

# Diagnostic's Gentle Touch: Transcutaneous Bilirubin Monitoring Program



The Calgary Health Region, in collaboration with Calgary Laboratory Services and the Division of Community Paediatrics, is the first city anywhere to introduce a comprehensive newborn transcutaneous bilirubin (TcB) monitoring program which involves Acute Care sites as well as Public Health. This program is designed to identify, manage and ensure early treatment of significant neonatal hyperbilirubinemia and is slated to begin operating on April 1, 2007 in Calgary urban.

Hyperbilirubinemia, or jaundice, is a condition that affects approximately 50% of newborn infants and causes the baby's skin to appear yellow. The baby is often sleepy and does not feed well which can lead to weight loss or dehydration. While mild jaundice is very common, it can sometimes be severe and approximately 3 - 5% of infants will need admission for phototherapy. In very rare cases, very severe hyperbilirubinemia can cause brain injury (kernicterus).

This program marshals the efforts of physicians, hospital nurses and public health nurses along with the clinical laboratory to noninvasively assess jaundice in the newborn. The steering committee is responsible for the development, rollout and subsequent overseeing of the program.

The program involves a change in current practice to nurses using a device called a Transcutaneous Jaundice Meter (TJM) which uses light to determine if the baby is jaundiced. This device safely and accurately measures the yellowness of the skin on the baby's forehead. This procedure is quick, painless and reduces the need for doing blood tests by up to 90%. The meter reliably identifies which infant is likely to be significantly jaundiced based on a nomogram that is based on infant age, gestational age and other risk factors.



Newborn infants will have routine TcB measurements done while in the hospital nursery. Following discharge, Postpartum Community Services Public Health Nurses will assess the baby with the TJM during regular home visits and order a blood test if indicated by the nomogram. Process will be developed where the Public Health Nurses will work closely with Family Physicians and Paediatricians to optimize the use of the TcB in screening and testing for jaundice. The Public Health Nurse will communicate the results of the TcB and any serum bilirubin with the requesting physician. Emergency Room physicians will have on-site access to the TJM and this should hopefully speed up waiting times for jaundiced infants seen at acute care sites.



This program is an exciting, innovative and evidenced-based initiative and the newborn children in this community will benefit enormously from the safety, comfort and convenience it will offer.