as another treatment modality, usually in conjunction with laser photocoagulation, especially for aggressive forms of ROP. The results, however, rare still varied and inconclusive with regards to long term benefits and potential harm.

Saving our children from ROP requires commitment, dedication and most important, timeliness. It cannot be overemphasized that ROP is a disease where timing is of utmost importance. Early detection that will lead to timely intervention can spell the difference between functional vision and a lifetime of disability from blindness for a child.

Thus, the Philippine Academy of Ophthalmology together with the Philippine Pediatric Society & Philippines Society for Pediatric Newborn Medicine created the Retinopathy of Prematurity Working Group (ROPWG) to draft a policy statement that would address Filipino babies at risk of developing Retinopathy of Prematurity. The statement mainly involves screening and referral guidelines with a short discussion on the management of ROP.

These guideline has been produced specifically for use within the Philippines and supersedes the previous guideline. Adherence to these will not ensure a successful outcome in every situation.

These guidelines should not be deemed inclusive of all proper methods of care or exclusive of other methods of care reasonably directed at obtaining the best results. It may be necessary to the ultimate judgment about the propriety of the care of a particular patient in light of all of the circumstances presented by that patient. The Philippine Academy of Ophthalmology is available to assist members in resolving dilemmas that arise in the course of ophthalmic practice. The guidelines are not medical standards to be adhered to in all individual situations. The Academy specifically disclaims any and all liability for injury or other damages of any kind, from negligence or otherwise, for any and all claims that may arise out of the use of any recommendations or other information contained herein.

It is hoped that the guideline will be a resource for all those involved in the organization and management of ROP services.

Wherever possible the guidelines have been drafted so that they can be implemented in all Philippine healthcare settings where ROP is managed. However, it is appreciated that service provision and organization may differ according to local needs and resources and some good practice points may need to be adapted to reflect these local circumstances.

II. DEFINITIONS AND ACRONYMS

AOG	Age of Gestation
BW	Birthweight
CRYO-ROP study	Multicenter Trial of Cryotherapy for Retinopathy of Prematurity
ETROP trial	Early Treatment for Retinopathy of Prematurity Randomized Trial
Gestational age (GA)	Time between the first day of the last menstrual period and the day of delivery
ICROP revisited	International Classification of Retinopathy of Prematurity Revisited
NICU	Neonatal Intensive Care Unit
Postconceptional age (PCA)	Time from conception
Postmenstrual age (PMA)	Gestational age plus chronological age
Postnatal age (PNA)	Time from birth
RCT	Randomized controlled trial
ROP	Retinopathy of prematurity
VEGF	Vascular Endothelial Growth Factor

III. INTERNATIONAL CLASSIFICATION OF RETINOPATHY OF PREMATURITY

The 2005 revision of the International Classification of Retinopathy of Prematurity⁴ (ICROP) retained the original descriptors of ROP – location of retinal involvement by zones, severity or stage of the retinopathy at the junction of the vascular and avascular retina, the extent of involvement by clock hours, and the presence or absence of vascular dilatation and tortuosity in the posterior pole also known as Plus disease.

The retina is divided into 3 zones in relation to the optic nerve (Figure 1). Zone I is the most posterior zone and is the area of the retina within a circle concentric to the optic nerve, the radius of which is twice the distance between the macula and optic nerve. Zone II is concentric to Zone I and tangential to the ora serrata nasally while Zone III is the remaining temporal crescent of retina.



Figure 1. Schematic diagram of the different zones of the retina and the clock hours used to describe the location and extent of ROP.

Severity of ROP is described in 5 stages with Stage 1 being the mildest form of ROP and Stage 5 as the most far advanced stage of the disease (Figures 2 - 6). Stage 1 ROP (Figure 2) is the mildest form of ROP and constitutes the initial stage of neovascularization at the junction of the vascular and avascular retina. This **demarcation line** is a definite structure that appears flat and white. In Stage 2 ROP, a **ridge** develops at the area of the demarcation line (Figure 3). It obtains a certain height and width and extends beyond the plane of the retina.



Figure 2. Stage 1 ROP showing demarcation line between vascular and avascular retina. (Images taken from: An International Committee for the Classification of Retinopathy of Prematurity. The international classification of retinopathy of prematurity revisited. *Arch Ophthalmol.* 2005; 123:991-999).



Figure 3. Stage 2 ROP showing the developing ridge of neovascular tufts at the junction of the vascular and avascular. (Images taken from: An International Committee for the Classification of Retinopathy of Prematurity. The international classification of retinopathy of prematurity revisited. *Arch Ophthalmol.* 2005; 123:991-999).

As the disease progresses, **extraretinal fibrovascular proliferation** ensues forming Stage 3 disease (Figure 4). Depending on the degree of vitreous infiltration by the extraretinal fibrovascular tissue, Stage 3 ROP can be subdivided into mild, moderate or severe forms.

Traction on the retina exerted by the fibrovascular membranes could lead to the development of **partial retinal detachments** characteristic of Stage 4 of the disease (Figure 5). Partial retinal detachments can either be extrafoveal (Stage 4A) or foveal (Stage 4B).



Figure 4. Stage 3 ROP showing different degrees of extraretinal fibrovascular formation. A, mild Stage 3 ROP. B, moderate Stage 3 ROP showing increased vascular tortuosity and dilatation. C, D, moderate Stage 3 ROP. E, F, severe Stage 3 ROP. (Images taken from: An International Committee for the Classification of Retinopathy of Prematurity. The international classification of retinopathy of prematurity revisited. *Arch Ophthalmol.* 2005; 123:991-999).



Figure 5. A, Stage 4A ROP showing extrafoveal partial retinal detachment and straightening of the temporal vascular arcades. B, partial retinal detachment involving the fovea in Stage 4B ROP. C, extensive temporal dragging of the macula and vessels also seen in Stage 4B ROP. (Images taken from: An International Committee for the Classification of Retinopathy of Prematurity. The international classification of retinopathy of prematurity revisited. *Arch Ophthalmol.* 2005; 123:991-999)

Untreated eyes eventually develop **total retinal detachment** characteristic of Stage 5 ROP due to the extensive fibrovascular membrane formation and subsequent contraction of these membranes. The retinal detachments are usually funnel-shaped. Prognosis is usually very poor among these eyes.



Figure 6. Stage 5 ROP. A, total retinal detachment showing an open funnel configuration. B, total retinal detachment that is open anteriorly and narrowed posteriorly. (Images taken from: An International Committee for the Classification of Retinopathy of Prematurity. The international classification of retinopathy of prematurity revisited. *Arch Ophthalmol.* 2005; 123:991-999).

An addition to the recent revision of the ICROP is the **aggressive posterior ROP** (AP-ROP, Figure 7). It is a severe form of ROP that is characteristically posterior in location, with prominent Plus disease, and ill-defined border between the vascular and avascular retina. If left untreated, it rapidly progresses directly to Stage 5 ROP.



