

# THE DICOM 2013 INTERNATIONAL CONFERENCE & SEMINAR

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## *Enabling Mass Eye Screening – Tele-Ophthalmology Way*

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**Why Tele-Ophthalmology?**

**Different Models in Tele-Ophthalmology**

**How 3nethra enable these models**

**Standardization of Imaging**

**Conclusion**

# Why Tele-Ophthalmology?

## The Problem

- Blindness is a Global threat to health and productivity
- Of the 39 Mn blind people in the world **12 Mn** live in India
- Africa has approximately **19%** of the world's blindness
- **80%** blindness caused due to –
  - *Cataract / Glaucoma / Refractive Errors/ Diabetic Retinopathy/AMD*
- Of the **60 Mn** Diabetic patients in India **20%** will develop diabetic retinopathy



**80% of blindness can be prevented if pre-screened**

## Challenges

- Scalability – Low Patient-to-Ophthalmologist ratio; 1:70000 in India
- Affordability – Expensive devices which require trained ophthalmologist
- Rural reach – Only 7-10% of the people are screened on time
- Awareness – Lack of awareness about detecting eye disorders early

**Tele-Ophthalmology is the only solution to bridge the gap**

# Diabetes – Ticking Time Bomb

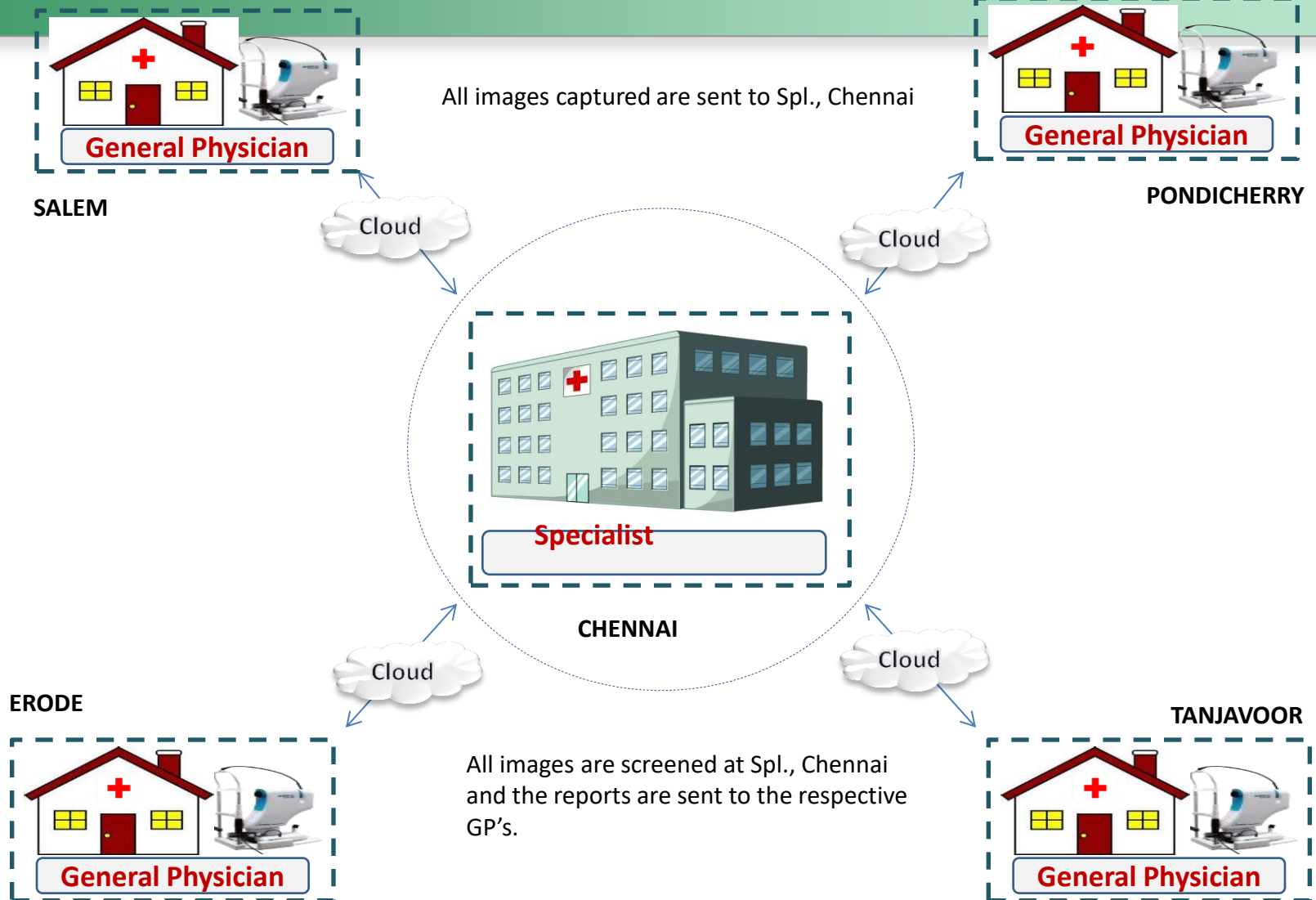


Region	2010		2030		Increase in number of people with diabetes
	Number of people with diabetes	Prevalence of diabetes	Number of people with diabetes	Prevalence of diabetes	
	Millions	%	Millions	%	%
Europe	55.2	6.9	66.2	8.1	20.0
North America and Caribbean	37.4	10.2	53.2	12.1	42.4
Middle East and North Africa	26.6	9.3	51.7	10.8	93.9
South and Central America	18	6.6	29.6	7.8	65.1
