

# OPTIMIZING JAUNDICE SCREENING

## A Non-Invasive Solution for Neonatal Hyperbilirubinemia Assessments

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### DESCRIPTION

The Bilirubin Clinic (BC) at Humber River Health (HRH) provides comprehensive interdisciplinary care for infants requiring jaundice management post discharge. Effective jaundice management prevents potential neurological damage and other serious complications. Previously, the clinic routinely obtained capillary blood samples from the heel to perform total serum bilirubin (TSB) testing. The introduction of a validated transcutaneous bilirubin (TcB) meter prevents painful, invasive bloodwork while ensuring effective jaundice management. Total number of patients in the BC clinic varied each month with randomized samples for infants who received either TSB or TcB testing. Table 1 identifies the total number of tests done and the total percentage of heel blood samples saved.

### OBJECTIVE

To reduce the frequency of monthly TSB testing through the implementation of adjunct TcB screening.

### ACTIONS TAKEN

Aligning evidence-based practices with efforts to enhance patient and caregiver experience optimizes jaundice management while minimizing risks to patient safety.

The actions included thoughtful planning and diligent follow through in relation to:

- Bilirubinometry: Type of device used
- Education for nursing staff and physicians
- Documentation: Review of process
- Workflow: Unit demands considered
- Quality control and assurance checks



Figure 1. The Dräger Jaundice Meter JM-105 (Bilirubin Meter)

Month	Number of TSB Performed, Randomized Sample (Bloodwork)	Number of TcB Performed, Randomized Sample (Bilirubin Meter)	Total Number of Tests Done	Total Percentage of Heel Blood Samples Saved
April 2025	51	17	68	25.00%
May 2025	41	34	75	45.33%
June 2025	46	13	59	22.03%
July 2025	88	30	118	25.42%
August 2025	81	42	123	34.15%
September 2025	66	38	104	36.54%

Table 1. Summary of Results from Bilirubin Clinic at HRH (April-September 2025)

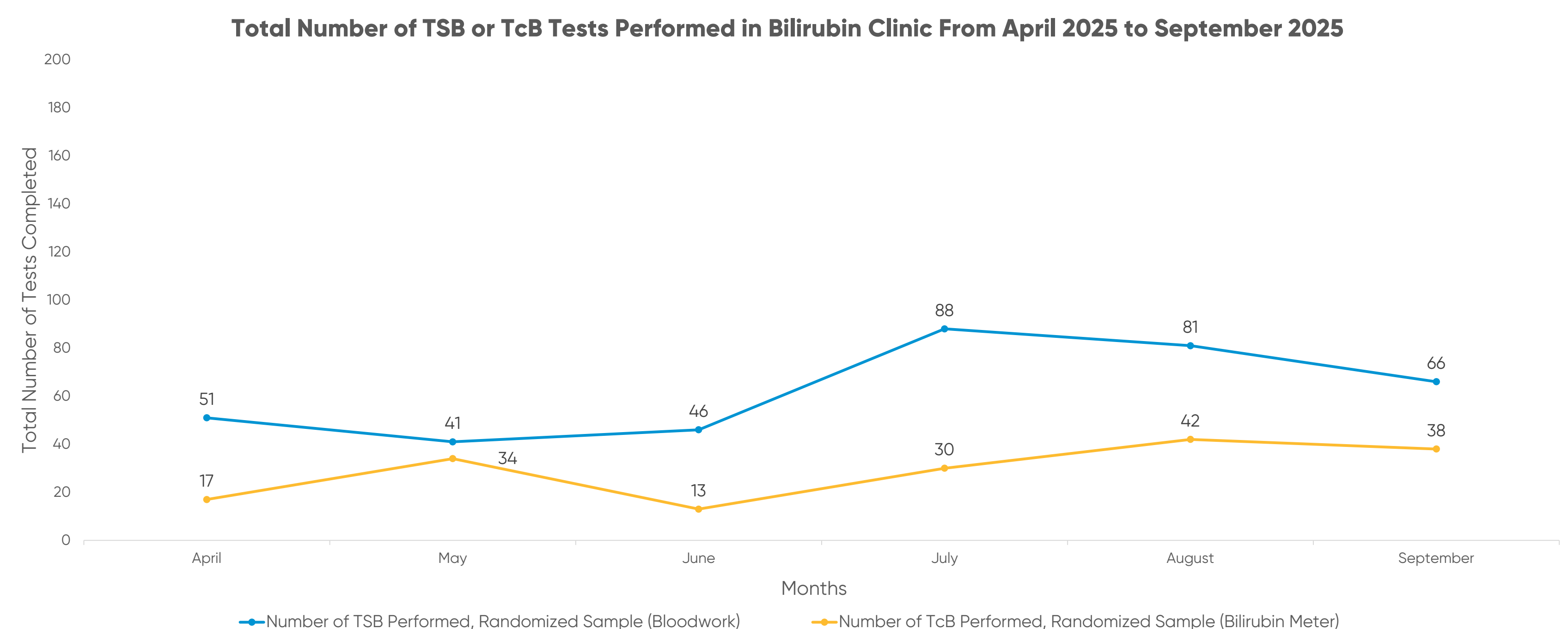


Figure 2. Total Number of TSB or TcB Tests Performed in the Bilirubin Clinic at HRH (April-September 2025)

### SUMMARY OF RESULTS

The rollout of TcB testing began on March 17th, 2025, with data collection starting early April 2025 following implementation.

Results from April to September 2025 are encouraging, showing that 22.03%-45.33% of heel blood samples were successfully avoided each month following the rollout.

Improvements were also observed in the following areas:

- Patient and family/caregiver experience: Reduction in wait time, as they no longer needed to wait for bloodwork results (~1 hour)
- Cost-saving from reduction of single-use bloodwork supplies
- Human resources: Lab Technicians can focus on processing other samples

### LESSONS LEARNED

Successful implementation of a project involving process changes and the introduction of a new device requires strong support and active engagement from key stakeholders at all levels. Formal data collection on various measures, including parent and caregiver experience, time comparisons between TcB vs. TSB and clinic revisit rates would provide a more comprehensive assessment on post-implementation. The ultimate success of the implementation of the TcB meter will be gauged at the one-year mark, with implications to broaden its use in other care areas at HRH.

