

Bedside newborn phototherapy

Country of origin | United States of America

Health problem addressed

Global health experts estimate 10% of all newborn mortality can be attributed to jaundice. An excess of the chemical bilirubin in the blood approaches dangerous levels in more than 10% of all newborns. The result can be kernicterus, lifelong disability, severe brain damage, and death, placing an extreme burden on families and communities. Every year in South Asia and Sub-Saharan Africa, more than 5.7 million jaundiced infants need treatment, but do not receive simple phototherapy. There currently is no durable and easy-to-use phototherapy device for rural facilities, so newborn jaundice accounts for 20-33% of admissions to national-level hospitals in developing countries.



Product description

Bedside Newborn Phototherapy is a device designed to treat jaundice in the mother's room in rural clinics. The double-sided, high-power LED lighting cures the most severe cases of jaundice and dramatically reduces treatment time.

Developer's claims of products benefits

The device is compact, intuitive, and durable enough to function in the mother's room in a rural clinic, reducing staff workload and promoting breastfeeding. The reduction in treatment time allows resources to be used to treat more infants and allows the family to go home sooner. This can decrease the cost of care, reduce loss of income, reduce exposure to infection, and return mother and baby to the safer home environment to breastfeed. Bedside Newborn Phototherapy's design uses energy-efficient light emitting diodes (LEDs) that last 5 years. It is completely sealed against dust and bugs and has no moving parts, drastically increasing product life.

Suitability for low-resource settings

In low-resource settings, jaundiced infants referred from rural to higher-level hospitals risk developing permanent brain damage or dying en route. Jaundiced infants are isolated from their mothers in crowded neonatal ICUs, hindering breastfeeding in the critical first days. Bedside phototherapy enables rural hospitals to treat jaundice, which reduces the burden on national-level hospitals to treat more serious conditions. It is produced locally in Vietnam.

Operating steps

Plug it in and press the button. Fixed two-sided lighting, one intensity setting, and an easy to clean, removable single-infant bassinet make this device hard to use improperly, thereby reducing incidence of ineffective treatment and cross-infection.

Regulatory status

Used IEC 60601-1:2005 and IEC 60601-2-50:2009 standards to guide the design. Pending assessment by Ministry of Health in Vietnam, recognized by the ASEAN countries. Expected date November 2013.

Future work and challenges

Production of the first 200 Bedside devices is nearing completion. The first devices were delivered to hospitals in northern Vietnam during Fall 2013; over the following year the remainder will be distributed to Vietnam, Myanmar, Cambodia, Laos, East Timor, the Philippines, Thailand, Malaysia, and Ghana. The plan is to expand to a total of 1,000 Bedside devices, reaching at least 250,000 newborns. The next big challenge is to connect with additional organizations who wish to purchase and distribute the devices worldwide to reach millions of beneficiaries.

Use and maintenance

User: Physician, nurse, family member

Training: Provided by supplying organization

Maintenance: None

Environment of use

Settings: Rural, urban settings, primary (health post, health center), secondary (general hospital), tertiary (specialized hospital)

Requirements: Continuous power supply (90-264VAC), or a 12VDC input typical of car batteries and solar power systems.

Product specifications

Dimensions (mm): 660 x 380 x 495

Weight (kg): 11.8

Consumables: None

Life time: 5 years

Shelf life: 5+ years

Retail Price (USD): N/A

List price (USD): 1500

Other features: Mobile, capital equipment

Year of commercialization: 2011

Currently sold in: Cambodia, East Timor, Ghana, Laos, Malaysia, Myanmar, Philippines, Thailand and more.

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