Western Pacific (incl. China)	76.7	4.7	112.8	5.7	47.0
Southeast Asia (incl. India)	58.7	7.6	101	9.1	72.1
Sub-Saharan Africa	12.1	3.8	23.9	4.7	98.1
<b>Total (average)</b>	<b>284.6</b>	<b>(6.4)</b>	<b>438.4</b>	<b>(7.7)</b>	<b>54.0</b>

# Different Models in Tele-Ophthalmology

- **Large Institutions connecting their Hub & Spoke**
- **Individual Doctor**
- **Non Specialist & Specialist**
- **Operating in a larger telemedicine network**

# Multi-Hub Connection



# Connecting the Specialist

**A. Images of eye captured at GP's office**

High Foot  
Fall GP's



NOTIFICATIONS:

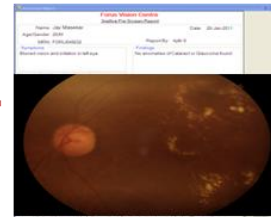
1. by SMS
2. by EMAIL

**B. Images sent to SN ophthalmology panel for analysis**



**D. Report printed and given to patients**

**C. Ophthalmologist access studies and provides remote diagnosis**



*Cases requiring treatment are referred to SN alumnus in the respective cities for treatment. The patient gets complete treatment ( SN alumnus offers discounts to these patients than their conventional prices )*

# How 3nethra can help solve the problem

**3nethra**  
A Forus Health Product



**A single , intelligent, integrated, pre-screening ophthalmology device that**

- Is Non-invasive
- Does not require dilation
- Is Portable & affordable
- Can be operated by a minimally trained technician even in the absence of an ophthalmologist in a rural environment

## **Detects**

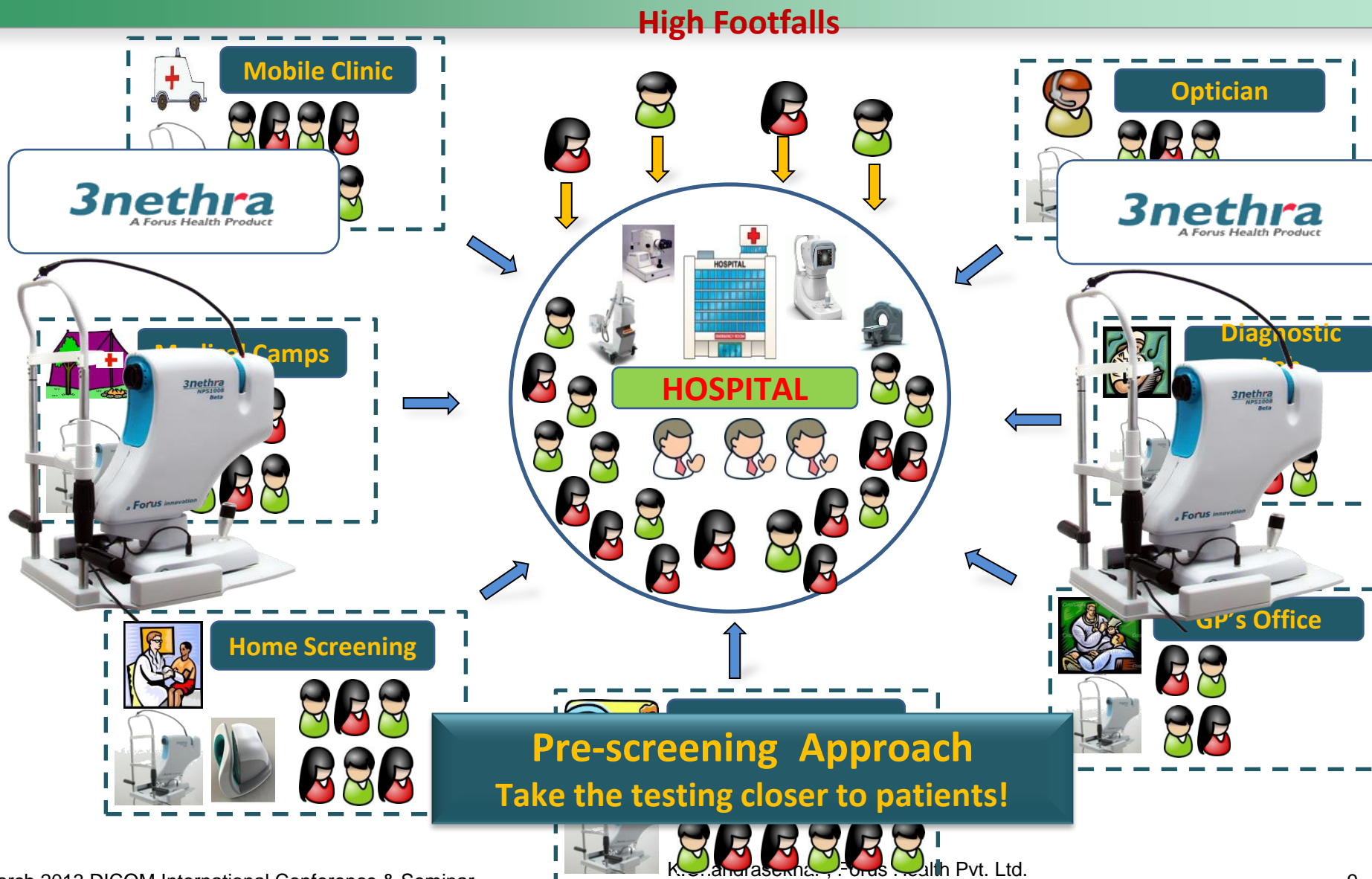
- 5 major ailments of the eye automatically (cataract, diabetic retina, glaucoma tools, cornea issues, gives cylinder ,axis and spherical measurements) and provides a consolidated pre-screening report.

