PHOTOTHERAPY: NEWBORN

POLICY
Physicians order phototherapy treatment, specifying intensive or double intensive phototherapy.

Newborns requiring phototherapy are assessed for eligibility for Home Phototherapy, see Home Phototherapy.

Applicability: Phototherapy treatment occurs in the postpartum area of the Acute Perinatal Program.

PROCEDURE
1. **Gather Materials**: see appendix A
   - Bili Tx™ Phototherapy System
   - Eye shields or Biliband eye protectors (on each of the postpartum unit)
   - Incubator
   - Joey Bed™ (insulated warming bed)
   - Joey™ Dosimeter
   - LED-NeoBlue™ (Natus) light
   - Plexiglass Shield

2. **Newborn Identification**
   Prior to treatment identify the newborn using two client identifiers. Identifiers are*:
   - First name/last name
   - Birthdate
   - MRUN (medical records unit number) or
   - PHN (Personal Health Number)

3. **Bili Tx™ Phototherapy System**
   Check equipment and irradiance level using the Joey Dosimeter prior to use, see Phototherapy Equipment.
   - Short panel irradiance: Greater than (>) 90 µW/cm²/ nm
   - If the irradiance levels are not within the designated range notify the PCE/CRN

   Clean the Bili Tx Phototherapy System and panel with CaviWipes™ before and after each newborn use.
   - Select the short panel and cover to use with Bili Tx System
   - Attach the short panel to the Bili Tx Phototherapy system
   - Put the covered light panel in the Joey Bed or incubator
   - Secure the Bili Tx phototherapy system in the metal holder (see picture) below the Joey Bed or on a flat surface outside incubator

4. **Intensive Phototherapy LED-NeoBlue™ (Natus) light**
   Equipment: NeoBlue™ Light
   Check equipment prior to use, see Phototherapy Equipment Appendix A
   Identify newborn using two client identifiers*
   - Undress newborn to wearing only a diaper.
   - Place newborn supine in Joey Bed or incubator
   - Place eye shields on newborn
   - Place NeoBlue light over Joey Bed or incubator as close as possible to newborn see picture below
   - Always use “high/intensive” setting
5. Double Intensive Phototherapy LED-NeoBlue™ (Natus) light and Bili Tx™ Phototherapy System

| Equipment: NeoBlue™ Light and Bili Tx™ Phototherapy System with short panel |
| Check equipment and irradiance level of the Bili Tx™ Phototherapy System prior to use, see Phototherapy Equipment Appendix A |
| - If newborn on SRMC transfer to postpartum module if bed available |
| - Attach the short panel to the Bili Tx Phototherapy system |
| - Put the covered light panel in the Joey Bed or incubator |
| - Secure the Bili Tx phototherapy system in the metal holder (see picture above) below the Joey Bed or on a flat surface outside incubator |

- Identify newborn using two client identifiers* 
- Undress newborn to wearing only a diaper. 
- Place eye shields on the newborn 
- Place the newborn’s back directly on the covered panel, the long hose should be between the newborn’s legs. 
- Place NeoBlue light over Joey Bed or incubator as close as possible to newborn, see picture 
- Always use “high/intensive” setting

6. Monitor the Newborn

| Temperature | With every feeding |
| Feeding/Breastfeeding | Assess adequacy of breastfeeding as determined by proper latch, adequate voids and stools |
| | Document all feeds/supplements including Expressed Breast Milk (EBM), Human Donor Milk or formula amount |
| Diapers | Record wet and soiled diapers |
| Daily weight | Calculate and document percentage of weight-loss/gain |

7. Bilirubin Monitoring

Communicate the degree of risk and see the guideline for phototherapy using the Nomogram for Designation of Risk and Guidelines for Phototherapy.

| Physician | Order repeat serum bilirubin levels |
| Registered Nurse | Report bilirubin results to attending physician |

DOCUMENTATION

- Hematology/Chemistry Requisition
- Interprofessional Progress Notes
- Newborn Clinical Path
- Phototherapy Equipment binder sign out/sign form
REFERENCES


Canadian Pediatric Society: Guidelines for detection, management and prevention of hyperbilirubinemia in term and late preterm newborn infants (35 or more weeks’ gestation) (2011, Feb).


Home Phototherapy

Incubators: Care of Newborn

Joey Bed Warmer Neonatal Program BCW.


8. Dose and Device Usage Table

<table>
<thead>
<tr>
<th>Dose</th>
<th>Irradiance µW/cm²/nm</th>
<th>Device</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensive</td>
<td>30 - 35</td>
<td>NeoBlue, High setting☼☼</td>
<td>Commonly used in postpartum - previously called “Double Phototherapy”</td>
</tr>
<tr>
<td>Intensive</td>
<td>&gt; 90</td>
<td>Bili Tx Phototherapy System using short panel</td>
<td>Rarely used alone</td>
</tr>
<tr>
<td>Intensive</td>
<td>&gt; 40</td>
<td>Bili Tx Phototherapy System using long panel</td>
<td>Used in home phototherapy</td>
</tr>
<tr>
<td>Double</td>
<td>30 - 35 and &gt; 90</td>
<td>NeoBlue, High setting☼☼ and Bili Tx Phototherapy System using short panel</td>
<td>Commonly used in postpartum - previously called “Triple Phototherapy”</td>
</tr>
<tr>
<td>Standard</td>
<td>12 - 15</td>
<td>NeoBlue, Low setting☼</td>
<td>Never used</td>
</tr>
</tbody>
</table>

Key: = greater than µW/cm²/nm = microwatts per centimetre squared per nanometre

APPENDIX

Appendix A Phototherapy Equipment
Appendix B Nomogram for Designation of Risk
Appendix C Guidelines for Phototherapy
Appendix D Joey™ Dosimeter, Instructions For Use