

HEALTH & DISEASE CONTROL

Affordable, World-class Phototherapy for Neonatal Jaundice



Neonatal Jaundice

Why does it happen?

Build up of Billirubin – A yellow substance produced when Red Blood Cells break.

What are the symptoms?

Yellowing of skin and the whites of eyes

Other symptoms:

* Yellowing of the palms of the hands or soles of the feet

* Dark, yellow urine (a newborn baby's urine should be colourless)

* Pale coloured stools instead of yellow- or orange-coloured stools

Who is affected?

Mostly newborns. *Estimates indicate:*

* Globally 6 out of 10 newborns may have the disease.

* Annually around 14.1 million babies worldwide (10.5% of live births) require phototherapy. (DRev)



NEONATAL JAUNDICE

- Among the 'top 5 killer' of new born babies.
- One of the most common morbidity among the newborns
- Primary reason why newborns are readmitted to hospitals worldwide.
- Severe jaundice, when left untreated or ineffectively treated, can lead to brain damage.

(Lancet 2010)

Every year, over 6 MILLION BABIES with severe jaundice are not receiving adequate treatment

But, Jaundice is easy to treat.

If detected early, it simply requires shining intense blue light onto a baby's skin.

THE ANSWER

Affordable and state-of-the-art phototherapy device such as Brilliance by DRev that cures neonatal jaundice

Why the Need?

- Current treatment devices are costly to purchase and maintain.
- Current market devices are bulky and not portable enough.
- Require skilled operators to manage.
- Not suited to tropical heat and humidity.
- High electricity drain with a short lamp life.
- 95% of devices in low-income countries, hospitals and clinics did not meet American Academy of Pediatrics standards.

What does it offer?

- Affordability. Cost saving Indian manufacturing being tested in Low Income Countries.
- Portability. Can reach remote areas.
- Easy integration with other equipment especially critical for babies suffering multiple conditions.
- Longer shelf life of LEDs (approximately 50 times more than existing lamps).
- Saves power.
- Low maintenance.

[Click here](#) for more on low cost phototherapy devices for neonatal jaundice treatment.

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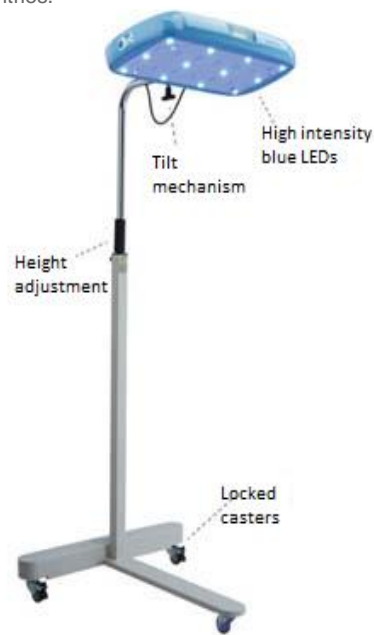
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Creating a 'Brilliance' Impact

The Purpose

To develop and promote low cost phototherapy devices in developing countries.



Global Impacts & Outcomes

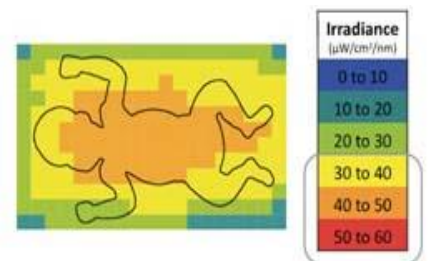
- Market scoping has been done in Bangladesh, Ethiopia, Kenya, Tanzania, Uganda, Afghanistan and Pakistan.
- It is highly cost-effective and has potential to save DALY* of neonatal infant per year at a cost of £145, equal to one-fifth of India's per capita income. (KPP-IPE Global Analysis).
- In next five years, around 1,750 units of Brilliance will be supplied to the Indian market, which will treat over 260,000 neonatal jaundice cases, and save around 1,900 neonatal infants from deaths and permanent disabilities.

* One Disability Adjusted Life Years (DALY) can be thought of as one lost year of "healthy" life. The sum of these DALYs across the population, or the burden of disease, can be thought of as a measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability. (WHO)

Why Brilliance?

- A phototherapy device that meets the recommendations given by intensive phototherapy methods of the American Academy of Pediatrics (AAP).
- State of art flux meter, automatic light intensity adjustment and more efficient light output.
- Over 523 units over a period of 19 months (up to June 2014), which provided phototherapy treatment to 22,502 neonatal infants suffering from jaundice and caused aversion of deaths and disabilities of 446 neonates.

Effective: Delivers treatment that complies with the American Academy of Pediatrics phototherapy standard: $>30 \mu\text{W}/\text{cm}^2/\text{nm}$.



Irradiance footprint with baby silhouette for Brilliance

The Genesis

In late 2010, D-Rev licensed Brilliance to Phoenix Medical Systems in Chennai, India. Phoenix is the largest manufacturer and seller of quality neonatal care equipment in India with 70% of the market share of compact fluorescent bulb phototherapy devices in the country. Brilliance was released in the market in November 2012. Phoenix is currently manufacturing, distributing, and selling Brilliance throughout India and much of the rest of the world.



Knowledge Partnership Programme

The Way Forward

- Need to consider each country's medical device regulatory environment for imports.
- Need to assess level of sophistication of medical expertise, diagnostic capabilities, and policy priorities
- Need to understand and formulate common market-entry criteria for a better and long-lasting reach

No baby should die or be disabled because a light bulb cannot be replaced!

[Click here](#) for more on low cost phototherapy devices for neonatal jaundice treatment.

KPP is a South-South cooperation programme promoting knowledge sharing in the areas of Food Security, Resource Scarcity and Climate Change; Health and Disease Control; Trade and Investment; and Women and Girls. KPP is funded by the Government of UK's Department for International Development (DFID) and managed by a consortium led by IPE Global Private Limited under its Knowledge Initiative. The main objective of KPP is 'Gathering and uptake of evidence on issues central to India's national development that have potential for replication in LICs and impact on global poverty'.

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