

Costing & Sustainability of DR Programs

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Aravind Eye Care System

COSTING-Framework

- Since “DR services” is predominantly non-surgical, the costs specific to it would be similar in tertiary & secondary levels
- Could be costlier in tertiary centres on account of fancier equipment and more expensive HR
- DR is not a stand-alone service and most Equipment/HR will not be specific to DR – so marginal costing approach is more realistic



Costing approach

- DR service is a mixed bag
 - for most part routine eye exam
 - Some investigations
 - Few requiring laser and even fewer surgery
- Predominantly fixed cost (though intravitreal injections are now increasing as treatment in case of Diabetic Macular Edema)
- So costing of the service for a period (year) is more meaningful than for each unit of service



Cost Elements

- Equipment
- Training
- Space

Cost of capital &
Depreciation

- Human Resources
- Case finding
- Service Delivery
- Equipment maint.

Cost of providing
care

Annual cost of
providing
DR Services



Basis for Costing

EQUIPMENT

- Indirect Ophthalmoscope
- 20 D & 78 D Lenses
- Fundus Camera with fluorescein capability
- Laser with all delivery systems

STAFFING

- Ophthalmologist (100%)
- Nurse/Oph. Asst. (100%)
- Counsellor (100%)
- Community worker (50%)
- Technician (10%)



Annual Cost Estimate

(Based on Aravind Costs)

- Equipment (\$ 50K)
- Training (\$ 1K)
- Space (\$ 0)

Cost of capital @ 12% (\$ 6K) &
Depreciation @ 20% (\$ 12 K)

- HR & O/H (\$ 32 K)
- Equip. Maint. (2 K)
- Case finding (\$ 7 K)
- Supplies (\$ 1 K)

Annual Operations
Cost (\$ 42 K)

Annual cost
\$ 60 K
(\$ 240 a day)



Financial Viability

Earning about \$ 250 a day through DR Services

Procedure	Fee (Rs.)*	Fee (\$)	n
Outpatient Exam	50	1	50
Fundus Photo/Investigations	400 – 600	8	12
Laser sessions (per eye)	1000	16	6 (3 persons)
Estimated Revenue			\$ 242

* Fee charged at Aravind

Challenge:

How to get 50 diabetics to walk into the clinic day after day with about 25% of them being new patients to the clinic



