Need Analysis Report for the Project

Annually, we provide surgeries to around 1000 Cleft children and adults through Medical Missions and camps. Medical Equipments are critical for our surgeries. Right medical equipments help us to provide much needed surgery and care to children and adults born with cleft in remotest parts of India.

Our aging sets of medical equipments need to be replaced completely. Many of these equipments have completed their end of product life. We wish to raise support of USD 26,000 to purchase these critical medical equipments.

I. Biphasic Defibrillator



Estimated Price: USD 7693

Need

While operating on Cleft patients sometimes in worst case scenario the heart of a patient might face problem in maintain its normal rhythm, Biphasic Defibrillator helps the patient to recover from the abnormal rhythm to normal rhythm and prevents damage to any of his/her vital organs.

Description

Defibrillator is a device used to perform defibrillation for the purpose of turning abnormal ECG rhythm into normal rhythm. When heart enters into ventricular fibrillation, the process of returning it to its normal sinus rhythm by giving proper amount of external electric current is called defibrillation, and device used in giving such electric current is called **defibrillator**.

Biphasic defibrillation offers equal or better efficacy at lower energies than traditional monophasic waveform defibrillators, with less risk of post-shock complications such as myocardial dysfunction and skin burns. This is why almost all manufacturers of external defibrillators are now using biphasic waveforms in their devices.

II. <u>Transport Ventilator</u>



Estimated Price: USD 10,700

Need

As medical missions are organized in hospitals of different setups and capacities in remote areas, hence, during a medical emergency a child / Infant undergoing Cleft surgery might need to be shifted to a hospital with better facilities. In such a scenario, transport ventilator help in providing adequate oxygen supply to the patients.

Description

Transport ventilators provide consistent ventilation to the patient, allowing Doctors to focus on other treatments. Transport ventilators provide controlled ventilation with low flow rates that minimize the risk of gastric distension, with the subsequent potential for aspiration. Doctors can determine the required tidal volumes and ventilation frequency, based on patient condition and local policies and procedures. Transport ventilators also allow the patient to breathe spontaneously through the breathing circuit, delivering a high flow rate and 100% oxygen. These patient support capabilities make a transport ventilator a significant asset to Doctors during transport of the critical patient. Basic transport ventilator modes include:

• Pressure-support ventilation—augments the patient's spontaneous inspiratory effort by providing a flow of oxygen during inspiration to a preset limit.

• Pressure-control ventilation—delivers volume until the target pressure is achieved during inspiration.

• Volume control and time limited ventilation—delivers volume within a certain period of inspiratory time.

Transport ventilators are relatively simple devices with easy to use controls. The ventilators have controls for both volume or pressure and respiratory rate based on normal physiological rates and volume requirements.

III. ETCO2 Monitor (2 Pieces)



Estimated Price: USD 1693 per unit

Need

ETCO2 monitor is a common monitoring device which we use to check the vital parameters of a patient during surgery and also in recovery. These monitors help surgeons and other doctors to understand the well being of the patient undergoing the surgery.

Description

EtCO2 monitoring is essential during many types of medical procedures ranging from routine respiratory observation to open heart surgery, as well as any time general anesthesia must be administered.

Capnography is the monitoring of the concentration or partial pressure of carbon dioxide (CO ₂) in the respiratory gases. Its main development has been as a monitoring tool for use during anesthesia and intensive care. It is usually presented as a graph of expiratory CO₂ (measured in millimeters of mercury, "mmHg") plotted against time, or, less commonly, **but more usefully, expired**

volume. The plot may also show the inspired CO₂, which is of interest when rebreathing systems are being used.

IV. Flash Sterilizer



Estimated Price : USD 3846

Need

Hygiene and sterilization is critical for Cleft surgeries. As we operate on infants as young as 6 months of age, hence, all equipments need to be sterilized properly before reuse on another patient. Flash sterilizer helps us to sterilize instruments faster without the need to carry and purchase extra equipment sets especially in Mission setup where we provide large of surgeries in limited number of days.

Description

"Flash" steam sterilization was originally defined by Underwood and Perkins as sterilization of an unwrapped object at 132°C for 3 minutes at 27-28 lbs. of pressure in a gravity displacement sterilizer. Currently, the time required for flash sterilization depends on the type of sterilizer and the type of item (i.e., porous vs non-porous items).

Although the wrapped method of sterilization is preferred for the reasons listed below, correctly performed flash sterilization is an effective process for the sterilization of critical medical devices. Flash sterilization is a modification of conventional steam sterilization (either gravity, prevacuum, or steam-flush pressure-pulse) in which the flashed item is placed in an open tray or is placed in a specially designed, covered, rigid container to allow for rapid penetration of steam.

Further, some rigid, reusable sterilization container systems have been designed and validated by the container manufacturer for use with flash cycles. When sterile items are open to air, they will eventually become contaminated. Thus, the longer a sterile item is exposed to air, the greater the number of microorganisms that will settle on it.

SI No.	Equipments	Unit	Price
Ι.	Biphasic defibrillator	1	USD 7800
Π.	Transport Ventilator	1	USD 10,700
III.	ETCO2 Monitor	2	USD 3500
IV.	Flash Sterilizer	1	USD 4000
	Total	5	USD 26,000

Hence, this project is raising USD 26,000 to purchase the above given critical medical equipments.

We are thankful for the USD 100 that has been raised till date.