Figure 7. Aggressive posterior ROP. Note the very posterior location (usually Zone I or posterior Zone II), the disproportionately increased tortuosity and dilatation of the retinal vessels, and the absence of a definite border between the vascular and avascular retina. (Images taken from: An International Committee for the Classification of Retinopathy of Prematurity. The international classification of retinopathy of prematurity revisited. *Arch Ophthalmol.* 2005; 123:991-999)

IV. MANAGEMENT AND TREATMENT

INDICATIONS FOR LASER ABLATIVE THERAPY:

The more favorable results after earlier surgical intervention obtained from the ETROP Study compared to those obtained when threshold disease was used as the criterion for treatment as described by the CRYO-ROP Study, has led to the revision of the indications for peripheral laser ablative therapy. The following criteria necessitate laser ablative therapy within 72 hours of diagnosis:

Type 1 ROP:

Zone I, any stage ROP with Plus disease Zone I, Stage 3 without Plus disease Zone II, Stage 2 or 3 with Plus disease

Infants with Type 2 ROP, which includes Zone I Stage 1 or 2 without Plus disease and Zone II Stage 3 without Plus disease, will only require serial examinations until it progresses to Type 1 ROP or the retina has achieved full vascularization to Zone III. Immature retinas will likewise be followed up as Type 2 ROP but on a less frequent interval as those eyes that develop Type 2 ROP.

Peripheral retina ablation has been the mainstay of therapy for vasoproliferative ROP. The purpose is to destroy the peripheral avascular areas of the retina in order to slow or reverse the abnormal growth of blood vessels. Early stages of ROP do not require treatment. Treatment is performed when a patient is diagnosed with High Risk Prethreshold (Type 1) disease defined as follows²:

- a) zone 1, any stage ROP with plus disease
- b) zone 1, stage 3 ROP with or without plus disease
- c) zone 2, stage 2 or 3 ROP with plus disease.

The earlier recommendation of treating ROP only when Threshold Disease is reached, as described in the Cryo-ROP study⁴, has been replaced by the recommendations of ETROP study². The Final Results of ETROP Randomized Trial showed that earlier treatment reduces the unfavorable visual and structural outcomes²⁵.

The proven treatment for ROP are laser therapy and cryotherapy^{2,4}. However, laser treatment is preferred over cryotherapy because a comparison between the 2 modes of treatment showed that laser treated eyes had better visual and structural outcomes²⁶.

The evaluation of staging and location or zone of the disease is very important in the management of the disease. Hence, the examiner involved in ROP screening should use the guidelines specified in the revised International Classification of Retinopathy of Prematurity Revisited⁴. The presence of plus disease is defined as abnormal dilation and tortuousity of the posterior retinal blood vessels in 2 or more quadrants or exceeding the degree of abnormality represented in reference photographs¹.

It is recommended that the treatment be accomplished within 72 hours of diagnosis to minimize the risk of progression of the disease to stage 4 or stage 5 disease. Patient should be followed in 3-7 days to determine if additional treatment is necessary^{2,3}.

ANTI VEGF

Treatment with anti-VEGF has been recently reported to benefit ROP zone 1 stage 3+²⁷. In contrast to retina treated with photocoagulation, the vessels continued to grow towards the periphery in retina treated with anti-VEGF alone. However the population size of BEAT-ROP study is too small to

assess the safety of the use of anti-VEGF. Thus, current use of anti-VEGF is limited to very aggressive ROP such as Aggressive Posterior ROP and Zone 1 stage 3+. For bilateral aggressive ROP, case reports have been published showing bilateral regression of ROP after unilateral bevacizumab injection only ²⁸. Case reports have also described further contraction of membranes that result in the progression of the retinal detachment after the use of anti-VEGF in cases with vitreoretinal traction membranes and stage 4 and 5 ROP^{29,30}. Anti-VEGF is a relatively new drug and its use in ROP still has controversies regarding the dosage, timing, safety, and long-term effects. It is therefore imperative that an informed consent from the parents and/or guardian be obtained after a thorough explanation of the benefits and risks of the use of anti-VEGF is done. Patients who underwent anti-VEGF treatment warrant longer follow-up. It is important to NOT discharge the patient from care until complete vascularization of the retina has been observed because BEAT-ROP reported that recurrence of retinopathy occurred much later in eyes treated with anti-VEGF²⁷. There have also been case reports of delayed vascularization even up to 11 months after anti-VEGF injection³⁰.

When screening and managing ROP, communication with parents/guardians and documentation of these communications are very important. Upon screening, parents should be informed of their child's condition including the possible consequences of the child's condition. Emphasis on the risk of severe visual impairment should be made once high risk characteristics are detected. Parents/guardians should also be updated after every subsequent examination.

The criteria for screening for ROP should be agreed upon and clear to the NICU and Ophthalmology Services. The NICU staff should be aware of these criteria and should automatically trigger referral to the ophthalmology service. Responsibility for examination and follow-up of infants should be well defined among the NICU and ophthalmology doctors. If, for whatever reason, the infant will be transferred to another NICU facility, availability of ophthalmologic care should be ensured by the primary physician. It is the responsibility of the primary physician, after discussing with the examining ophthalmologist, to communicate with the new primary physician the condition, the follow-up schedule, and the treatment needed. If the infant will be discharged from the hospital, the primary physician should ensure the continuity of ophthalmologic care. The primary physician should confirm through documentation that arrangements have been made prior to transfer or discharge. If the responsibility is delegated to the parents, the parents should be made to understand that infants with ROP have a potential for developing severe visual impairment including blindness if development of ROP requiring treatment is missed due to disregard of the follow-up schedule. Importance of timely follow-up should be emphasized. This communication with the parents/guardians should be diligently documented. All physicians giving care to infants with ROP should be aware that whether infants underwent treatment or not, ophthalmologic follow-up should be done within 4-6 months after discharge to screen for late onset complications such as high refractive errors, strabismus, and amblyopia.

RECOMMENDED GUIDELINES FOR SCREENING AND REFERRAL

Retinopathy of prematurity (ROP) is one of the few causes of childhood visual disability and avoidable blindness. Many extremely preterm babies will develop some degree of ROP although in the majority this never progress beyond mild disease which resolves spontaneously without treatment. A small proportion, develop potentially severe ROP which can be detected through regular retinal screening. If untreated, severe diseases can result in serious vision impairment and all the social, educational and economic implications attached by the blindness. Hence, all babies at risk of sight-threatening ROP should be screened.

