Key Points

- Each TcB meter must have an operational check completed prior to use each day
- Screen babies visibly jaundiced if ≥35/40 and >24 hours of age, or at time of their newborn screen
- Screen babies who are DAT positive without visible jaundice, including if <24 hours of age and discuss result with Neonatal RMO
- SBR should be performed if TcB is above the set cut-off level
- SBR must be urgently performed if TcB is >300 or a warning TcB level is displayed e.g. 000 / -0- / - - -

1. Purpose

This procedure outlines the requirement for use of transcutaneous bilirubinometry for babies at the Women's.

This procedure is related to: Jaundice (hyperbilirubinaemia) in newborn babies ≥ 35 weeks gestation

Where processes differ between campuses, those that refer to the Sandringham campus are differentiated by pink text or have the heading Sandringham campus (W@S).

2. Definitions and Abbreviations

TcB  Transcutaneous bilirubinometry: non-invasive screening technique used to determine the need for formal serum bilirubin (SBR) testing. TcB measurements have a linear correlation with SBRs, but the values are not the same.

SBR  serum bilirubin

NICU  Neonatal Intensive Care

WEC  Women's Emergency Centre

3. Responsibilities

All nurses, midwives and medical staff caring for babies at The Women's.

4. Procedure

A range of Drager TcB meters are in use at the RWH and Sandringham. Each device requires a daily operational check prior to use (details are on a laminated sheet attached to each device)

TcB meters are used to screen and determine the need for SBR testing in:

- babies ≥35/40 and >24 hours of age who are visibly jaundiced, and who are neither receiving, or previously received, phototherapy
- all babies ≥35/40 who are not visibly jaundiced, at the time of their newborn screening test, either prior to discharge or at home,
- babies who are DAT positive and at risk of significant jaundice, but who are not visibly jaundiced and who may be <24 hours of age – all results to be discussed with Neonatal RMO

4.1 Measuring TcB

a. Remove the jaundice meter from the charging unit and switch on
b. Perform the daily operational check as per each device
c. Note the number of measurements that the device will take as indicated on the display (n-1 indicates one measurement, n-3 indicates three measurements etc.)
d. Clean the tip of the probe with an alcohol swab

e. Select measurement site: mid-sternum is preferred, the forehead can also be used

f. Place the jaundice meter probe tip flat against the baby's skin, **not at an angle**, and press lightly until a click is heard.

g. If the meter was set to take more than one measurement lift the meter from the skin between measurements. Average results will be displayed and this value should be documented.

### 4.2 Documentation of TcB results

To avoid any confusion with SBR results, clearly record the result as a TcB level in micromol/L (µmol/L)

Document the TcB result, including date and time, on:
- the ‘Baby Observation and Feed Chart’ (MR/379a) in Maternity
- the ‘Neonatal Intensive and Special Care Chart’ in NICU (MR/96)
- the ‘RWH Emergency Department Clinicians Record (MR/43036) in WEC
- the ‘Neonatal Graphic Observation and Response Chart MR R61N in section ‘other’ (Sandringham)

### 4.3 Requirement to perform a formal SBR level

SBR should taken *(without prior TcB)* if:
1. the baby is ≥35 weeks’ gestation and <24 hours of age with visible jaundice
2. the baby is currently receiving, or has previously received phototherapy
3. the baby is <35 weeks’ gestation

SBR should be taken following TcB if

4. the TcB is above the level shown in the table below; this should be done **URGENTLY** if the TcB is >300, or if the TcB meter displays a warning reading e.g. -0-, - - 0, or 000,
5. agreed, after discussion with the Neonatal RMO in a baby who is ≥35 weeks’ gestation, DAT +ve, <24 hours old, who is not visibly jaundiced.

<table>
<thead>
<tr>
<th>Age</th>
<th>Babies ≥ 38 weeks gestation and ≥ 2500 g</th>
<th>Babies 35 – 37½ weeks gestation or &lt; 2500 g</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 24 hrs</td>
<td>TcB (µmol/L)</td>
<td>TcB (µmol/L)</td>
</tr>
<tr>
<td></td>
<td>Perform SBR if visibly jaundiced</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(if at home, refer urgently to WEC)</td>
<td></td>
</tr>
<tr>
<td>24 - 48 hrs</td>
<td>200</td>
<td>150</td>
</tr>
<tr>
<td>49 – 72 hrs</td>
<td>230</td>
<td>190</td>
</tr>
<tr>
<td>73 – 96 hrs</td>
<td>260</td>
<td>220</td>
</tr>
<tr>
<td>&gt;96 hours</td>
<td>290</td>
<td>250</td>
</tr>
</tbody>
</table>

If first TcB is within 20 µmol/L below this value it should be repeated in 24 hrs

| If any TcB is ≥ 300 µmol/L (or a warning level is displayed e.g. -0- or 000), send an urgent SBR, blood group and DAT (if not already done) and notify the neonatal medical officer about need to commence phototherapy whilst awaiting SBR result |

*If TcB used to screen DAT +ve baby <24 hrs old - discuss result with Neonatal RMO*
5. Evaluation, monitoring and reporting of compliance to this procedure

Compliance to this procedure will be monitored, evaluated and reported through reduction in invasive blood tests.

6. References

3. RWH guideline: Jaundice (hyperbilirubinaemia) in newborn babies ≥ 35 weeks gestation
4. W@S Procedure: Jaundice (Hyperbilirubinaemia) in Newborn Babies more than 35 Weeks Gestation

7. Legislation/Regulations related to this procedure

Not applicable.

8. Appendices

Not applicable.

Please ensure that you adhere to the below disclaimer:

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