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Sustainability Strategies

Experiences from
Aravind Eye Care System

Sustainability of DR Programs & Scaling

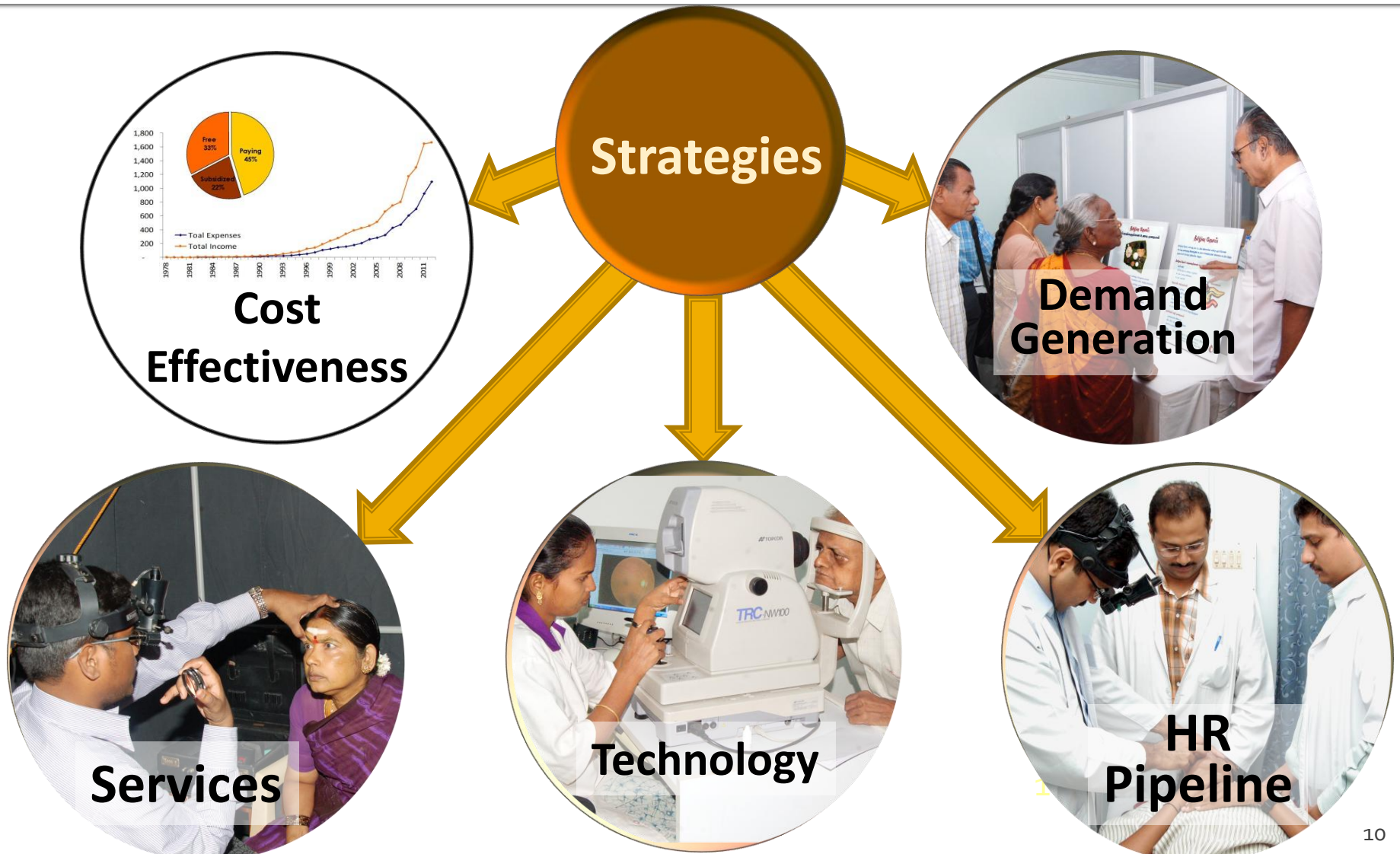
- It has got to work financially – for the patient & provider
- The team specific to DR services have to be fully engaged
- The equipment have to be optimally utilized