This policy statement addresses the screening and referral guidelines with a short discussion on the management of ROP. There are 47 recommendations: 21 good practice points (GPP) and 26 evidence-based recommendations. The GPP are a consensus of the group involved in developing this Joint Statement. Each evidence-based recommendation is given a rating of its importance to the care process. The ratings of importance are divided into 3:

- A most important
- B moderately important
- C relevant but not critical

Each evidence-based recommendation is also given a rating of the strength of the best available evidence from which the recommendation was based. The ratings of the strength of evidence are divided into 3:

- I evidence is obtained from at least 1 properly conducted, well-designed randomized controlled trial including meta-analyses of randomized controlled trials.
- II evidence is obtained from the following:
 - well-designed controlled trial without randomization
 - well-designed cohort or case-control analytic studies, preferably from more than one center
 - multiple-time series with or without intervention
- III evidence is obtained from the following:
 - descriptive studies
 - case reports
 - report of expert committees/organizations

The following are guidelines for ROP screening:

REFERRAL NETWORK ORGANIZATION

*	After the examination, the official ROP screening form has to be accomplished by the examining ophthalmologist immediately after the examination. Duplicate forms	
	shall be accomplished - one for the patient's chart and a second form for the Ophthalmology Department's or ophthalmology consultant's file.	GPP
*	All patients who are being screened or are to be screened for ROP should have their charts marked accordingly by the NICU/birthing unit staff so as not to miss any screening schedules or patients. A logbook of infants for ROP screening and follow- up may be kept.	GPP
*	The NICU nurse / Pediatric resident shall be responsible for ensuring that the	
	infant's parents/guardians are aware of the infant's outpatient follow-up and its importance.	GPP
*	The attending pediatrician and ophthalmologist will coordinate with each other in the event that a premature infant screened shall require treatment.	GPP
*	In places wherein there are no ophthalmologists in the roster of the hospital (e.g.	
	hospitals outside metro manila), the NICU/birthing unit/attending pediatrician should	CPP
	call the ROP Hotline (PAO Secretariat 8135318, 09209133716) to inquire about the	011
	location of the nearest ROP Screener in the area. The attending pediatrician is	
	responsible for coordinating with the ROP screener.	

CRITERIA FOR SCREENING

*	All premature infants <35 weeks gestational age (GA) or birth weight (BW) <2000 grams must be screened for ROP^5 .	A;II
*	Infants with GA \ge 35 weeks or BW \ge 2000 grams assessed by the attending	A;II
	pediatrician or neonatologist as having unstable clinical course should be screened for ROP ⁵ .	

- * The following risk factors in premature infants were noted to be associated with the development of ROP^(insert citation) and, thus, its presence should alert the pediatrician/neonatologist to refer for ROP Screening:
 - ^{a.} Perinatal risk factors maternal infection during the 3rd trimester, placenta previa, poor nutrition, pre-eclampsia/eclampsia, premature rupture of membranes (PROM) ≥ 18 hours

before delivery , multiple gestation

^{b.} Neonatal risk factors – oxygen supplementation (nasal cannula, mask, hood, CPAP or mechanical ventilation), anemia, interventricular hemorrhage, jaundice, respiratory distress syndrome, seizure, sepsis, any syndrome, blood transfusion

TIMING OF SCREENING

*	The first examination must be performed at 2 weeks post-natal age (PNA) or at 32 weeks postconceptional age (PCA=GA + PNA), whichever comes earlier.	A;II
*	If an infant referred for ROP screening cannot be examined due to a critical systemic condition, the reasons for doing so should be clearly stated in the infant's medical records and the examination should be rescheduled within 1 week of the	A;III

intended examination⁷.

SCREENING EXAMINATION

ROP screening pertains to retinal screening examinations performed after adequate pupillary dilation by using the following³:

- 1. binocular indirect ophthalmoscope
- 2. 20D or 28D condensing lens
- 3. infant lid speculum
- 4. scleral depressor/indentor

*	Information about ROP and the screening process should be explained to the parents and/or guardians.	GPP
*	Oral and written consent from the parents and/or guardians should be obtained prior to screening. There must be a written order for ROP screening from the pediatrician.	GPP
*	All examinations shall be done in the presence of the NICU nurse-in-charge or pediatric resident or pediatrician.	GPP
*	The ideal setting for screening is under a radiant warmer in the NICU. However, stable or discharged babies may be screened in a bassinet or bed in the NICU or clinic ⁷ . Incubator-dependent babies can be screened within the incubator itself through the slanting wall ^{3,7,8} .	A;III
*	The infant should be swaddled properly. The infant should not be fed within an hour prior to exam ³¹ . Preferably, the infant should be burped prior to exam.	A;II
*	If the infant has apnea of prematurity, the infant should be closely monitored by the NICU nurse/NICU resident/pediatrician and preferably hooked to a pulse oxymeter. Stand-by oxygen and resuscitation equipment should be available.	GPP
*	To reduce pain and discomfort of the infants, pre-treatment of the eyes with a topical anesthetic agent such as proparacaine hydrochloride 0.5% (1-2 drops, 30-60 seconds pre-exam) may be used. Other comfort care techniques such as nesting, pacifiers, oral sucrose, and so forth may also be done ^{3,16-20} . ROP screening exams can have short-term effects on BP, heart rate and respiratory function and should therefore be kept short as possible ^{3,7,9} . One examination is sufficient only if it unequivocally shows the retina to be fully vascularized in both eyes ³ .	A;III
*	It is important that the retinal periphery be seen and this is facilitated by the use of neonatal eyelid speculum, scleral depression, and pupillary dilation.	GPP
*	Pupillary dilatation should be performed 45-60 minutes prior to screening ⁶ . A combination of phenylephrine 2.5% and tropicamide 0.5-1% or cyclopentolate 0.5% (if available) instilled 1 drop each eye in 2-3 doses, 5 minutes apart are suitable	

	mydriatic regimens ^{3,6,7,8} . Minimizing dilating drops, wiping off excess drops on the skin and eyelids and punctal occlusion are methods to reduce systemic absorption ⁷ . Atropine should not be used for dilation ⁸ .	B;I
*	Hand hygiene of ROP screeners is essential in reducing nosocomial infections ⁹ .	
	chlorhexidine gluconate-based hand sanitizers.	A;II
*	Wearing of gloves are recommended for infants in the isolation area ¹⁰ .	B,II
*	Use of sterile instruments has been recommended for all ROP exams ^{3,11} .	A;III
*	Examination for ROP in preterm infants should be performed either by a pediatric ophthalmologist, retina specialist, or general ophthalmologist who has sufficient	
	knowledge and experience to identify accurately the location and sequential retinal	٨.111
	changes in ROP ^{3,7,8,21} .	A,III
**	Classification and staging of ROP as well as recording of retinal findings in the ROPWC screening form (see Appendix) after every exam is based on the	A;I
	International Classification of Retinopathy of Prematurity Revisited (ICROP) study ^{3,4,21}	

FREQUENCY OF SCREENING

Follow-up examinations will be recommended by the examining ophthalmologist on the basis of the retinal findings according to the ICROP.