## **Has integrated**

- Telemedicine** and **Data centre** capability to connect the entire eye care ecosystem and offer comprehensive eye care

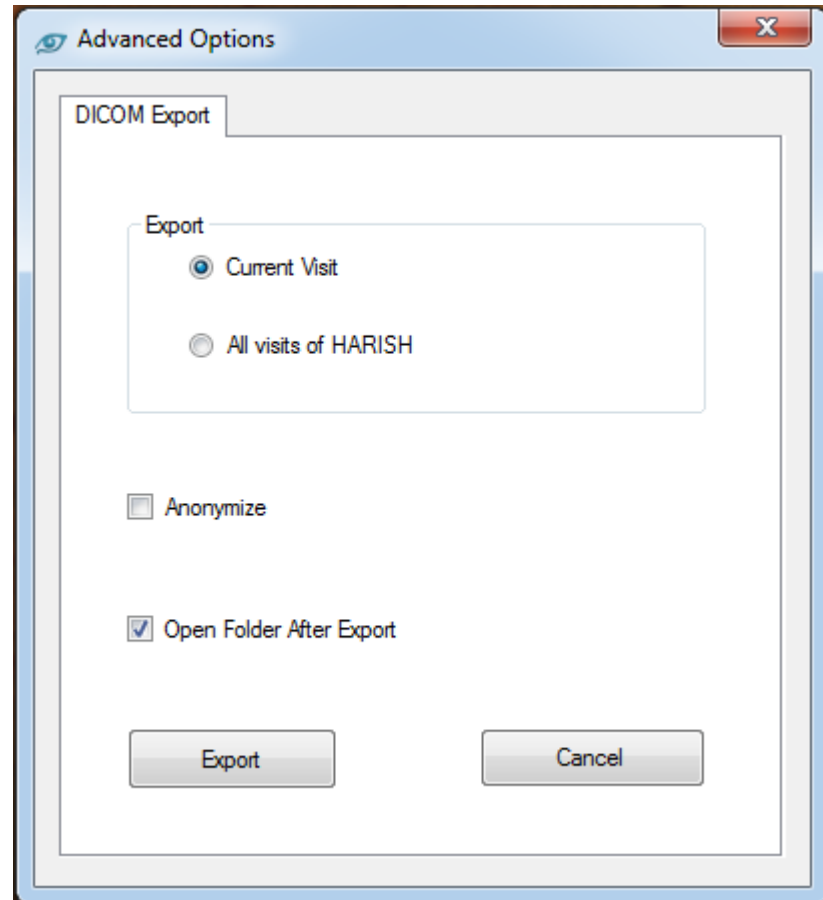


# How Screening solve the problem



# DICOM compatible

- 3nethra is capable of converting images to DICOM standard.
- Main features include:
  - Batch conversion (Single Visit/All Visits)
  - Anonymization



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***Thank you for your attention !***