

Executive Summary

Neonatal jaundice or neonatal hyperbilirubinemia results from elevated total serum bilirubin (TSB) and clinically manifests as yellowish discoloration of the skin, sclera, and mucous membrane. It is the most commonly encountered medical problem in the first two weeks of life and a common cause of readmission to the hospital after birth. Approximately 60% of term and 80% of preterm newborns develop clinical jaundice in the first week after birth. The higher percentage is because of the immature liver in the neonatal phase. Neonatal jaundice is the main reason for neonatal morbidity and responsible for 10 % of neonatal mortality. All these infants suffering from persistent jaundice have significantly decreased hemoglobin levels and elevated bilirubin concentration in blood due to the increased bilirubin production from hemolysis resulting in a simultaneous pathologic condition of jaundice and anemia among neonates. Unfortunately, current bilirubin, hemoglobin measurements are happening in an invasive manner or non-invasive methods have insufficient accuracy. Our device measures bilirubin, hemoglobin and blood oxygen saturation more accurately in a non-invasive way. As a leading, highly efficient system, Luminoah can reach a \$556 million Bilirubin meters market with an 7% compound annual growth rate just by focusing on bilirubin alone.

Market Opportunity

Table 1 shows our market opportunity. Our assumption is that every Neonatal intensive care unit (NICU) would do continuous monitoring of bilirubin levels for each bed. We have projected the market by using our device cost. We believe in this assumption because jaundice is the fourth leading cause of neonatal mortality and NICU's hosts high risk patients. Also due to lack of worldwide data, data from US, Europe, India and China are used to interpolate global data. For the SOM market, California and Texas are chosen because they are the highest NICU beds states.

Market	Number of NICU beds	Market value
TAM: NICU patients worldwide	111,677 [36, 46, 47]	\$556 million
SAM: NICU patients in US	35,601 [36]	\$177 million
SOM: NICU patients in California and Texas	6,796 [36, 45]	\$34 million
Beachhead: NICU patients in Seattle Children's hospital and UW medicine	82	\$408,196

Table 1: Market opportunity of Luminoah

Competitive Strategy

Existing Solution	Accuracy of measurement	Continuous monitoring	Ease of Use	Safety
Luminoah	Good	Good	Good	Good
BiliCheck™ 20	Poor	Fair	Good	Good
JM-105™ 21	Fair	Fair	Good	Good
MBJ-20	Fair	Fair	Good	Good
Conventional invasive method	Good	Poor	Fair	Poor