

**164 Improving global eye health: Beating the odds for neglected and emerging diseases around the world**

Sunday, May 07, 2017 5:15 PM–7:15 PM

Hall G Symposium

**Program #/Board # Range:** 1165–1170

**Contributing Section(s):** Anatomy and Pathology/Oncology, Clinical/Epidemiologic Research, Cornea, Eye Movements/Strabismus/Amblyopia/Neuro-Ophthalmology, Genetics, Glaucoma, Immunology/Microbiology, Low Vision, Multidisciplinary Ophthalmic Imaging

**Program Number:** 1165

**Presentation Time:** 5:15 PM–5:35 PM

**Zika: Emerging diseases and eye health**

*Rubens Belfort.* federal univ sao paulo, São Paulo, Brazil.

**Presentation Description:** Zika virus (ZIKV) belongs to the *Flaviviridae* family and the *Flavivirus* genus, being closely related to other flaviviruses, including dengue fever (DFV), yellow fever, and West Nile viruses.

The most common route of ZIKV transmission is via the *Aedes aegypti*, however, other routes of ZIKV transmission have been reported, including sexual intercourse, breast-feeding, and perinatal transmission, since alive virus has been detected in human saliva, blood, semen, and urine.

It is mandatory to rule out other congenital infectious disease such as toxoplasmosis, rubella, syphilis, cytomegalovirus and human immunodeficiency virus (HIV) as well as vitamin B deficiency, genetic diseases and use of alcohol or illegal drugs and consanguinity of parents.

Different fundus patterns were described, showing structural abnormalities in the retina, choroid and optic nerve, with disappearance of normal tissues and changes in the pigmentary patterns. They are most frequent at the macula and posterior pole and include chorioretinal atrophy, focal pigment mottling, and optic nerve abnormalities. Recent studies approaching ocular findings in infants with CZS did not identify any sign of active inflammation, vasculitis or uveitis. In all patients the vitreous was clear without abnormalities. Also ocular lesions have been noticed in the cornea, iris and lens as well as congenital glaucoma.

All children with microcephaly of mothers presumably infected with the ZIKV during pregnancy should undergo at least one ocular examination that include an ocular external exam and indirect ophthalmoscopy under mydriasis.

**Commercial Relationships:** Rubens Belfort, None

**Program Number:** 1166

**Presentation Time:** 5:35 PM–5:55 PM

**Eye health for aboriginal populations**

*Hugh Taylor.* Melbourne School of Population and Global Health, The University of Melbourne, Carlton, VIC, Australia.

**Presentation Description:** Australian Aboriginal and Torres Strait Islander people have had six times as much blindness and three times as much vision loss as non-Indigenous Australians. Although trachoma remains an issue in some more remote communities, good progress is being made towards the elimination of trachoma by 2020. With up to 94% of vision loss being preventable or treatable, attention has focused on the development of regional models of co-ordinated eye care, with services planned according to population-based needs. This has involved bringing together the various regional stakeholders including primary care, hospitals and eye care providers to plan and co-ordinate resources. Particular attention has been devoted to the need for annual eye exams for those with diabetes. They form three quarters of the Indigenous adults who require an annual eye

exam. However, in addition to referrals for retinopathy, people with diabetes may require glasses or cataract surgery, and these referral pathways can be used by those without diabetes. The co-ordinated provision of eye care involves multiple steps and a “Roadmap” has been developed with 42 recommendations to provide sustainable and effective eye care service delivery. Significant progress has been made to date and examples of which will be presented.

**Commercial Relationships:** Hugh Taylor, None

**Program Number:** 1167

**Presentation Time:** 5:55 PM–6:15 PM

**Eye health in sub-saharan Africa: A moving target**

*Paul Courtright.* Kilimanjaro Centre for Community Ophthalmology International RSA, Kensington, MD.

**Presentation Description:** The presentation will address the changing landscape regarding eye health in sub-Saharan Africa including our evolving understanding of the epidemiology of eye conditions, mechanisms to successfully address them, and challenges in reducing blindness and visual impairment. Evidence from operational research, that should be informing decisions regarding human resources for eye health and strategies for effective and efficient management will be reviewed.

**Commercial Relationships:** Paul Courtright, None

**Program Number:** 1168

**Presentation Time:** 6:15 PM–6:35 PM

**Trachoma: where are we with elimination?**

*Sheila West.* Ophthalmology, Johns Hopkins Wilmer Eye Inst, Baltimore, MD.