✤ Follow-up examinations of ≤1 week is recommended ^{1,2} :			
	0	vascularization ends at zone I even without ROP;	
	0	vascularization ends at posterior zone II, near the boundary of zone I;	
	 stage 1 or 2 ROP, zone I; 		A;I
	0	stage 3 ROP, zone II;	
	0	suspected presence of APROP.	
*	Follow	<i>u</i> -up examinations of 1 to 2 weeks is recommended ^{1,2} :	
	0	vascularization ends at posterior zone II;	Δ۰ι
	o stage 2 ROP, zone II;		Λ,Ι
	0	unequivocally regressing ROP, zone I.	
*	Follow	<i>y</i> -up examinations of 2-week is recommended ^{1,2} :	
	0	Stage I ROP, zone II	Δ۰ι
	0	Immature vascularization, zone II – no ROP	Λ,Ι
	0	Unequivocally regressing ROP, zone II	
*	Follow	<i>u</i> -up examinations of 2-3 weeks is recommended: ^{1,2}	A:I
	0	Stage 1 or 2 ROP, zone III;	,
	0	Regressing ROP, zone III.	

TERMINATION OF ROP SCREENING

*	ROP screening is concluded	when at	least one	of the	following retina	I findings are
	observed ³ :				-	_

 Zone III retinal vascularization attained without previous zone I or II ROP (if there is examiner doubt about the zone or if the PCA is <35 weeks, confirmatory exams may be warranted)³;

A;III

- \circ Full retinal vascularization in close proximity to the ora serrata for 360' (at least 1 disc area from the ora serrata)³;
- PCA of 50 weeks and no prethreshold disease (stage 3 ROP in zone II, any ROP in zone I) or worse ROP is present;
- \circ Regression of ROP^{3,22}.

CRITERIA FOR TREATMENT

*	 The following retinal findings, classified as Type 1 ROP², necessitate treatment within 72 hours of diagnosis²: o Zone I, any stage ROP with Plus disease o Zone I, Stage 3 without Plus disease o Zone II, Stage 2 or 3 with Plus disease 	A;I
*	Aggressive Posterior ROP (APROP) should be treated as soon as possible, within 48 hours of diagnosis.	A;I
*	Infants with Stage 4 and 5 ROP should be immediately referred to a vitreo-retina specialist for possible surgical management.	GPP

TREATMENT

*	Treatment with ablation of the peripheral avascular retina is the standard of care ^{1,2}	A;I
*	Ablation of the peripheral avascular retina using laser indirect ophthalmoscope (LIO) is the first line of treatment ^{2,26} . Near-confluent laser burns are applied to the avascular retina. If LIO is not available, treatment with cryotherapy may be done ¹ .	A;I
*	For very aggressive ROP such as Aggressive Posterior ROP and Zone 1 stage 3+, anti-VEGF may be used as an adjunct to LIO or as primary treatment ²⁷ . However, caution is advised.	A;I
*	Anti-VEGF may be used with caution in ROP cases with vitreoretinal membranes such as in stage 4 and 5 ROP ^{29,30} .	A;III

It is the responsibility of the examining ophthalmologist who prefers not to manage infants with ROP requiring treatment to refer to the appropriate ROP specialist (see Appendix 2: List of ROP Screeners) for treatment. In localities where infants cannot avail of the services of a pediatric ophthalmologist or retina specialist, infants should be referred/ transferred to centers with treatment

capabilities. ROP treatment should generally be accomplished within 48-72 hours upon diagnosis of ROP requiring treatment in order to minimize the risk of visual impairment^{2,3,21}.

FOLLOW-UP AFTER TREATMENT

*	Infants who underwent treatment with LIO or cryotherapy should be followed-up in 3-7 days to determine if additional treatment is necessary ^{2,3} .	A;I
*	Infants who underwent anti-VEGF treatment should be followed-up until complete vascularization of the retina has been observed ²⁷ .	A;II

TRANSFER TO ANOTHER INSTITUTION

*	If a patient is to be transferred to another hospital for further medical care,	
	availability of ophthalmologic care in the receiving hospital should be ensured.	
	Proper endorsement with written documentation must be carried out by the	٨
	transferring pediatrician and ophthalmologist ^{3,21} .	A,III

OUT-PATIENT CONTINUITY OF OPHTHALMOLOGIC CARE

Importance of timely follow-up should be emphasized to the parents and/or guardians.

*	Prior to discharge from the hospital, the parents should receive proper instructions from the NICU nurse/resident/pediatric consultant regarding out-patient follow-up. Proper documentation should be exercised.	GPP
*	The importance of follow-up should be emphasized to parents. They should understand that infants with ROP have a potential for developing severe visual impairment, including blindness.	GPP
*	All communications with the parents/guardians should be diligently documented.	GPP

LONG-TERM FOLLOW-UP AFTER COMPLETION OF ROP SCREENING OR TREATMENT

Late ocular sequelae of ROP such as strabismus, amblyopia and refractive errors may occur.

*	All physicians giving care to infants with ROP should be aware that whether infants	
	underwent treatment or not, ophthalmologic follow-up should be done within 4-6 months after discharge to screen for late onset complications.	A;III
*	Regular eye evaluations at 1 year, 2 ½ years and 4 years old and yearly thereafter are recommended for premature infants regardless of whether or not they developed ROP ^{4,23,24} .	A;I

DIGITAL FUNDUS PHOTOGRAPHY AND TELEMEDICINE

The use of digital photographic retinal images that are captured and sent for remote interpretation is a developing approach to ROP screening. Digital retinal imaging is a useful tool for objective documentation of retinal findings but is not the primary method used for ROP screening³.

*	Binocular indirect ophthalmoscopy remains the gold standard for ROP screening.	GPP
*	Telemedicine using digital retinal imaging is an alternative to actual screening where screeners are not available.	GPP
*	Digital photographers should be trained to capture images of ROP and must have attended a comprehensive ROP Fundus Photography Workshop.	GPP
*	ROP graders should have a mentored experience in the interpretation of digital images of ROP.	GPP

These recommendations form part of an evolving standard of care which shall be superceded by newer findings from acknowledged experts. It will also be affected by latest evidence-based statistics on incidence and risk factors.