**Key to make all of this happen is
patient volumes**



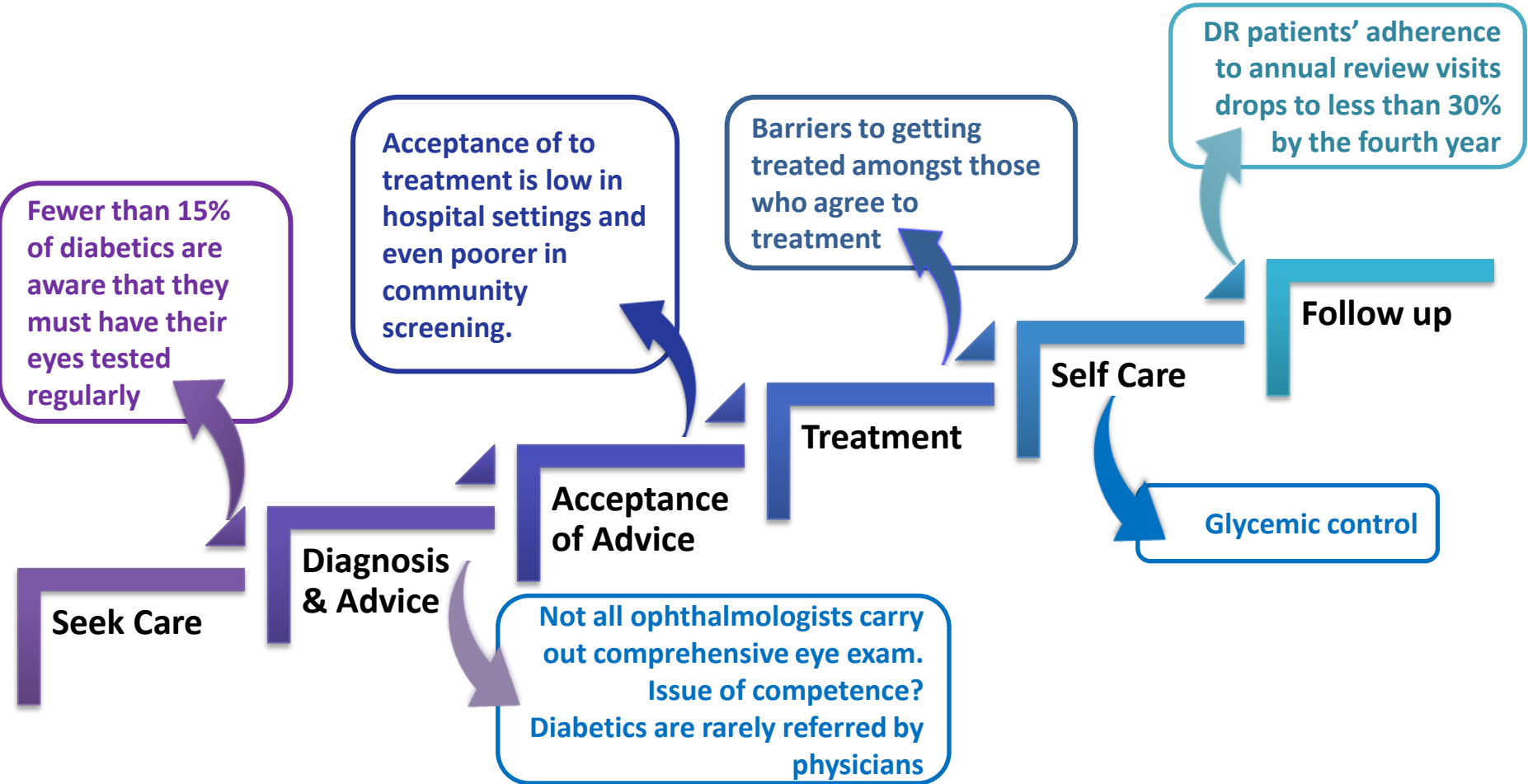
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Sustaining DR Services

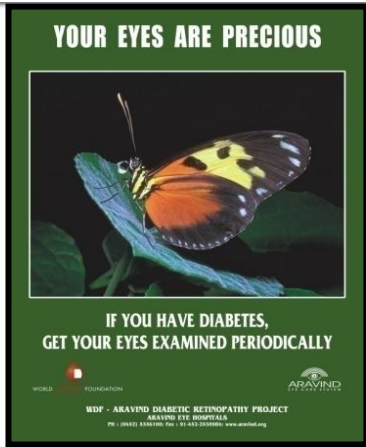


Demand

The steps for effective outcome of a DR Program



Awareness Creation in the Community



Posters

Instructions to Diabetic Patients

1. Diabetes affects eyes, brain, heart and kidneys.
2. Diabetics are twice as likely to develop eye problems than non-diabetics.
3. The most common eye complication is diabetic retinopathy, involving the blood vessels of the retina.
4. Dilated eye examination by eye doctors can detect blood vessel changes in the retina directly. It is an indicator of similar changes occurring in brain, kidneys and heart.
5. The onset of diabetic retinopathy is related to duration of diabetes.
6. Seventy to eighty percent of diabetics will develop diabetic retinopathy in 25 years.
7. The risk of blindness is 25 times higher in diabetics.
8. Diabetic retinopathy is often symptomless until deterioration of vision occurs.
9. Early detection and Laser treatment for diabetic retinopathy significantly reduces risk of vision loss.
10. Laser treatment will help to retain the vision at the most and will not help to regain lost vision.
11. Laser treatment facilities are available in many cities like Chennai, Madurai, Tiruch, Coimbatore, Tirunelveli and Thendri.
12. All diabetics should have periodic eye examinations by an eye doctor, to prevent loss of vision due to diabetic retinopathy.

