Pediatrics Technology Applications: Enhance the Bilirubin Jaundice (*BiliDice*) Device for Neonates Using Color Sensor

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Abstract In the few days after birth, many newborn children develop jaundice, a color that turns yellowish on the skin and whites of the eyes. Indeed, in the first few days around half of all newborns have mild jaundices. Jaundice may begin early and last longer in premature babies than in full-term babies. This study focuses on enhancing a portable and economical smart bilirubin jaundice (*BiliDice*) device for neonates. By using the RGB color sensor and Arduino-Uno controller, the system effectively detects three conditions which are normal, mild and critical jaundice. The proposed device uses only one parameter which is reading of bilirubin in mg/dL. The features of the *BiliDice* device output will appear on the LCD based on the level of bilirubin. This present device is well developing so the clinical checking process can be done easily in a short time. The advantage is also lightweight and portable for this prototype device. This device is easy and simple to use. Suitable to improve the physician's ability in Malaysia to treat neonates jaundice.

Keywords Jaundice · Bilirubin · RGB color sensor · Neonates · Pediatrics · Technology · Medical device

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