REFERENCES:

- 1. Cryotherapy for Retinopathy of Prematurity Cooperative Group. Multicenter trial of cryotherapy for retinopathy of prematurity. Preliminary results. Arch Ophthalmol. 1988;106:471-479.
- 2. Early Treatment for Retinopathy of Prematurity Cooperative Group. Revised indications for the treatment of retinopathy of prematurity. Results of the early treatment for retinopathy of prematurity randomized trial. Arch Ophthalmol. 2003;121:1684-1694.
- American Academy of Pediatrics, American Academy of Ophthalmology, American Association of Pediatric Ophthalmology and Strabismus and American Association of Certified Orthoptists. Screening Examination of Premature Infants for Retinopathy of Prematurity. Pediatrics 2013; 131:18
- 4. An International Committee for the Classification of Retinopathy of Prematurity. The international classification of retinopathy of prematurity revisited. Arch Ophthalmol. 2005; 123:991-999.
- 5. Corpus K, Jimenez JM, Anzures RGAS, Bascuna RIT, ROP Working Group. Proposed New ROP Screening Criteria: Evidence for Including Older and Heavier Filipino Premature Babies. Unpublished 2013.
- 6. Tan RJD, Grulla PQ, Feliizar MPTR, Santos JB, Arroyo MH, Santiago DE. Changes in vital signs and pupil diameter related to pharmacologic mydriasis in premature infants: a randomized double blind control study. Presented in the 2011 Philippine Academy of Ophthalmology Annual Meeting.
- 7. Royal College of Paediatrics and Child Health, Royal College of Ophthalmologists, British Asociation of Perinatal Medicine. UK Retinopathy of Prematurity Guideline. 2008
- 8. National Neonatology Forum India. Evidence-Based Clinical Practice Guidelines. October 2010
- 9. Hered RW, Gyland EA. The ROP Screening Exam: Ensuring a safe and efficient exam while minimizing infant discomfort. Neonatal Network; 2010. 29 (3) 143-151
- Ng PC, Wong HL, Lyon DJ, So KW, Liu F, Lam RK et al. Combined use of alcohol hand rub and gloves reduces the incidence of late onset infection in very low birth weight infants. Archives of Disease in Childhood. Fetal and Neonatal edition, 89 F336-F340.
- 11. Hered RW. Use of nonsterile instruments for ROP exam in the NICU. J of Pediatr, 2004: 145: 308-311
- 12. Spaulding EH. Chemical disinfection of medical and surgical instruments. In S.S. Block (Ed). Disinfection, sterilization and preservation (pp517-531). Philadelphia: Lea & Febiger.
- 13. Rutala WA. APIC Guideline for selection and use of disinfectants. 1996 APIC Guidelines Committee. Association for Professionals in Infection Control and Epidemiology. American Journal of Infection Control, 1996; 24, 313-342.
- 14. Woodman TJ, Coats DK, Paysse EA, et al. Disinfection of eyelid speculums for ROP exams. Archives of Ophthalmol. 1998; 116: 106-115
- 15. Hutchinson AK, Coats DK et al. Disinfection of eyelid speculums with chlorhexidine gluconate after ROP exams. Archives of Ophthalmol, 1998; 118: 786-789.
- Slevin M, Murphy JFA, Daly L, O'Keefe M. ROP Screening, stress related responses, the role of nesting. Br J Ophthalmol 1997; 81: 762-764
- 17. Gal P, Kissling GE, Young WO, Dunaway KK, Marsh VA, Jones SM. Efficacy of topical anesthetics to reduce pain in premature infants during eye examinations for ROP. Ann Pharmacother 2005; 39 (5) : 829-833
- 18. Mitchell A, Stevens B, Mungan N, Johnson W, Lobert S, Boss B. Analgesic effects of oral sucrose and pacifier during eye examinations for ROP. Pain Manag Nurs 2004; 5 (4): 160-168
- 19. Samra HA, McGrath JM. Pain management during ROP eye exams: a systematic review. Adv Neonatal Care 2009; 9(3): 99-110
- 20. Sun X, Lemyre B, Barrowman N, O'connor M. Pain management during eye exams for ROP: a systematic review. Acta Paediatr 2010; 99 (3): 329-334
- 21. Philippine Pediatric Society, Philippine Society of Pediatric Ophthalmology and Strabismus, Philippine Society of Developmental and Behavioral Pediatrics, National Committee for Sight

Preservation. Policy Statement on Pediatric Blindness Prevention and Vision Screening. 2004; 1 (6): 25-27

- 22. Repka MX, Palmer EA, Tung B. Cryotherapy for ROP Cooperative Group. Involution of Retinopathy of Prematurity. Arch Ophthalmol 2000; 118 (5) 645-649
- 23. Cryotherapy for Retinopathy of Prematurity Cooperative Group. Multicenter trial of Cryotherapy for Retinopathy of Prematurity. Ophthalmologic Outcomes at 10 years. Arch Ophthalmol 2001; 119: 1110-1118
- 24. Schalih-Delfos N, de Graaf MEL, Treffers W, Engel J and Cats B. Long term follow-up of Premature Infants: Detection of strabismus, amblyopia and refractive errors. Br J Ophthalmol, 2000; 84:963-967
- 25. Good WV, ETROP Cooperative Group. Final Results of the Early Treatment for Retinopathy of Prematurity (ETROP) Randomized Trial. Trans Am Ophthalmol Soc 2004;102:233-250.
- 26. Ng EYJ, Connolly BP, et al. A Comparison of Laser Photocoagulation with Cryotherapy for Threshold Retinopathy of Prematurity at 10 Years: Part 1 Visual Function and Structural Outcome. Ophthalmol 2002;109:928-935
- 27. Mintz-Hittner HA, et al for BEAT ROP Cooperative Group. Efficacy of Intravitreal Bevacizumab for Stage 3+ Retinopathy of Prematurity. N Engl J Med 2011;364:603-15.
- 28. Karaca C, Oner AO, et al. Bilateral effect of unilateral bevacizumab injection in Retinopathy of Prematurity. JAMA Ophthalmol. 2013;131(8):1099-1101
- 29. Honda S., Hirabayashi A., et al. Acute contraction of the proliferative membrane after an itnravitreal injection of bevacizumab for advanced retinopathyof prematurity. Graefes Arch Clin Exp Ophthalmol 2008 Jul; 246(7):1061-3
- 30. Chan RVP. Intravitreal Bevacizumab Therapy for the Treatment of ROP. Retina Today September 2011:76-80.
- 31. Strube YN, Bakal JA, et al. Relationship between feeding schedules and gastric distress during retinopathy of prematurity screening eye examinations. JAAPOS 2010 Aug;14(4):334-9.

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ROP SCREENING FORM

Retinopathy of Prematurity Wo	orking Group Scree	ning Form	Exam No:	Exam Date://
Baby's Name: Birthdate:	Sex:	AOG:w	ks by UTZ ks by LMP	Gestational Risk Factors:
Parent/Guardian's Name:	Parent/Guardian's Name:			Poor Nutrition
Relation to Baby:	PNA: wks	day/s	Pre-Eclampsia/Eclampsia	
Mother's Age:	PCA: wks	day/s	Twin/Multi Gestation	
Contact Number:	Birth Weight:	kgs	Perinatal Risk Factors:	
Address:		Current Weight: O ₂ Use Risk Factor:	kgs 0 ₂ %	□ Anemia: Hgb □ IVH
Referring Physician:		Mech Vent CPAP		Resp. Distress Syndrome
Examined By/Signature:		O2 Hood		Seizure Senzia
		□ Mask □ Nasal O2		□ Sepsis □ Syndrome
				☐ Transfusion
DIAGRAM LEGEND: Affix the appropriate abbrev IR Immature Retina S1 Stage1 S2 Sta IRH Intraretinal Hemorrhage PRH Preretinal LS Laser Scar MEC Macular Ectopia TRE	ristions onto the diagram below. Yo ge2 S3a Stage3 Active Hemorrhage VS Vessel shur I Traction Retinal Detachment	u may add drawings or labels S3I Stage3 Inactive t/ circumferential closure GAA Greying of Avascu	<i>as you see fit.</i> S4A Stage4A IRE Intraretinal Iar Area RA Re	S4B Stage4B S5 Stage5 Exudate SRF Subretinal Fluid tinal Atrophy AH Active Hyaloid
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RIGHT EYE ⁶				6 LEFT EYE
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For comments or suggestions about this form, p For concerns regarding ROP, please call Philip	nlease email <u>jjimenezmd@gma.</u> pine Academy of Ophthalmo	il.com or ROPWG@yahoo logy (PAO) Secretariat (0	<u>groups.com</u>)2)813-5318 or (0	920)913-3716 v8.3

