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Jaundice screening program cuts readmissions, heel pokes

CALGARY – Fewer newborns in Calgary are being readmitted to hospital for concerns over jaundice, thanks to a unique community screening program.

Since the program was introduced in 2007, the readmission rate for suspected pediatric jaundice has gone down 30 per cent, and the number of unnecessary heel pokes, or blood draws, has fallen by an estimated 75 per cent.

“Calgary’s program is unique in that several groups have come together to make it a success, including doctors, acute care nurses, public health nurses and Calgary Laboratory Services (CLS),” says Dr. Stephen Wainer, the medical director of the Newborn Jaundice Screening Program. “Other jurisdictions are now looking at Calgary as the model to try to replicate.”

Jaundice is a yellowness in the skin and whites of the eyes that affects most babies in the first few days of life. The yellow colour comes from a substance in the blood called bilirubin and the level of this pigment is usually a bit higher in newborns as a result of immaturity of the liver.

Newborn jaundice is usually completely harmless and settles without treatment. A small percentage require treatment as excessively high bilirubin levels can cause hearing impairment, brain damage and even death if not identified early and effectively treated. For this reason, newborns are closely monitored for this condition.

In the past, nurses and physicians would have to assess the level of jaundice by ‘eyeballing’ the baby. This can lead to both over-testing and missed cases.

The Calgary program uses a device known as a Jaundice Meter or Transcutaneous Bilirubinometer (TcB meter) that reliably, quickly and painlessly assesses the level of bilirubin in the skin. The TcB meter emits a flash of light into the skin and the reflection of this flash provides an indication of the bilirubin level. If the reading is high, then a blood test may be necessary.

In Calgary, the device is routinely used in the newborn nurseries and in the community. Public health nurses travel with the device when they visit moms and their babies within 24 to 48 hours of discharge from hospital.

If the TcB level is very low, then no further tests may be required and, if it is only modestly increased, the public health nurse may choose to recheck the baby at a followup visit. If the TcB level is above a certain level, the nurse will collect a blood sample and have it transported to CLS labs for rapid analysis.

“Before the TcB meters became widely used, nurses would use their judgment and, if a baby appeared yellow, they would order or collect a blood test,” says Donna Allegro, the co-ordinator for the Newborn Jaundice Screening Program. “Now with the newer technology, we’re able to safely avoid unnecessary heel pokes.”

Babies with higher bilirubin levels are either admitted to the Peter Lougheed Centre, which is the hospital in Calgary that specializes in treating newborn jaundice, or closely monitored in the community until the levels stabilize.

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Kathy Brown, who had her first child in New York, then moved to Calgary to have her second, has nothing but praise for the followup care she received in Calgary after discharge from hospital.

“With our first baby, the doctor basically eyeballed her and said, ‘She looks a little jaundiced. You should come back in a week,’” Brown says.

“With our second, a nurse came to our home and found with the TcB meter that her levels were a bit elevated and something we’d have to watch. It really gave me peace of mind – it made such a difference in that vulnerable postpartum state to know that someone was there caring for us. Everything to do with the care here has been just amazing.”

Jennifer Verdolin, one of the public health nurses who visited Brown shortly after Violet was born in April this year, says jaundice and poor feeding can sometimes go hand in hand.

“Aside from monitoring for jaundice, nurses also provide assessments on breastfeeding and arrange for access to other community resources, if needed,” Verdolin says.

Dr. Wainer says the fact hospital readmissions for pediatric jaundice have declined so significantly is evidence that physicians are trusting public health nurses to support babies in the community with borderline bilirubin readings.

“Because of the program, moms and their babies are able to leave hospital sooner and, by the same token, the babies are readmitted sooner if their condition warrants it,” Dr. Wainer says. “It’s convenient, safe and gives parents the reassurance they need. We’re seeing far fewer critical bilirubin cases than we used to.”

There are about 20,000 babies born every year in Calgary. About 340 babies per year are currently readmitted for newborn jaundice to the Peter Lougheed Centre. Treatment consists of whole body phototherapy using a specialized blue light, which helps break down the bilirubin so that the baby can process it.

Dr. Wainer says a number of other cities have modelled their screening programs after Calgary’s, including Saskatoon and Winnipeg.

Alberta Health Services is the provincial health authority responsible for planning and delivering health supports and services for more than four million adults and children living in Alberta. Its mission is to provide a patient-focused, quality health system that is accessible and sustainable for all Albertans.

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For media inquiries, and instructions on accessing B-roll of a newborn getting checked with the TcB meter and having her heel poked, contact:

Greg Harris
AHS Communications
403-943-2911 (office)
403-619-3108 (cell)
gregory.harris@ahs.ca