

# Retinopathy of prematurity

Industrialized (USA)

Latin America

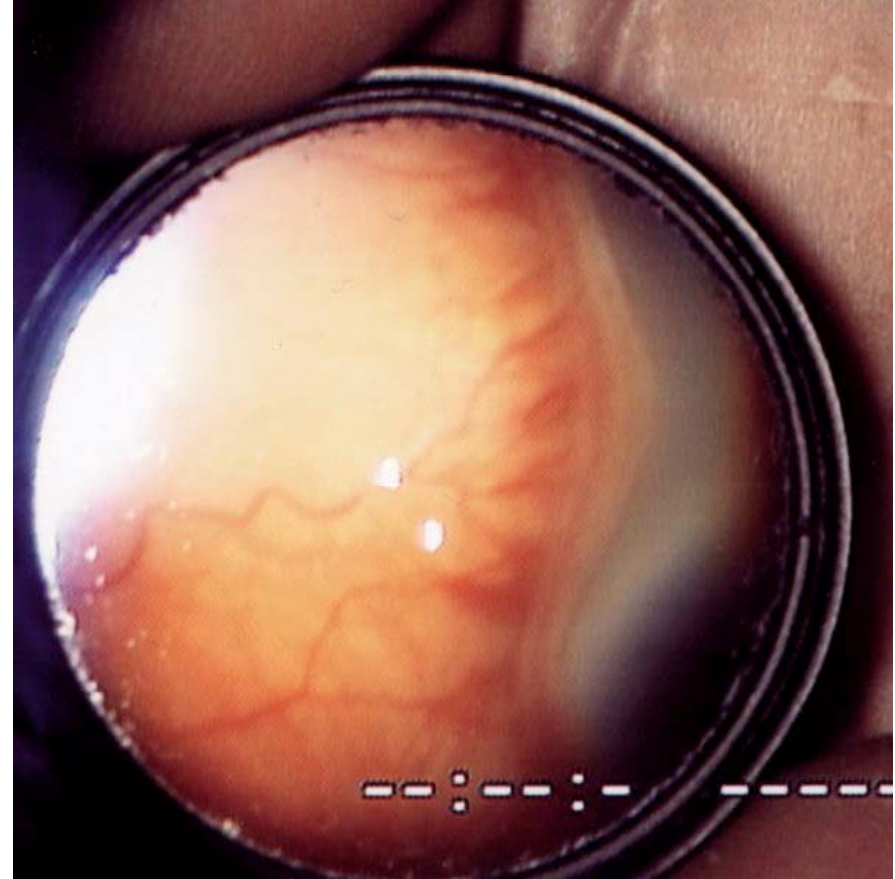
Asia

Africa

# Retinopathy of Prematurity—USA

## Current Situation

- Low risk of ROP blindness ( $\leq 8/1000$ ) due to good neonatal care and ROP screening
- 2<sup>nd</sup> leading cause of childhood blindness
- High cost to individual and community



-Steinkuller et al. Childhood blindness. J AAPOS 1999;3:26-32.

-Gilbert C. Retinopathy of prematurity: A global perspective of the epidemics, population of babies at risk and implications for control. Early Human Development 2008;84:77-82.

# Shortcomings of Current ROP Management

<b>Screening</b>	<b>Traumatic Disruptive Requires special expertise* Many unnecessary screenings Telemedicine limited</b>
<b>Treatment</b>	<b>Destructive Invasive Time-consuming Requires special expertise*</b>
<b>Follow-up</b>	<b>Coordination of care</b>
<b>Prevention</b>	<b>Did someone say prevention?</b>

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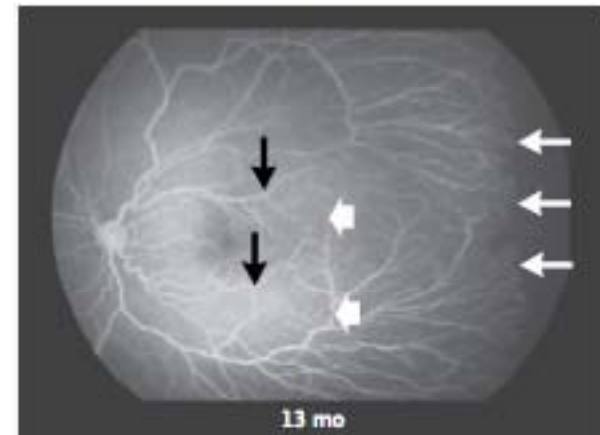
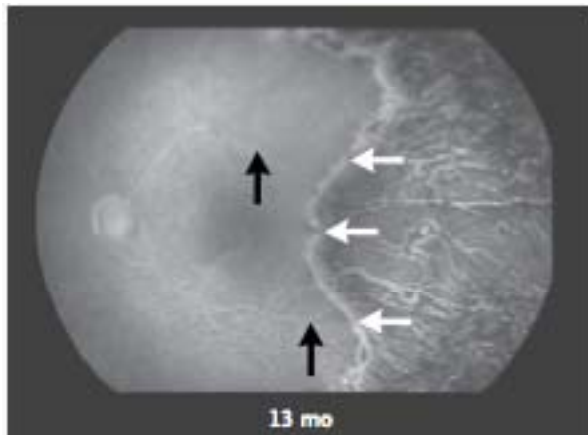
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## Efficacy of Intravitreal Bevacizumab for Stage 3+ Retinopathy of Prematurity