ROP SCREENING FORM

Retinopathy of Prematurity W	orking Group Scree	ning For	n E	xam No:	Exam Date://		
Baby's Name:		AOG: _	wks	by UTZ	Gestational Risk Factors:		
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Parent/Guardian's Name:			Wks i	by Ballard	Poor Nutrition Pro Eclamosia/Eclamosia		
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For concerns regarding ROP, please call Phili	ppine Academy of Ophthalmo	logy (PAO) S	ecretariat (02)81	3-5318 or (09	920)913-3716 v8.3		

ROP SCREENING FORM

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ROP SCREENING FORM

The Retinopathy of Prematurity (ROP) Screening Form is the recommended form of the Philippine Academy of Ophthalmology ROP Working Group for the documentation of ROP Screening and succeeding examinations. This form can be downloaded from the PAO ROP website www.------. The ROP Registry (www.----) uses the exact same form for ease of transfer of data. For best printing results, use legal size paper (8.5x14 inches). This form was formulated to give the ROP screener a thorough guide on the important details to note when examining a patient with ROP or with risk factors for developing ROP. Taking note of these details will help you make the accurate diagnosis and plan the appropriate management. Guide in filling up the ROP Screening Form: 1. Write the exam number and date of examination on the space provided at the top right-hand corner. 2. Fill up the baby's personal data asked in the top left box. 3. In the top right box, the risk factors of the baby are enumerated. a. First, fill up the age of gestation (AOG) according to the method of AOG determination used. If data is not available, write NA. b. Second, fill up the birth weight and current weight. c. Third, fill up the post-natal age (PNA), which is the number of days/weeks since birth. d. Fourth, compute for the post-conception age (PCA) using the formula PCA=AOG+PNA e. Fifth, identify the risk factors present in your patient and tick the appropriate tick box/es. 4. Do not forget to write the name of the referring physician and affix your name and signature on the appropriate space provided. 5. For the documentation of the fundus findings, you can either draw on the fundus diagram provided or mark your findings in the appropriate area in the fundus diagram using the acronym labels in the diagram legend box. a. Note the ROP stage present based on the International Classification of Retinopathy of Prematurity. If the vessels are tapered without any ROP lesion, write IR for immature retina. If stage 3 ROP is seen, indicate whether it is active (S3a), i.e. extraretinal neovascularization or extraretinal fibrovascular proliferation (EFP) with dilated and tortuous vessels near a salmon pink ridge; or inactive (S3i), i.e. extraretinal neovascularization with normal caliber vessels and less tortuosity with signs of EFP atrophy (e.g. whitish terminal ends), and the ridge appears white and less congested (e.g. decrease in height, width, and redness). b. Note the other fundus findings that may indicate the activity of the ROP and prognosticate the progression or rearession of ROP, and eventual visual acuity. Intraretinal Hemorrhage (IRH): blood within the retina Preretinal Hemorrhage (PRH): blood on the surface of the retina Vessel shunt/ circumferential closure (VS): interconnection of vascular arcades Intraretinal Exudate (IRE): exudate within the retina Subretinal Fluid (SRF): fluid under the retina Laser Scar (LS): chorioretinal scars due to previous photocoagulation Macular Ectopia (MEC): macular heterotopia; foveal center is located > 2.5 disc diameters from the disc Traction Retinal Detachment (TRD): retinal detachment due to vitreoretinal membranes Greying of Avascular Area (GAA): avascular retina becomes grey due to hypoxia Retinal Atrophy (RA): thinning of the retina making choroidal vessels prominent Active Hyaloid (AH): hyaloid vascular system is open with note of blood within the hyaloid artery 6. Take note of other important findings by ticking the appropriate tick box/es. The grading of foveal maturity is as follows: 0 - No pigment 1 - Dark red pigment: normally appears at 34 wks 2 - Partial annular reflex 3 - Full annular reflex: normally appears at 36 wks 4 - Foveal pit barely seen 5 - Foveal reflex: 7. Tick the appropriate diagnosis based on your findings. 8. Develop a management plan. 9. If the patient is for follow-up, indicate the number of days/weeks/months and the specific date of follow-up. If the patient is for referral, indicate to whom the patient will be referred and for what reason. Sources: International Committee for the Classification of Retinopathy of Prematurity. The International Classification of Retinopathy of Prematurity Revisited. Arch Ophthalmol 2005;123:991-999. Barishak YR, Spierer A. Embryology of the Posterior Segment and Developmental Disorders. Pediatric Retina. ME Hartnett, M Trese, A Capone, B Keats, S Steidl. Philadelphia USA:Lippincott Williams & Wilkins; 2005. 3-12. WV Good, Early Tratment for Retinopathy of Prematurity Cooperative Group. Final Results of the Early Treatment for Retinopathy of Prematurity Randomized Trial. Trans Am Ophthalmol Soc 2004;102:233-250. Cryotherapy for Retinopathy of Prematurity Cooperative Group. Multicenter Trial of Cryotherapy for Retinopathy of Prematurity. Arch Ophthalmol 2001;119:1110-1118. American Academy of Pediatrics, Section on Ophthalmology, American Academy of Ophthalmology, American Association for Pediatric Ophthalmology and Strabismus, American Association of Certified Orthoptists. Screening Examination of Premature Infants for Retinopathy of Prematurity. Pediatrics 2013; 131:189-195. *Filled-up sample form is available for viewing or download. For comments or suggestions about this form, please email jjimenezmd@gmail.com or ROPWG@yahoogroups.com For concerns regarding ROP, please call PAO Secretariat (02)813-5318 or (0920)913-3716

