

## **Project Title: Establishing Retinopathy of Pre-maturity (ROP) Screening and Treatment Services in Bangladesh**

### **1 Summary**

#### **1.1 Project Goal:**

To reduce avoidable childhood blindness due to Retinopathy of Pre-maturity (ROP) among the children in Dhaka City by increasing availability and accessibility to quality screening and treatment services.

#### **1.2 Project Objectives:**

- Develop capacity of Ispahani Islamia Eye Institute and Hospital as a ROP screening and treatment service center.
- Renovate patients' waiting area and examination room of the existing facility for the provision of ROP care and services at the Ispahani Islamia Eye Institute and Hospital.
- Introduce and institutionalize high clinical and quality standards for screening and treating neonates at risk of developing ROP or suffering from ROP.

#### **1.3 Project Output Objectives:**

- Train 31 doctors in ROP screening, diagnosis and treatment
- Orientate 31 ophthalmic personnel in ROP care and services
- Train 1 nurse in counseling
- Examine 5,500 neonates and treat 252 neonates diagnosed with ROP
- Institutionalize a Quality Assurance system to ensure quality screening, treatment, follow up and other service delivery, through development and introduction of required guidelines / protocols and their implementation at all levels.
- Establish a referral network with 10 renowned hospitals with NICUs to deliver specialized pediatric services in Dhaka.

## **2 Background and Rationale**

### **2.1 Context**

Forty percent of the total population in Bangladesh is children aged 0-16 years. Child health in general though improving, but neonatal mortality and morbidity remained unacceptably high. Despite significant reduction in maternal mortality, maternal malnutrition and anemia is still high. With the increased focus on maternal health care, the proportion of hospital delivery and delivery by medically trained professionals has increased but maternal and neonatal health remain a challenge to achieve MDG 4.

In Bangladesh, blindness is a significant problem especially among children. An estimated 51,200 children are blind. Additionally, 1.3 million are visually impaired. Each year, approximately 3.75 million infants are born and of those, about 25,000 children weigh 1,500 grams or less.

Neonatal health care or early infancy care exists only in the major cities of Bangladesh. There are at least 20 - 25 fully functioning Neonatal Intensive care Units (NICUs) in the Dhaka city. In eye care service, most of the specialists such as ophthalmologists and trained doctors live in the big cities and practice in urban areas.

### **2.2 Problem**

There are approximately 3.75 million infants born in Bangladesh each year; of those, about 25,000 weigh 1,500 grams or less. These infants are at a much higher risk for Retinopathy Of Prematurity (ROP).

ROP is a potentially blinding eye disorder that primarily affects premature infants born before 31 weeks of gestation and weighing about 1,250 grams or less. The smaller a baby is at birth, the more likely that baby is to develop ROP. This disorder—which usually develops in both eyes—is one of the common causes of visual loss in childhood and can lead to lifelong vision impairment and blindness. Today, there is an increase in ROP incidence because of the increased survival of low weight premature infants owing to the availability of advanced NICUs service.

There are about 20–25 NICUs/PICUs in Dhaka City of which 50% of them are medium/small size. Most of the Neonatologists, Ophthalmologists and parents are not optimally aware of the severity of the problem and pattern of condition. Most of the facilities lack trained, experience nurses and required supporting instruments.

The proposed partner is in Dhaka, the capital city of Bangladesh and has many years of experience in eye care service delivery sectors and therefore can easily develop effective mechanisms to provide timely services to those affected newborn babies coming from the surrounding NICUs. If this is not done, the baby's visions and their upcoming future productive years will be lost forever.

### 3 Project Partners

#### 3.1 Analysis of Experience and Current Capacity of Main Collaborating Partner

Ispahani Islamia Eye Institute and Hospital is a non-profit organization founded in 1960 by a local philanthropist Mr. M. A. Ispahani.

Ispahani Islamia Eye Institute and Hospital as an accredited postgraduate ophthalmology-training institute also offers training courses such as; one year ophthalmic residency training program, one year Diploma in Ophthalmology (DO), twelve-week IOL-microsurgery training program, 8 weeks clinical training course in cornea and 15 month long fellowship program. Among these, the cornea training program was established with ORBIS's support.

The first three ORBIS Flying Eye Hospital-based eye care training and treatment programs in Bangladesh (1985, 1989 and 1991) were successfully hosted by Islamia Eye Hospital. Since the inception of ORBIS programs in Bangladesh and the establishment of ORBIS's country office in 2000, the IEH has organized several international seminars, symposiums and workshops on different ophthalmic sub-specialties in Dhaka where dedicated groups of volunteer eye-care professionals from global premiere eye hospitals and teaching institutions were in attendance along with national level renowned ophthalmic professionals.