For Further details Contact

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 Lions Aravind Institute of Community Ophthalmology

Handbills and Stickers

WORLD DIABETES DAY NOVEMBER 14, 2002

**Diabetes affects the eye
 Consult Your ophthalmologist**

LIONS ARAVIND DIABETIC RETINOPATHY PROJECT
 ARAVIND EYE HOSPITAL, MADURAI, THENI, TIRUNELVELI AND COIMBATORE

Public Exhibition



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Press Meeting



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Awareness creation in Targeted group

- Seminar for Medical shop & lab personnel
- Seminar for Sedentary workers



Awareness creation in Individuals

- Patient counselling



Patients & Doctor interaction



World diabetes day (14th November)

- Global Diabetic Walk
- Diabetic detection & Diabetic Retinopathy camp
- Seminar for general public
- Seminar for School children
- Exhibition
- Live Media coverage



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Human Resource Pipeline

Training to deal with D R

Name of the training	Duration	Offered from	Total Trained
Long Term Fellowship in Retina Vitreous	2 years	1992	(175+28) 203
Short Term Courses			
In Collaboration with SSI, Lions			
Indirect Oph.	1 month	1994	163
Indirect Oph. & Lasers	2 months	1998	93
Lasers in D R	2 months	2000	586
Total Short term trainees			842

Technology Making it Affordable

Low Cost fundus imaging in Vision Centres

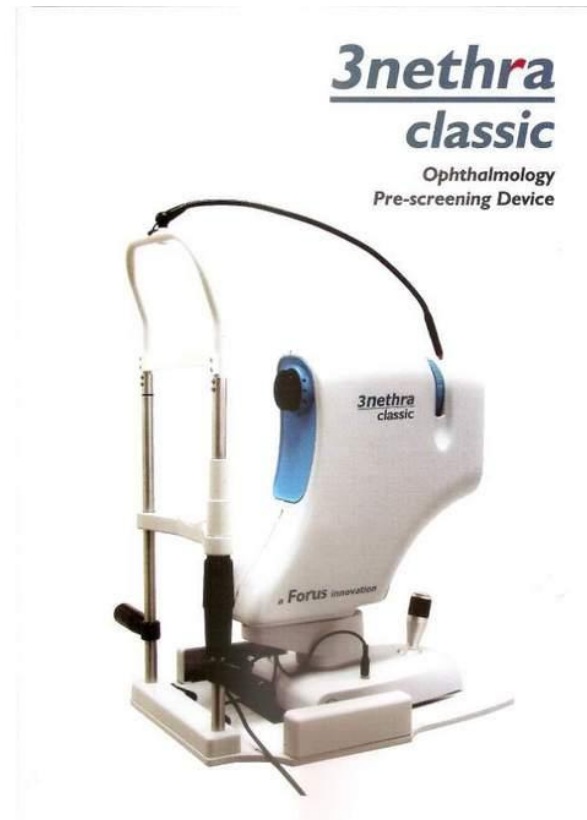


Affordable Technology

AUROLAB



FORUS HEALTH



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Leveraging IT Technology









Aravind Vision Center - Alanganallur

MR NO: p9087 Patient Name: PITCHAI MANI Age : 28 Sex: Male

Visited Date: 18/04/2009

Village : ALAGAPURI Eye Type:

Visited Date	Eye Images				
18/04/2009	<table border="1"><tr><td>Right</td><td></td></tr><tr><td>Left</td><td></td></tr></table>	Right		Left	
Right					
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Services

