OKLAHOMA HEALTH CARE AUTHORITY
MEDICAL PROFESSIONAL SERVICES
PRIOR AUTHORIZATION GUIDELINES

10/22/15 — Medical Authorization Director Signature / Date

Sylvia Lopez MD 22 Oct 2015 — Physician Medical Director Signature / Date

SUBJECT: **PHOTOTHERAPY FOR NEONATAL HYPERBILIRUBINEMIA**

INITIAL DATE: 9/1/2006
REVISED: 9/1/2007
UPDATE: 10/7/2015

OBJECTIVE: To provide guidelines to assure medical necessity and consistency in the prior authorization process.

DISCLAIMER: This document is not a contract, and these guidelines do not reflect or represent every conceived situation. Although all items contained in these guidelines may be met, this does not reflect, or imply, any responsibility of this agency or department to change the plan provision to include the stated service as an eligible benefit.

DEFINITIONS:

Pathologic hyperbilirubinemia in term infants is diagnosed if

- Jaundice appears in the first 24 h, after the first week of life, or lasts > 2 wk
- Total serum bilirubin (TSB) rises by > 5 mg/dL/day
- TSB is > 18 mg/dL
- Infant shows symptoms or signs of a serious illness

Some common causes of pathologic hyperbilirubinemia are

- Immune and nonimmune hemolytic anemia
- G6PD deficiency
- Hematoma resorption
- Sepsis
- Hypothyroidism

Physiologic hyperbilirubinemia occurs in almost all neonates. Shorter neonatal RBC life span increases bilirubin production; deficient conjugation due to the deficiency of uridine diphosphogluconurate glucuronosyltransferase (UGT) decreases clearance; and low bacterial levels in the intestine combined with increased hydrolysis of conjugated bilirubin increase enterohepatic circulation. Bilirubin levels can rise up to 18 mg/dL by 3 to 4 days of life (7 days in Asian infants) and fall thereafter.

- **Total Serum Bilirubin (TSB):** The combination of conjugated/direct and unconjugated/indirect bilirubin levels.
- **Conjugated/Direct Hyperbilirubinemia**: This is almost always pathologic and phototherapy is not indicated.
- **Unconjugated/Indirect Hyperbilirubinemia**: This can be pathologic or physiologic.

DESCRIPTION: The use of home phototherapy and the devices used for the treatment of neonatal jaundice that is physiologic (non-pathologic) in nature. In utero, the fetus requires larger amounts of hemoglobin for oxygenation. After birth, the need is reduced and hemoglobin is rapidly destroyed, producing increased levels of bilirubin. Jaundice results when the neonate's liver is unable to efficiently clear the accumulating bilirubin. Neonatal jaundice is a common occurrence and is frequently treated in the home setting. Infants with very high levels of bilirubin may be managed in the inpatient setting.

Physiologic jaundice in healthy term newborns follows a typical pattern. The average total serum bilirubin level usually peaks at 5 to 6 mg per dL on the third to fourth day of life and then declines over the first week after birth. Bilirubin elevations of up to 12 mg per dL, with less than 2 mg per dL of the conjugated form, can sometimes occur. Infants with multiple risk factors may develop an exaggerated form of physiologic jaundice in which the total serum bilirubin level may rise as high as 17 mg per dL.

Infants born at < 38 weeks gestation, particularly those that are breastfed, are at higher risk of developing hyperbilirubinemia. All bilirubin levels should be interpreted according to the neonates age in hours.

The initiation and duration of phototherapy is defined by a specific range of total bilirubin values based on an infant's postnatal age and the potential risk for bilirubin neurotoxicity. Clinical response to phototherapy depends on the efficacy of the phototherapy device as well as the balance between an infant's rates of bilirubin production and elimination.

The efficacy of phototherapy units varies widely because of differences in light source and configuration. The following characteristics of a device contribute to its effectiveness: (1) emission of light in the blue-to-green range that overlaps the in vivo plasma bilirubin absorption spectrum (460–490 nm); (2) irradiance of at least 30W·cm 2·nmm (confirmed with an appropriate irradiance meter calibrated over the appropriate wavelength range); (3) illumination of maximal body surface; and (4) demonstration of a decrease in total bilirubin concentrations during the first 4 to 6 hours of exposure. There is a common misconception that ultraviolet light is used for phototherapy.