In 2003, ORBIS collaborated with IEH to develop the training and service delivery capacity of its existing cornea unit through a comprehensive four years project. At present, IEH is partnering with ORBIS in the provision of quality cataract and refractive error services to underserved marginalized populations under the project: '*Creating access to eye care services for rural people*'.

The proposed project will provide support to the huge unmet need for ROP services in Bangladesh by establishing one new ROP screening and service center at Ispahani Islamia Eye Institute and hospital in Dhaka under the ORBIS-Bangladesh National Childhood Blindness Initiative focusing on providing much-needed quality eye care services for underserved communities.

#### 3.2 Other Project Partners

The following ten Neonatal Intensive Care Units (NICUs) in different Hospitals in Dhaka will be collaborating with the Ispahani Islamia Eye hospital (base hospital) for screening and treatment service to ROP cases:

- Bangabandhu Sheikh Mujib Medical University (BSMMU)
- Dhaka Medical College Hospital
- BIRDEM General Hospital and Ibrahim Medical College
- Apollo Hospitals
- Square Hospitals
- United Hospitals
- Ayesha Memorial Specialized Hospital
- Institute of Maternal & Child Health
- Institute of Child Health and Dhaka Shishu Hospital
- Holy Family Red Crescent Medical College Hospital

One neonatologist usually attends to every neonate at birth during delivery period in most of the above listed hospitals. The neonatologists also visit to every neonate at least three times in a day by roster during postnatal period. But there is no provision for ROP screening and service.

#### 4 Program Strategy

SI #		Yes	No
1	Rural Eye Care		√
2	Training	√	
3	Institutional Development	√	
4	Healthcare Technology		√
5	Healthcare Financing		√
6	Advocacy	√	
7	Public Awareness and Community Education	√	

ORBIS has been working with partners and established seven specialized eye care centers for children in some districts. As part of the Bangladesh National Childhood Blindness Program, ORBIS has planned to establish the first ROP Screening and Treatment Service center in the country to address this emerging issue.

Since Ispahani Islamia Eye Institute and Hospital has a well-established retina sub-specialty department and is also trying to provide limited ROP services in collaboration with few Neonatal Intensive Care Units (NICUs) in Dhaka City, ORBIS will facilitate and support Ispahani Islamia Eye Institute and Hospital and some selected NICUs to implement a five year long ROP project in Bangladesh.

Through a multi-year project, ORBIS plans to strengthen the capacity of partner Ispahani Islamia Eye Institute and Hospital by providing appropriate training to ophthalmologists and other medical staff/technicians; supporting the installation of modern/updated equipment needed for the provision of quality ROP screening and services; and incorporating appropriate policies/ guidelines in order to provide affordable services to underserved populations.

The partner will contribute to the prevention of childhood blindness due to ROP by taking preventive and other measures such as organizing pediatric eye care awareness programs at different levels, training and orientation of medical staff of different levels, conducting focused medical and other interventions, generating appropriate tools for ROP service promotion as well as by establishing strong referral linkages with Neonatal Intensive Care Units (NICUs) in Dhaka City.

ORBIS will work closely with its partner to adapt various tools, guidelines and systems, ensure quality and help setting standard for ROP service delivery. During the project life, specific research and joint studies will be conducted to create evidence on ROP interventions, operational strategies including NICU's performance to incorporate this work into the broader childhood blindness program in Bangladesh.

- Expansion of facility at the retina department of the hospital to screen and treat ROP cases. The partner will allocate required spaces for ROP care and service in the base hospital.
- Strengthening of capacity of Medical Officers and other clinical staff of NICUs and selected collaborating hospitals.
- Development of appropriate human resources for ROP screening and treatment services at the hospital by training ophthalmologists, orienting nurses and paramedics. ORBIS will deploy and utilize all its strategic tools to transfer updated skills and knowledge to partners through hospital-based programs, fellowship training, ophthalmic telemedicine Cyber-Sight and E-Consultation/ Learning, Flying Eye Hospital Program and continued medical education opportunities, etc.

