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CASE STUDY

IIM-CALCUTTA · ARAVIND EYE CARE SYSTEM

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ARAVIND EYE CARE SYSTEM – AN INTRODUCTION:

The Aravind Eye Care System, started as an eleven-bed eye clinic in 1976, has now grown to become the world's largest eye care provider. During the last four decades over 46 million out-patient visits have been handled and over 5.5 million patients have undergone surgery or laser procedures. Over 60% of these are performed either free or steeply subsidized for the patients. Aravind, with its mission to "eliminate needless blindness" has been able to achieve this scale by focusing on the "non-customers" (who have the need but not seeking care) with the principle of providing large volume, high quality and affordable services in a financially self-sustainable manner. Much importance is given to ensuring that all patients are accorded the same high quality care and service, regardless of their economic status.

Aravind's innovative eye care delivery system has been recognized as a sustainable model for other developing countries. Aravind is a WHO collaborating centre and has received several prestigious awards including the Champalimaud Vision Award, the Gate's Award for Global Health and the Conrad N Hilton Humanitarian Prize.

THE CASE:

Aravind has a successful delivery model for reaching patients who experience visual impairment - as in the case of cataract or refractive error. However, there are several other eye conditions that do not show any symptoms in the early stages. Most of these lead to irreversible loss of vision and can be effectively treated or controlled if diagnosed at the early stages. Two such diseases are Diabetic Retinopathy and Retinopathy of Prematurity.

Diabetic Retinopathy (DR): India has to contend with a fast-growing above 40 population, and a high prevalence of diabetes. This increasingly puts pressure on the health care system to deal with such chronic conditions. This holds true for eye care as well. Diabetic Retinopathy (DR) is a complication that affects about 20% of the diabetics. DR affects the blood vessels in the eye's retina (the light-sensitive layer at the back of the eyeball) and can lead to irreversible loss of vision. While DR cannot be cured, vision loss can be prevented if detected in the early stages. As it is symptomless in the early stages, diabetic patients do not seek care until it is too late.

Retinopathy of Prematurity (RoP): Thanks to the government initiatives and improvements in neonatal care, premature and underweight babies now have better survival rates. However, as the treatment often requires supplemental oxygen, there is a risk of oxidative stress which can cause the development of several neonatal diseases including retinopathy of prematurity (ROP) - a condition where the retina of the eye is affected and can lead to irreversible vision loss. There are other reasons as well for developing RoP. In general babies born within a gestation period of 31 weeks or less and babies with birth weight of 1250 g or less are at risk and should be screened for RoP within the first few weeks after birth. Here again early intervention helps in curing the condition and is a relatively simple intervention of doing a laser procedure.

THE CHALLENGE:

As these diseases are symptomless in the early stages, it is challenging to reach these patients on time to provide effective treatment. Eye care providers have the possibilities of reaching out to such patients, through two routes:

- **Communicating directly to the patient:** Through public awareness campaigns directed towards a specific areas where such patients can be reached. In this case it would be to reach the diabetic patient or the parents of premature/underweight babies.
- **Building a referral mechanism:** These patients can also be reached through other medical intermediaries who more naturally engaged with them. In this case: diabetologists or neonatologists respectively.

Given the absence of symptoms in both cases, "opportunistic screening" is the current screening method. Eye care providers have begun to reach out through Diabetologists and Neonatologists to do the first round of screening. Today, the patients require a fundus examination (an examination of the inside of the eye) by a trained ophthalmologist to be screened for these conditions.

The challenge lies in that that ALL diabetics and ALL low birth weight children need to be screened for these conditions. To some extent telemedicine is being used for screening for diabetic retinopathy. Retinal photographs are electronically captured and sent to ophthalmologists who are able to diagnose the presence of the disease; so that only those confirmed to have DR need to visit an ophthalmologist. However, this is still not a commonly integrated service in diabetologists clinics. But to screen for RoP, ophthalmologists need to perform an examination of the baby's eyes after dilatation. Again this is not a mainstream procedure yet. Given the number of ophthalmologists, and fewer trained for retinal examination, effective screening for these conditions is a challenge.

EXPECTED OUTCOMES:

At the end of this project, you are expected to have

- Identified stakeholders and target groups who should be involved for effectively reaching the patients early
- Researched the nature of diabetic and neonatal services in both urban and rural settings
- Designed an intervention to reach these target audiences
- Designed the screening and referral mechanism of patients for these conditions

For this programme to be successful, patients with these conditions should reach an eye doctor only after the presence of the disease is confirmed. If effective screening is established upstream then the ophthalmologists can focus on treating those with the disease instead of screening for the disease.

One such successful integration happened with the vitamin A supplementation programme. In the early years, Vitamin A deficiency was a major cause of childhood blindness. Aravind was involved in running a successful community based nutrition rehabilitation programme and through intensive research work, was able to establish that the right nutritional intervention could not only save sight but also the child's life. This work has henceforth been taken up by the government and the Vitamin A supplement programme is integrated into the routine work of the Integrated Child Development Services.

ESSENTIAL READING:

- Introduction to DR: http://www.cehjournal.org/the-diabetes-epidemic-and-its-implications-for-eye-health/ (see first two articles in the issue)
- Introduction to RoP: http://www.cehjournal.org/retinopathy-of-prematurity/ (see first three articles in the issue)

ADDITIONAL REFERENCES:

- https://www.rcophth.ac.uk/wp-content/uploads/2014/12/2013-SCI-301-FINAL-DR-GUIDELINES-DEC-2012 updated-July-2013.pdf
- http://care.diabetesjournals.org/content/27/suppl_1/s84
- http://www.newbornwhocc.org/pdf/ROP_140810_300810.pdf
- http://www.v2020eresource.org/home/newsletter/SM115

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