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5 T	ORRES	CARLOMAGNO	(917) 510-3420	cdteyemd@yahoo.com	Angeles University	Angeles	Pampanga	III
					Jose B. Lingad Memorial Hospital	San Fernando		
6 S	ANTIAGO	PATRICK	(917) 884-8890	patricksantiagomd@yahoo.com	Meycuayan Doctors Hospital	Meycuayan	Bulacan	III
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					East Avenue Medical Center	Quezon City		
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19 C	ONSTANTINO	DANILO	(917) 842-5524	dancon_retina@yahoo.com	Las Pinas Doctors Hospital University of Perpetual Help	Las Plnas Paranaque	Metro Manila	NCR
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20 C	RUZ	EDWARD DENNIS	(917) 846-7810	dgcruzmd77@yahoo.com	Makati Medical	Makati	Metro Manila	NCR
			-					30

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					University of the East Ramon Magsaysay Memorial Medical Center	San Juan		
22 E	DE JESUS	FABIAN ARNEL	(917) 899-0842	eyerehabdoc@yahoo.com	Asian Hospital and Medical Center	Muntinlupa	Metro Manila	NCR
					St. Luke's Medical Center-Global City	Taguig		
23 E	DE LEON	ALDOUS	(917) 811-3687	douseyemd@gmail.com	UP-Philippine General Hospital	Manila	Metro Manila	NCR
24 F	AJARDO- GOMEZ	FLORENTINA	(917) 796-5234	Flor_fgomez@yahoo.com	Manila Doctors Hospital	Manila	Metro Manila	NCR
					UP-Philippine General Hospital			
25 F	ELICIANO	JONATHAN	(917) 740-7401	ginofeliciano@yahoo.com	St. Luke's Medical Center	Quezon City	Metro Manila	NCR
26 F	LAMINIANO	ROBERTO	(920) 922-0337	robbieflaminiano@yahoo.com	Capitol Medical Center	Manila	Metro Manila	NCR
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28 0	GERMAR	GREGORY	(917) 843-7599	ggermar@yahoo.com	UP-Philippine General Hospital	Manila	Metro Manila	NCR
					The Medical City	Pasig		
					St. Luke's Medical Center	Quezon City		
29 0	60	RORY	(917) 529-2018	rorykgo@yahoo.com	Makati Medical Center	Makati	Metro Manila	NCR
					Chines General Hospital	Manila		
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31 J	AVELLANA	JUAN ANTONIO	(917) 536-2791	anton_javellana@yahoo.com	Makati Medical Center	Makati	Metro Manila	NCR
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33 k	ABIGTING	ROEL	(917) 811-3874	rekmd@yahoo.com	FEU Medical Center	Quezon City	Metro Manila	NCR
34 L	AXAMANA	EFREN	(920) 9059057 / (922) 8195810	laxamana@i-manila.com.ph/ eclaxamana@yahoo.com	St. Luke's Medical Center	Quezon City	Metro Manila	NCR
					St. Luke's Medical Center – Global City	Taguig		
35 L	ISING	RAMIL	(917) 803-3984	lisingmd617@yahoo.com	UP-Philippine General Hospital	Manila	Metro Manila	NCR
36 L	OY	MARIE JOAN	(917) 841-9705	idocjloy@yahoo.com	St. Luke's Medical Center	Quezon City	Metro Manila	NCR

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38 MARIN	JESUS	(920) 295-8210	jessmarin2002@yahoo.com	Ospital ng Makati	Makati	Metro Manila	NCR
				Eye Referral Center	Manila		
				Medical Center Manila	Manila		
				Manila Doctors Hospital	Manila		
				Asian Hospital and Medical Center	Muntinlupa		
				FEU Medical Center	Quezon City		
39 NANAGAS	MA. LOURDES	(918) 905-3827	ambosmom@yahoo.com	Jose Reyes Memorial Medical Center	Quezon City	Metro Manila	NCR
40 PAJARILLO	JUNN	(928) 504-1462	junn-pajarillo@yahoo.com	UP-Philippine General Hospital	Manila	Metro Manila	NCR
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42 REYES	"KAYE" CATHERINE DIANNE	(917) 823-5293	kayereyes@yahoo.com	Manila Doctors Hospital	Manila	Metro Manila	NCR
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				Asian Hospital and Medical Center	Muntinlupa		
				The Medical City	Pasig		
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				Cardinal Santos Medical Center	San Juan		
49 SIBAYAN	SANTIAGO	(916) 302-0962	santiagosibayan@yahoo.com	Makati Medical Center	Makati	Metro Manila	NCR
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50 SY	JOCELYN	(917) 814-9447	jaws_991@yahoo.com	St. Luke's Medical Center – Global City	Taguig	Metro Manila	NCR
				University of Santo Tomas Hospital	Manila		

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					St. Luke's Medical Center	Quezon City		
53	3 TE	WILLIE	(917) 866-6791	wiliefa@yahoo.com	Ospital ng Makati	Makati	Metro Manila	NCR
					Chinese General Hospital	Manila		
					Metropolitan Medical Center	Manila		
					FEU Medical Center	Quezon City		
54	I UY	ROBERTO	(917) 843-3937	manilaretina@gmail.com	University of Santo Tomas Hospital	Manila	Metro Manila	NCR
					Chinese General Hospital	Manila		
55	5 UY	HARVEY	(917) 523-9332	harveyuy@yahoo.com	Pacific Eye Center	Makati	Metro Manila	NCR
					St. Luke's Medical Center	Quezon City		
56	VALENZUELA	RAMON	(917) 890-3937	rayv_idoc@yahoo.com	Asian Hospital and Medical Center	Muntinlupa	Metro Manila	NCR
57	VALERO	SHERMAN	(917) 329-7030	valeromd@yahoo.com	Makati Medical Center	Makati	Metro Manila	NCR
					The Medical City	Pasig		
58	3 ATIENZA	NARCISO JR	(928) 594-8000	retinasurgeon@gmail.com	Legaspi Eye Center	Legaspi	Albay	v
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					Western VIsayas Medical Center			
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63	8 KABIGTING	ROEL	(917) 811-3874	rekmd@yahoo.com	Ramiro Hospital	Tagbilaran	Bohol	VII
64	LIM	JEFFREY	(917)-3212423	jclmd@yahoo.com	Cebu Doctors Hospital	Cebu	Cebu	VII
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LIST OF PEDIATRIC OPHTHALMOLOGY SCREENERS NATIONWIDE

