

Applications and Markets

Neonatology

Premature newborns admitted to neonatal intensive care units (NICU) are typically 24 to 37 weeks of gestation, may weigh as little as 500 grams, and have a total blood volume less than 50 mL. In comparison, a typical blood sample request (from adults) for routine laboratory testing can be 10 mL and is rarely less than 2 mL. So it can be seen that regular testing for vital analytes in neonates is problematic. Infrequent blood samples are taken from heel sticks. In a critically ill neonate between 5 to 25 heel sticks a day over several days or even weeks may be necessary. Currently, no rapid Point-of-Care analysis system exists that can address the requirements for the tight control of vital parameters and therapeutic drug levels in the neonate.

Thus an unmet clinical need exists for a minimally invasive, continuous and automated real-time online monitoring (CAR-TOM) system for neonatologists. Such a system could provide crucial decision making information for the medical staff, improve clinical care and reduce healthcare costs.

Probe's experience with its MicroEye[®] platform in applications particularly for the monitoring of blood glucose, lactate and antibiotics places the company in a position to meet this need. Indeed the company is developing a smaller product, called the NanoEye[®] than is intended to be used for neonates.