- Provision of necessary equipment (RetCam, Portable Diode Indirect LASER, Portable wireless Indirect Ophthalmoscope and accessories etc.) for delivery of quality ROP screening and treatment services at the hospital.
- Study of current situation needs and gaps of the selected / proposed NICUs through a baseline survey to support and inform project implementation and activities to build an effective service delivery network.
- Provision of portable RetCam with a wifi device to IEH for consultation during screening at NICUs by the junior consultant so that he/she can consult with senior colleagues for confirmation. Complicated medical cases requiring diagnostic confirmation will be presented to the retina specialist at the base hospital through images captured by the RetCam in the NICUs. This system will not only provide much-needed support for screening activities, but will also prove to be cost effective in the provision of proper treatment for ROP cases. It will save valuable staff time, and a considerable number of patients may not require going to the base hospital for ROP screening.
- Provision of a vehicle to the partner so that the ROP management team can easily carry the **RetCam**, portable LASER and other essential instruments to the NICUs during screening and laser treatment of neonates. The **RetCam supplying vendor** will be responsible for providing equipment maintenance services throughout the project period and post project completion.
- Development of M&E, Management Information System (MIS) and Quality Assurance system and feedback mechanism. A database will be created and periodically/ quarterly analyzed for quality of services evaluation.
- In the beginning of project implementation, ORBIS Bangladesh, senior management and clinical staff of the partner will set the screening strategy and work-plan in a meeting organized at the partner hospital. The partner will also set the follow-up mechanism as per the clinical expectation and also following the baseline finding
- Research questions and operational research generated through the above information systems will be utilized as part of project work. Research/study findings will be used for conducting advocacy involving IEH and NICUs, local NGOs and INGOs, government officials and other health professionals to increase awareness about ROP care and services in Bangladesh.

## 5 Sustainability

At present, IEH can recover almost all operational costs as it generates significant amounts of income from fees associated with different ophthalmic training courses, long-term fellowship programs, academic courses and patient consultations and surgeries. They also receive regular financial support from philanthropists, other international eye NGOs and Standard Chartered Bank for development and expansion of eye care programs.

By implementing ORBIS's comprehensive eye care capacity building approach and with ongoing technical and managerial support and monitoring from ORBIS, the project will be able to establish high quality ROP screening and services in Dhaka. With an increasing demand for ROP care in the Dhaka city, IEH is expected to receive an increasing number of patients in the coming years, which will generate additional income and cost recovery avenues for the partner hospital.

ORBIS will gradually decrease its financial support and the partner hospital will increase its contribution over the course of project implementation. At the end of the project, this ROP Screening and Service center is expected to pick-up a significant percent of the recurrent costs of the services that are developed during the project period.

ORBIS will regularly review the partner's management strategies and marketing plans so that they can develop a long term business plan with a focus on cost recovery. The ROP unit may not generate enough income to reach a break even point on its own; however, the overall income of the partner hospital and funds generated from other donors/philanthropists will cover the cost of the unit in the long run.

At the end of the project, the partner plans to allocate financial sources from other revenue streams towards ROP services and will continue to seek funding from philanthropists for the continued implementation of ROP work.

## **6 Monitoring**

ORBIS proposed Clinical Outcome Indicators to monitor quality of clinical service, once approved will be implemented in the project. There will be an appropriate monitoring plan and a work-plan throughout the life-cycle of the project.

The partner will establish computer based Management Information System (MIS) and Quality Assurance system along with feedback mechanism. The Program Manager of ORBIS, Project Coordinator of partner and senior management of IEH and ORBIS will undertake field visits for observing the activities directly. All of them will provide their feedback and comments about the on-going activities, so that there will be an opportunity to incorporate their comments/ suggestions in the remaining period of project implementation.

ORBIS Program Manager will meet the partner periodically and as & when necessary and share the observations/progresses of the activities. The findings obtained during visiting the field and observing the performance as well as feedback from the parents which will be shared with the senior management of the partner and would make necessary changes in the project monitoring plan and implementation strategy. ORBIS Program Manager will also analyze the monthly/ quarterly performance reports and provide necessary inputs for better implementation of the project.

The ORBIS program Manager will share the findings of the mid-term evaluation and research works with senior staffs of ORBIS and IEH and make necessary changes in the monitoring plan as per their suggestions and also the recommendations of mid-term review and research study of the project.

One participatory mid-term evaluation will be conducted to assess project progress and continuing activities against objectives. A team consisting of independent consultants, representatives / staff members of partner hospitals, ORBIS Bangladesh staff members along with other relevant personnel will perform the mid-term review. The findings of the mid-term review will be shared with different stakeholders through a dissemination seminar and used for revisions of future project activities, objectives and strategies, if required.

A final evaluation will be carried out at the end of the project period involving ORBIS International, representatives from the implementing partners and external personnel as appropriate. The evaluation will focus on the effectiveness of the project in terms of the enhancement in service delivery in ROP within the Retina Department including quality of care. The final evaluation will also consider how the project work promoted childhood blindness prevention activities in Dhaka, in the region and across the country.

The project database / information system will generate research questions and operational research; the findings and recommendations of the research will be shared through a national level dissemination seminar and incorporated into the remaining project implementation period.