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# Challenges in USA

- ROP remains a major cause of childhood blindness
- Telemedicine may reduce burden of ROP screening, provide better accessibility, and more objective determination of plus disease
- Refining NICU surveillance protocols to minimize number of screenings while not missing any cases
- Treatment with anti-VEGF agents may offer better visual outcomes, but need further study
- Continue to refine supplemental oxygen therapy
- Role of genetics?

## Latin America



Population: 550,000,000

Live births: 10,4/year

Pop < 15 yo: 28-43%

Urban population: 75% (40-94%)\*

Causes of childhood blindness\*\*:

ROP

42,000 premature babies < 1,500 g to  
examine/year

4,200 with severe ROP needing  
treatment/year

cataract, uncorrected refractive errors

PAAO: 26,000 ophthalmologists

Lack of other eye care professionals

\* [www.eclac.cl/Celade/publica/bol63/BD6311.html](http://www.eclac.cl/Celade/publica/bol63/BD6311.html)

\*\* Gilbert C et al , The Lancet 1997;350:12-4

# How do we prevent blindness due to ROP in Latin America ?

## Quality of neonatal care

Quality of services provided

Availability of adequately trained human resources

- nurses, neonatologists

Availability of equipment

- Oxygen monitors, ventilators

Protocols

## Detection and treatment

Availability of adequately trained human resources

- ophthalmologists

Availability of equipment

- Indirect ophthalmoscopes, 28 diopters lens, diode laser

Diagnosis and treatment protocols

## Visual (re)habilitation

*ROP is an indicator of the quality of neonatal care*

# ROP in Latin America: Current situation

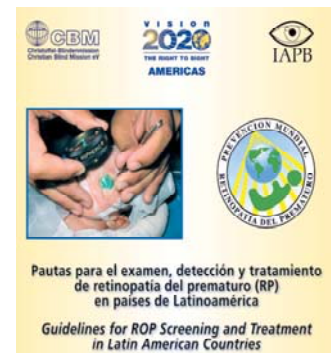
- PAHO (Eye care and CLAP), NGOs, PAAO, SIBEN collaboration
- Regional ROP working group established (IAPB-LA Childhood blindness committee): over 50 ROP workshops since 1997
- National ROP committee , national screening criteria: Brazil, Colombia, Cuba, Ecuador
- National policy MoH: Peru, Mexico, Argentina
- Governmental financial support: Chile, Costa Rica



*Provisional Agenda Item 4.15*

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PLAN OF ACTION ON THE PREVENTION OF AVOIDABLE  
BLINDNESS AND VISUAL IMPAIRMENT





# ROP in Latin America: Challenges

- Wide variation in implementation of NICU facilities
- ROP screening and treatment not available in all NICUs
- Wide variation in implementation of ROP screening programs
- Transportation problems
- Screening criteria not established in several countries: different at-risk population
- Availability of treatment equipment (laser/cryo)
- Training health care personnel
- Training ophthalmologists to examine and treat
- Information to parents
- Follow-up/low vision services/ affordable glasses
- Monitoring & evaluation of implemented programs
- Government support - sustainability



Courtesy: Dr C Zuluaga

# ROP in Asia: screening and treatment

- Specific protocol for screening in India exists
- Interested and trained doctors and staff are getting better
- Quality care is available
- Magnitude of the problem growing (urban areas)



# RoP in Asia: Challenges

- Implementation of the programme is not made mandatory
- Not uncommon to see stage 5 ROP
- Quality NICU care is not uniform
- No good networking exist between NICU staff and the ophthalmologists
- Awareness among NICU staff, parents almost nil
- Involvement of Govt health care system??