DR Community Screening



25

DR camp performance 2012-13

Exclusive DR screening camps	Aravind, Madurai	Aravind, Theni
No. of camps conducted	29	28
Patients screened	4,899	2,634
Diabetics identified	2,693 (55%)	1,661 (63%)
DR identified	347 (13%)	192 (12%)

Services – reaching out

THE HINDU

TUESDAY, AUGUST 19, 2008

Diabetic retinopathy camps to be organised at government hospitals

From August 19 to November 24 in association with the Aravind Eye Hospital

Staff Reporter

MADURAI: To attend to eye-related problems of rural poor caused by diabetes, exclusive diabetic retinopathy camps will be organised at government hospitals in the district from August 19 to November 24.

According to Tamil Nadu Health Systems Project District Coordinator, P. Palanikumar, the camp has to be conducted as the number of

diabetic retinopathy cases in the district is on the rise due to lack of awareness among people. The screening camp would help to identify the ailment, he said.

As patients from villages did not have the wherewithal to get exposed to sophisticated diagnostic facilities used to detect the medical problem, which they had been enduring for a long time, they resigned to their fate and let the disease take the better of

them.

The camp would be organised in association with the Aravind Eye Hospital as a public-private initiative. The Aravind Hospital had promised to bring in modern diagnostic facilities to detect and provide treatment for cases with diabetic retinopathy, said Dr. Palanikumar.

The camps would be conducted at Government Hospital, Usilampatti, on August 19; at Tirumangalam GH on Au-

gust 27; at T. Vadipatti GH on September 8; at Sholavandan GH on September 17; at Melur GH on October 22; at Peraiyur GH on November 12 and at Mannadimangalam GH on November 24.

The first camp would be held at the district headquarters hospital, Usilampatti, on August 19 between 9 a.m. and 1 p.m., since the day was marked for diabetes and hypertension outpatients, he said.



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DR Screening at Theni District (working with Primary Health Centres)

Period: (20.8.2012 to 31.5.2013)	
No. of Primary Health Centres	31
No. of Diabetics examined	879
No. of Existing DR patients	66
No. of new DR patients identified	45

