



# Results of ROP Screening at 4 Government Hospitals in Pakistan

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## Background

Pakistan has a very high prematurity rate (>15%) and an IMR of 65.8 (2015), with very poor awareness and facilities to prevent, identify and treat ROP. As more pre matures survive, Pakistan is going to experience the 'third epidemic' of ROP (as described By Dr C Gilbert). Thus, Pakistan has a potential of a large premature infant population that can go blind. In 2012, there were only 2 Hospitals, that we were aware of, that had routine screening programs. The Pakistan Retinopathy of Prematurity Education and Research Alliance (PROPERA) was created in 2013 to: create awareness of ROP within Pakistan, create initial screening and oxygen protocol criteria, gather data on disease burden, and establish the PROPERA network in NICUs all over the country to save premature infants from blindness. Here we present the preliminary screening data gathered from these NICUs.

## Purpose

-To assess survival rates and estimate ROP disease burden  
-To assess appropriateness of initial screening criteria

## Methods

Data was collected from four government hospitals in four different cities in Pakistan that joined the network. Initial screening criteria were agreed upon by consensus  
**Gestational age: < 35 weeks or Birth weight: 2 kg or less**  
Neonatologists collected information on gestational age, birth weight, survival rate and identified patients requiring screening. Participating ophthalmologists screened infants for ROP and tracked subsequent follow-up and survival rates.

## Results

### Preliminary Analysis

	Combined Data N=3	Poor Follow-Up* Data N=2	Good Follow-Up** Date N=1	Only Ophthalmic Data N=1
No. of Pats Screened	1446	1027	329	90
Survival Rate	50% inpatient	N/A	60% In + outpatient #	N/A
Follow-Up Rate	N/A	6%	80%	>80%
Any ROP	N/A	N/A	30.5%	40%
Type I ROP	2.6%	1.2%	5.9% ♦	22% ♦

\* No difference in screening rates with a male ROP Coordinator

\*\* Increase in screening rate with a female ROP Coordinator (Inpatient 41 to 63% Outpatient 10 to 80%)

# Additional mortality of 20% in the first ~3 mo after discharge

♦ 30% of Type 1 disease was in patients gestational age > 32 weeks and Birth weight > 1.5 kg

## Conclusions

- Our initial ROP screening criteria seem to be appropriate for Pakistan.
- Type 1 ROP rate of up to 20% was consistent with rates seen world-wide when ROP screening is implemented.
- ROP screening can be successfully performed in Government hospitals in Pakistan but requires a committed neonatologist and ophthalmologist.
- Both screening rates and follow-up rates increased dramatically with the introduction of a young female ROP coordinator.

## Next Steps

**Improve.** Steps are being taken to improve inpatient and out-patient screening rates with consistent and comparable data collection.

**Expansion.** Additional 4 hospitals have started screening and 8 others have shown interest in 5 new cities.

**Prevention.** Implementation of the agreed upon SiO2 (91-94%) is still a major problem due to lack of equipment.

## Pakistan

**Births per year: 6 Million**  
**Prematurity rate: 900,000 (15%)**  
**At risk babies: 450,000 (50% of premature births+)**  
(GA < 35 weeks)  
**Survived babies: 180,000 (40% survival rate+ )**  
**Risk of blindness: 5% (10% Type 1 and 50% blindness without Rx)**  
**Blind children / year: 9-10,000 + estimated**



## PROPERA Network

- **Karachi**  
National Institute of Child Health / Jinnah Post graduate Med Ctr
- **Lahore**  
Lahore General Hospital
- **Islamabad and Rawalpindi**  
Al Shifa Trust eye hospital / Pakistan Institute of Medical Sciences  
Armed Forces Institute of Ophthalmology

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