



HEALTH HOLDING

HAFER ALBATIN HEALTH
CLUSTER
MATERNITY AND
CHILDREN HOSPITAL

Department:	Neonatal Intensive Care Unit (NICU)		
Document:	Multidisciplinary Policy and Procedure		
Title:	Routine Screening of Retinopathy of Prematurity		
Applies To:	All NICU Staff, Ophthalmologists and Biomedical engineers		
Preparation Date:	January 05, 2025	Index No:	NICU-MPP-022
Approval Date:	January 19, 2025	Version :	2
Effective Date:	February 19, 2025	Replacement No.:	NICU-DPP-022 (1)
Review Date:	February 19, 2028	No. of Pages:	03

1. PURPOSE:

- 1.1 To provide a safe and effective process for routinely screening of neonates for retinopathy of prematurity in the neonatal intensive care unit and to facilitate treatment and follow up.
- 1.2 Maternity and Children Hospital- Hafar Albatin neonatal intensive care unit is enrolled to King Khalid Eye Specialist Hospital- Riyadh telemedicine screening wherein they are committed to provide screening, reporting services and facilitate treatment arrangement. However, treatment delivery remains the responsibility of the sending institution.

2. DEFINITIONS:

- 2.1 Retinopathy of Prematurity (ROP) is a proliferative disorder of the developing retinal blood vessels in preterm infants that potentially leads to blindness in a small but considerable percentage of neonates.

3. POLICY:

- 3.1 Physicians are responsible for ordering routine screening as required.
- 3.2 Experienced ophthalmologists or trained nurses are responsible in obtaining digital fundus photography using Retcam or other cameras approved for this purpose.
- 3.3 Available ROP coordinator.
- 3.4 Available ophthalmologist in the hospital or in nearby facility with experience to perform binocular indirect ophthalmoscopy if needed.
- 3.5 **Inclusion criteria:**
 - 3.5.1 Neonates with birth weight of 1500 grams or less and/ or a gestational age of 32 weeks or less (as defined by attending neonatologist).
 - 3.5.2 preterm neonates less than or equal 36 weeks receiving supplemental oxygen for 50 days or more.
 - 3.5.3 special attention should be paid to larger preterm neonates at risk of ROP who received frequent RBC transfusions or exchange transfusions to treat anaemia of prematurity or Rh haemolytic disease of new-born.
- 3.6 **Timing of first examination:**
 - 3.6.1 Any preterm neonate of gestational age of 27 weeks or less should have the first fundus examination at post menstrual age of 31 weeks.
 - 3.6.2 Any preterm neonate of gestational age of 28 weeks or more should have the first fundus examination at 4-6 weeks chronological age.
 - 3.6.3 Any eligible stable preterm neonate planned for discharge prior to the scheduled fundus examination should have the first fundus examination at the time of discharge.
- 3.7 **Termination of ROP screening:**
 - 3.7.1 In babies who reached full retinal vascularization.
 - 3.7.2 In babies who never developed any ROP , the risk of sight threatening ROP developing once the retinal vessels have reached zone III.
 - 3.7.3 In babies developing ROP which does not meet the criteria for treatment.

- 3.8 The photography session should be conducted on a dedicated day each week or more frequently if specifically indicated. Morning scheduling of imaging sessions allow problems in image acquisition/ transfer to be addressed before any change of shift. In addition, confirmatory BIO examination by the ophthalmologist responsible for oversight of ROP screening can be performed the same day, if warranted.
- 3.9 Each new-born once enrolled in screening should have photography once weekly. This timing allows for continuous monitoring of longitudinal changes and limits the possibility that will inadvertently be dropped from the evaluation rotation.
- 3.10 Any preterm neonate, even without ROP, should be examined at 6 months to 1 year of age for visual acuity testing, alignment check and cyclopeptic refraction.

4. PROCEDURE:

- 4.1 Pupil dilatation is done by using phenylephrine 2.5% and tropicamide 1% eye drops x 2, 15 min apart, instilled 60 minutes before the photography session.
- 4.2 Feeding should be discontinued 2 hours before and after session as part of aspiration precaution guidelines.
- 4.3 Infants should be closely monitored for bradycardia, apnea and tachycardia after dilation and during the photo session.
- 4.4 Alcohol swab is used to clean the lens and should be allowed to dry before subsequent use. 130 degrees lens is used to obtain the images. The lens must be handled with extreme care.
- 4.5 Topical anaesthetic drop is instilled in both eyes, followed by application of a paediatric eyelid speculum. A methylcellulose coupling gel over the cornea is usually recommended. Images should be repeated as needed to achieve adequate quality. A minimum of six image per eye should be obtained: 1- anterior segment image. 2- image of posterior pole centred at the disc. 3- temporal image. 4- nasal image. 5- superior image. 6- inferior image.
- 4.6 If the images are inadequately clear for interpretation as determined by the reader, a repeat photo session is performed within 48 hours.
- 4.7 Once the images are obtained, the nurse in charge enters the patient's data into the KKESH ROP reporting software. This should trigger a notification system to the ROP manager that images are ready for reading and reporting. The manager must confirm receiving the images and assign an ophthalmologist for reading the images and provide a report within 24 hours. The physician responsible for image interpretation should be notified via SMS/ email/ telephone the NICU should receive the report the next day and if not, the ROP coordinator on site should immediately contact the ROP manager to ensure delivery of the report. The sending institution must confirm receiving the report and incorporate it into the patient's chart.
- 4.8 If the images are of inadequate quality for interpretation, an immediate notification to the sending institution should trigger a repeat photography session preferably the same day or within 24 hours.

5. MATERIAL AND EQUIPMENT:

- 5.1 Speculum
- 5.2 Alcohol swab
- 5.3 Retcam
- 5.4 Sterile gauze
- 5.5 Sterile gloves
- 5.6 Surgical mask

6. RESPONSIBILITIES:

- 6.1 Physician
- 6.2 Nurse
- 6.3 Ophthalmologist
- 6.4 Biomedical engineers to ensure machine maintenance







7. APPENDICES:

N/A

8. REFERENCES:

- 8.1 Practical guidelines for screening and treatment of retinopathy of prematurity in Saudi Arabia. Saudi Journal of Ophthalmology.(2018).
- 8.2 KKESH National guidelines for ROP Screening Using Telemedicine.

9. APPROVAL:

	Name	Title	Signature	Date
Prepared by:	Ms. Afrah Saud Al Shammari	NICU Head Nurse		January 05, 2025
Prepared by:	Dr. Falah Nabhan Al Shammari	NICU Quality Coordinator		January 05, 2025
Reviewed by:	Mr. Sabah Turayhib Al - Harbi	Director of Nursing		January 07, 2025
Reviewed by:	Dr. Sarhan Hamdan Al Shammari	NICU Head of the Department		January 08, 2025
Reviewed by:	Engr. Wafi Abdoo Elgaleel	Head of Biomedical Department		January 09, 2025
Reviewed by:	Mr. Abdullellah Ayed Al Mutairi	QM&PS Director		January 09, 2025
Reviewed by:	Dr. Tamer Mohamed Naguib	Medical Director		January 12, 2025
Approved by:	Mr. Fahad Hazam Al -Shammari	Hospital Director		January 19, 2025