Diabetic Retinopathy: Challenge: Case detection & Follow-up



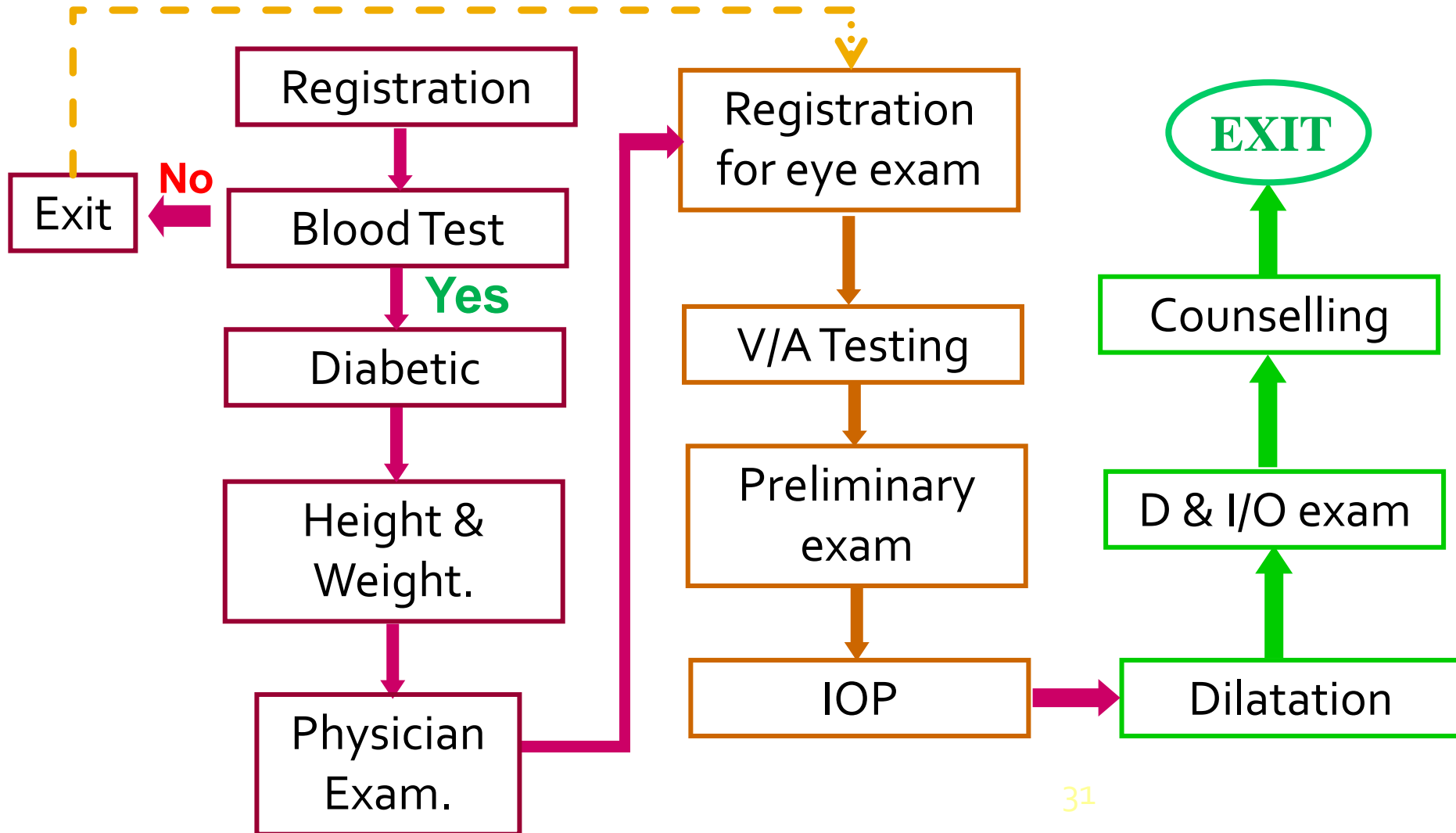
The Strategy

- Shift case detection & routine follow-up to Physicians
- Patient Registry for effective Treatment & Follow-up

Proof of concept – that shift is possible (fixed facility)



Patient Flow protocol – Standardize (outreach & hospital)