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					Pangasinan East Eye Center	Urdaneta		
2 VE	NTURA	RICARDO	(999) 889-4696	kiddieyemd@yahoo.com	Lipa City Eye Center	Lipa	Batangas	IV-A
3 CH	IAN-UY	PIK-SHA	(916) 369-1959	pikshachan@hotmail.com	Pacific Eye Center	Binondo	Metro Manila	NCR
4 BC	DLINAO	JOANNE	(917) 880-2235	badjeyemd@yahoo.com	American Eye Center Greenbelt	Makati	Metro Manila	NCR
5 CH	IAN-UY	PIK-SHA	(916) 369-1959	pikshachan@hotmail.com	Pacific Eye Center	Makati	Metro Manila	NCR
6 LIN	IGAO	MICHELLE	(927) 250-4153	michlingao@yahoo.com	Patient First Medical Center	Makati	Metro Manila	NCR
7 BA	NZON	MARCELINO	(920) 932-9388	mdbanzon@surfshop.net.ph	Makati Medical Center	Makati	Metro Manila	NCR
8 FA	JARDO	NORMAN	(921) 530-2236	normsky100@yahoo.com	Asian Eye Institute Rockwell	Makati	Metro Manila	NCR
9 BC	DLINAO	JOANNE	(917) 880-2235	badjeyemd@yahoo.com	American Eye Center Shangri La Plaza	Mandaluyong	Metro Manila	NCR
10 MA	ACARAIG	CATHERINE	(920) 911-5472	cqmac@hotmail.com	American Eye Center Shangri La	Mandaluyong	Metro Manila	NCR
11 BA	LDOVINO-BARJA	CLAIRE	(917) 832-7532	clairebaldovino@yahoo.com	Galileo Surgicenter	Mandaluyong City	Metro Manila	NCR
12 BA	NZON	MARCELINO	(920) 932-9388	mdbanzon@surfshop.net.ph	University of Santo Tomas Hospital	Manila	Metro Manila	NCR
13 CH	IUA	CARLOS EMMANOEL	(920) 968-9354	chewymd@gmail.com	Lourdes Hospital	Manila	Metro Manila	NCR
14 LE	E-ONG	ANNA KAREN	(920) 905-9658	karenleeong@gmail.com	Manila Doctors Hospital	Manila	Metro Manila	NCR
15 MA	ACARAIG	CATHERINE	(920) 911-5472	cqmac@hotmail.com	Ramos Gen Hospital	Manila	Metro Manila	NCR
					University of Santo Tomas Hospital			
16 MC	ONZON-PAJARILLO	ANDREA	(917) 534-9486	iyamonzon.pajarillo@gmail.com	UP-Philippine General Hospital	Manila	Metro Manila	NCR
17 VA	LBUENA	MARISSA	(917) 892-4078	mnvalbuena@gmail.com	UP-Philippine General Hospital	Manila	Metro Manila	NCR
18 RC	QUE	BARBARA	(917) 833-2020	blroque@gmail.com	Asian Hospital Hospital & Medical Center	Muntinlupa	Metro Manila	NCR
19 FA	JARDO	NORMAN	(921) 530-2236	normsky100@yahoo.com	Asian Eye Institute Mall of Asia	Pasay	Metro Manila	NCR
20 CR	RUZ	FAY CHARMAINE	(917) 885-9574	peep_pie@yahoo.com	The Medical City	Pasig	Metro Manila	NCR
21 VIL	LA	PATRICIA	(920) 903-5231	pattivilla@hotmail.com	The Medical City	Pasig	Metro Manila	NCR
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24 CH	IAN-UY	PIK-SHA	(916) 369-1959	pikshachan@hotmail.com	St. Luke's Medical Center	Quezon City	Metro Manila	NCR
25 CH	IUA	CARLOS EMMANOEL	(920) 968-9354	chewymd@gmail.com	St. Luke's Medical Center	Quezon City	Metro Manila	NCR
								34

LIST OF PEDIATRIC OPHTHALMOLOGY SCREENERS NATIONWIDE

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					Clinica Tamesis			
27	FAJARDO	NORMAN	(921) 530-2236	normsky100@yahoo.com	Philippine Children's Medical Center	Quezon City	Metro Manila	NCR
					Asian Eye Institute Trinoma			
28	LINGAO	MICHELLE	(927) 250-4153	michlingao@yahoo.com	Philippine Children's Medical Center	Quezon City	Metro Manila	NCR
					Asia Pacific Eye Care Specialists			
					Perfect Sight Eye Center			
29	MACIAS	EMILIO III	(915) 925-9333	ialiner@yahoo.com	St. Luke's Medical Center	Quezon City	Metro Manila	NCR
30	VENTURA	RICARDO	(999) 889-4696	kiddieyemd@yahoo.com	FEU Medical Center	Quezon City	Metro Manila	NCR
31	ABES-SERVERA	MARIA REBECCA	(02) 727-0001	rica_abes@yahoo.com	Cardinal Santos Medical Center	San Juan	Metro Manila	NCR
32	CHUA	CARLOS EMMANOEL	(920) 968-9354	chewymd@gmail.com	St. Luke's Medical Center – Global City	Taguig	Metro Manila	NCR
33	ROQUE	BARBARA	(917) 833-2020	barbara.roque@eyerepublic.com.p h	St. Luke's Medical Center – Global City	Taguig	Metro Manila	NCR
34	VILLA	PATRICIA	(920) 903-5231	pattivilla@hotmail.com	St. Luke's Medical Center – Global City	Taguig	Metro Manila	NCR
35	BASCUÑA	RENA IVY	(939) 908-3764	renaivytamares@gmail.com	Eye Center Bicol Access Health	Naga	Camarines Sur	V
36	CHAN	NATHANIEL	(918) 979-5003	docpol@hotmail.com		lloilo	lloilo	VI
37	ONG	LOREN	(917) 620-2665	lorenintsik@aol.com	ACES Eye Referral Clinic Dumaguete	Dumaguete	Negros Oriental	VI
					ACES Eye Referral Clinic Cebu General Hospital	Cebu	Cebu	
					ACES Eye Referral Clinic Perpetual Succor Hospital	Cebu	Cebu	
38	LUZANO	MARICEL	(920) 953-9301	emmarisa_02@yahoo.com	DMSF Hospital	Davao	Davao del Sur	XI
39	ONG	LOREN	(917) 620-2665	lorenintsik@aol.com	ACES Eye Referral Clinic Cagayan De Oro	Cagayan De Oro	Misamis Oriental	XI

PAO Secretariat

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PLEDGE OF COMMITMENT

We and organization pledge to commit our support to the advocacy on Retinopathy of Prematurity (ROP) in the Philippines this **17th of November 2013** at the Luxent Hotel, Spring Function Room, Timog Avenue corner Tomas Morato, Rotonda, South Triangle, Quezon City on the occasion of World Prematurity Day.

for & atinga

MELINDA M. ATIENZA, MD President Philippine Pediatric Society

PETTY D. DIO, MD President Community Pediatrics Society of the Philippines

IRINEO C. BERNARDO III, MD For: ATTY. LEO O. OLARTE, MD President Philippine Medical Association

PAUL D. COBARRUBIAS, MD For: RONALD V. LIMCHU, MD President Philippine Society of Pediatric Critical Care Medicine

for \$\$ Bonus

MARIA CECILIA O. TOLENTINO, MD President Perinatal Association of the Philippines

MR. RANDY WEISSER President Resources for the Blind Inc.

CARINA C.QUIMBO, MD

Philippine Obstetrics & Gynecology Society

President Philippine Society of Newborn Medicine

RAUL M. QUILLAMOR, MD

President

MR. FRAVCIS CHOY Board of Trustee Parents Advocate for Visually Impaired