**Presentation Description:** Trachoma, the leading infectious cause of blindness world-wide, is the target of a massive effort at elimination by the year 2020. The World Health Organization recommends the SAFE strategy for countries to adopt for trachoma control: Surgery, Antibiotics, Facial cleanliness, and Environmental improvements. Research on the best approach to trichiasis surgery has improved outcomes, and several findings will be presented on post surgery use of azithromycin, use of absorbable sutures, and two surgical approaches. With the donation of millions of doses of Azithromycin, ongoing research to optimize mass drug administration for trachoma endemic regions has supported to date the annual single dose therapeutic approach. Environmental change component initially focused solely on latrines, but research does not support this approach, and likely a multi-faceted effort to improve water access and hygiene will be more beneficial. Several countries are in the process now of verification of elimination, and with three years to go, we need a critical look at achieving elimination goals.

**Commercial Relationships:** Sheila West, International Trachoma Initiative (F)

**Support:** NIH grant EY0022584

**Program Number:** 1169

**Presentation Time:** 6:35 PM–6:55 PM

**International collaboration addresses disparity: Learning from retinoblastoma**

*Brenda L. Gallie<sup>1,2</sup>.* <sup>1</sup>Dept Ophthalmology and Vision Science, Hospital for Sick Children, Toronto, ON, Canada; <sup>2</sup>Health Informatics Research, Techna Institute, University Health Network, Toronto, ON, Canada.

**Presentation Description:** Retinoblastoma is a complex genetic cancer, annually affecting 8000 newly diagnosed children. Worldwide 70% die, despite early diagnosis and current medicine capable of saving their lives, eyes and often vision. Rarity and global distribution have precluded the gold standard of clinical research.

## ARVO 2017 Annual Meeting Abstracts

Now, a new generation of collaborative parents, survivors, doctors, scientists and others, seek equity for all children affected by retinoblastoma. Patient groups and social media strengthen the voices of survivors and advocates. Equity may depend, not on new drugs, but on research to define, measure and address obstacles to access and understanding.

The 1RBW map (<http://www.1rbw.org>) built by Dr. Helen Dimaras is a concrete example. Worldwide centres with expertise in retinoblastoma contribute details of their personnel, equipment, and numbers of patients, etc. Commonly, families go directly to the Internet when they observe a child's white pupil, and discover the diagnosis is retinoblastoma. The 1RBW map provides a direct path between families and expert knowledge, avoiding previous, often-lethal, delays imposed by unaware bureaucracies.

eCancerCare<sup>retinoblastoma</sup> (eCC<sup>rb</sup>) point-of-care database ([eccrb.technainstitute.com](http://eccrb.technainstitute.com); demo-user/Demo1234), developed and used by the SickKids for many years, is now accessible everywhere. Retinoblastoma Sites join and participate in governance, quality assurance, and research. With guardian consent for clinical use, each encounter is documented real-time. The opening view of the patient's record features the timeline of clinical encounters and treatments, with details accessible by point and click. Digital retinal drawings precisely localize tumors, ocular features and focal treatments, with backup images. To assure high quality care, fully identified data is securely available to those in the circle of care of each child, including parents and patients. With separate consents, coded data is provided to Site-specific and global research; aggregated data will provide unprecedented knowledge of global trends. Ultimately, eCC<sup>rb</sup> will drive a learning health care system for the benefit of all children with retinoblastoma.

These new directions in retinoblastoma, which can be easily applied to other rare diseases and disparities, illustrate the power of collaborative, patient-driven research and innovative Internet technologies.

**Commercial Relationships:** Brenda L. Gallie, None

**Support:** Eye Care Foundation; Graham Farquharson One RB World Fund, Toronto General and Western Hospital Foundation; Princess Margaret Cancer Foundation

**Program Number:** 1170

**Presentation Time:** 6:55 PM–7:15 PM

**Global networks to decipher genetic eye diseases**

*Tin Aung*<sup>1,2</sup>. <sup>1</sup>Glaucoma, Singapore National Eye Center, Singapore, Singapore; <sup>2</sup>Singapore Eye Research Institute, Singapore, Singapore.

**Presentation Description:** With rapid advances in the field of genetics, we are increasingly better at finding disease-causing genes, understanding their functions and role in disease and eventually developing methods for correcting defects. Researchers are increasingly involved in large multi-centre collaborations to make such discoveries in the field of genetics. Collaborations involving researchers from multiple sites in different countries and continents are very complex to organize. Potential hurdles and issues to consider include ethical approval, phenotyping of patients, data collection, transport of samples, genotyping and analysis and dissemination of study results. This talk will discuss the setting up of such networks and ways of anticipating problems and navigating around hurdles that arise.

**Commercial Relationships:** Tin Aung, None