Monitoring

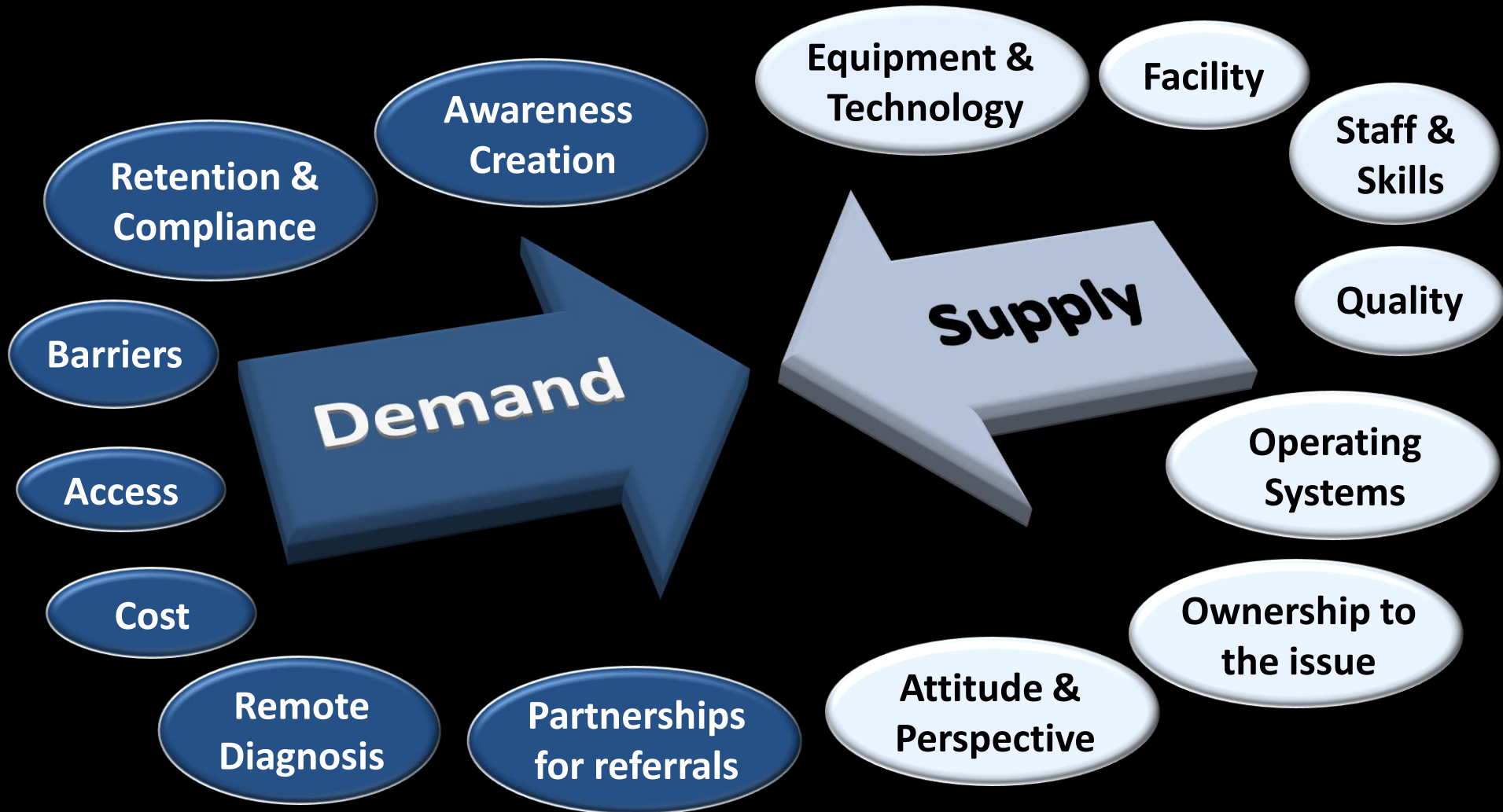
- **Hospital level** - Metrics can be developed to monitor:-
 - Number of New diabetics identified
 - % of diabetics undergone annual fundus examination
 - % of diabetics compliance to treatment and follow-up
 - % of diabetics compliance to referral from outreach/remote screening
 - Developing “Diabetic Eye Registry”
- **Program level** – Understand program impact
 - Referrals from community
 - District level coverage



Aravind data: 2012

Particulars	Aravind Madurai	Aravind Theni
Paying OPD (New cases):	205,948	41,741
Diabetic identified	16,278 (8%)	4,659 (6%)
DR diagnosed	1,575 (9.7%)	650 (14%)
Laser/Injection and Surgery:		
Laser treatment (PRP/Focal/Grid)	7,664	311
Injection (Avastin, Tricort, OZURDEX, Lucentis)	2,057	-
Surgery (Vitrectomy – Diabetic cases)	475	-

Conclusion – Sustaining DR Program Needs comprehensive approach



How to – manual

(developed with support from Sight Savers & Lions)

Guidelines for the Comprehensive Management of Diabetic Retinopathy in India

A VISION 2020 The Right to Sight INDIA Publication

Developed by
ARAVIND EYE CARE SYSTEM





“Intelligence & Capabilities are not enough. There must be the joy of doing something beautiful..”

- Dr. G. Venkataswamy