



## **APTOS Roundtable on Tele-Ophthalmology Development**

**Theme: AI Solving today's problems and opening new frontiers**

September 21, 2019, 2:15 – 3:15pm

Rajendra Hall 7 & 8, ITC Grand Chola, Chennai

The following is a brief guideline on what can be covered under this theme:

1. **Today's problems:** Today we face a lot of challenges in eye care services. A lot of them are in the realm of delivery of care, such as:

**Access:** Due to concentration of eye care in large urban centres, there is a widespread paucity of care in other areas, with many not getting it till advanced stages of vision loss. The sub-specialty care is even more concentrated making it even less accessible

**Affordability:** Oftentimes, the cost of accessing care is more than the fee for the clinical services. This is not recognized and our focus has always been reducing the clinical costs (even though we haven't been successful in this either). We need to look at "affordability" in a holistic manner.

**Comprehensiveness:** In most settings, the care is largely limited to cataract, refractive errors and common conditions like red eye. Other relatively less common conditions are neglected for lack of expertise or appropriate equipment.

**Management:** The lack of it is probably the leading cause of blindness or inadequate eye care. In LMICs, eye care resources are scarce and yet an earlier estimate, placed the utilization of such scarce resources at 25%. If with better management, the utilization can reach optimum levels of over 75%, much of the eye care needs would have been addressed.

2. **Opening new frontiers:** With widespread availability of affordable broadband, smartphones in everyone's hands, use of EMR and emergence of technologies like AI, the possibilities are becoming limitless. In the past, all the analytics had significant time lag and hence was essentially backward-looking. We are now able to access real-time data. With the advent of technologies like Big data, Artificial Intelligence and Machine Learning we are moving into the era of predictive analytics. It is for us to visualize now how we can harness this.

**In delivering clinical services:**

- What problems in Ophthalmology are best suited for leveraging AI?
- Can we bridge the competence gap between various providers?
- How can we create easy access to high quality data for AI training?



- Can we predict outcomes at individual levels and how do we use such information?
- Can we know ahead of time of those patients who are unlikely to comply?
- Can care be made available closer to patients' homes without compromising quality of diagnosis or outcomes?
- Can exceptions or deviations be identified in real-time so that the focus can be on what is not working rather than managing the routine or what is working?

***On the management front:***

- How can we integrate algorithms with multiple competitive devices?
- If you have a safe and effective algorithm, which is the best place to deploy it first to have a sustainable impact?
  - Screening protocol vs Staff performance

***Building the eco-system:***

- What new interfaces are required in the various equipment to seamlessly exchange data and make them as "smart equipment"?
- How to set cut offs for AI performances? Should it be country specific? Would a consortium help?
- What are the main problems preventing mass market adoption?
- What policies need to emerge including the ones relating to liability, to ensure that such developments will continue to serve humanity?