Phototherapy device for neonatal jaundice

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Comparing O-blanket (left) and comparing the process of using it to traditional phototherapy light system. Credit: Hong Kong PolyU

O-blanket is an innovative phototherapy device for neonatal jaundice, consisting of a light-emitting fabric covered by a wrapper made of top, reflective and back fabrics. The lightemitting fabric is woven from side-emitting polymer optical fibres and textile yarns.

O-blanket provides an irradiance area of over 830 cm2 and an irradiance intensity of more than 30.0 μW/cm2/nm in 440-460 nm, meeting the requirements set by the American Academy of Pediatrics. It has passed the safety test IEC 60601-1, in-vitro cytotoxicity test ISO10993-5:2009, and irritation and skin sensitization test ISO 10993 -10:2009. This light-

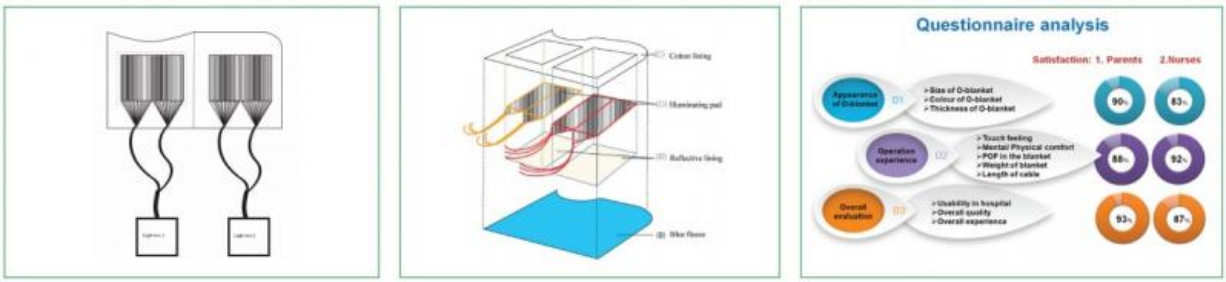
emitting fabric can be disinfected with bleach for 140 hours without affecting the emitting efficiency.

Special Features and Advantages:

- Soft, air-permeable and comfortable for neonates
- Babies can be held by their mothers during treatment
- Reducing operational load of nurses
- Detachable design for cleaning and disinfection
- Light emitting fabric is disinfectable with bleach
- No heat generated during treatment
- No protective eye-goggles needed

Applications:

- Wearable phototherapy device for hospital
- Wearable phototherapy device for home



O-blanket's overview (left), elements (centre) and questionnaire analysis. Credit: Hong Kong PolyU