An infant's total body surface area can be influenced by the disproportionate head size, especially in the more preterm infant. Complete (100%) exposure of the total body surface to light is impractical and limited by use of eye masks and diapers. Circumferential illumination (total body surface exposure from multiple directions) achieves exposure of approximately 80% of the total body surface. In clinical practice, exposure is usually planar: ventral with overhead light sources and dorsal with lighted mattresses. Approximately 35% of the total body surface (ventral or dorsal) is exposed with either method. Changing the infant's posture every 2 to 3 hours may maximize the area exposed to light. The clinical impact of phototherapy should be evident within 4 to 6 hours of initiation with an anticipated decrease of more than 2 mg/dL in serum bilirubin concentration.

DOCUMENTATION REQUIREMENTS:
Documentation submitted in order to request services or substantiate previously provided services must demonstrate through adequate objective medical records, evidence sufficient to justify the member's needs for the service in accordance with **OAC 317:30-3-1(f)(2). This would include submission of daily lab results or documentation as to why the labs were not obtained.**

GUIDELINES FOR PRIOR AUTHORIZATION:

Phototherapy is allowed for the treatment of neonatal hyperbilirubinemia without prior authorization for 5 days, billed as 1 unit per day. **Authorization is required for continuation of phototherapy services on day 6.**

With intensive phototherapy, the total serum bilirubin level should decline by 1 to 2 mg per dL within four to six hours. The bilirubin level may decline more slowly in breastfed infants (rate of 2 to 3 mg per dL per day) than in formula-fed infants. The average *rebound* bilirubin level after phototherapy is below 1 mg per dL.

NOTE: If the Total Serum Bilirubin (TSB) is at a level of 25 mg/dL or higher at any time, it is a medical emergency and the infant should be admitted immediately and directly to a hospital pediatric service for intensive phototherapy. Also, billing is limited to one unit per day, regardless of the number of phototherapy lights/units provided.

For neonates born at greater than or equal to 38 weeks gestation:

Phototherapy should be provided for infants with Total Serum Bilirubin (TSB) at the following levels and age:

- ≥15 mg/dL at 24-48 hours of age; or
- ≥18 mg/dL at 49-72 hours of age; or
- ≥20 mg/dL at 73 hours of age or older.

The neonate will have received at least 5 days of phototherapy by the time the authorization request is necessary; phototherapy should be discontinued for neonates born at ≥ 38 weeks gestation when TSB reaches ≤ **14mg/dL.**

For neonates born at greater than or equal to 35 weeks gestation, but less than 38 weeks gestation:

The neonate will have received at least 5 days of phototherapy by the time the authorization request is necessary; phototherapy should be discontinued for neonates born at ≥ 35 weeks gestation but < 38 weeks gestation when TSB reaches ≤ **12mg/dL.**

If home phototherapy is requested for neonates born at less that 35 weeks gestation, refer for physician review.

REFERENCES:

1. Oklahoma Health Care Authority; Policies & Rules, OAC 317:30-3-1
2. American Academy Of Pediatrics Clinical Practice Guideline Subcommittee on Hyperbilirubinemia Management of Hyperbilirubinemia in the Newborn Infant 35 or More Weeks of Gestation; *Reaffirmed July 2014* *http://pediatrics.aappublications.org/content/114/1/297.full#sec-6*
3. Bhutani, Vinod K.,MD and The Committee On Fetus And Newborn Technical Report, Phototherapy to Prevent Severe Neonatal Hyperbilirubinemia in the Newborn Infant 35 or More Weeks of Gestation, www.pediatrics.org/cgi/doi/10.1542/peds.2011-1494.
4. Muchowski, Karen E. MD, Evaluation and Treatment of Neonatal Hyperbilirubinemia;, Naval Hospital Camp Pendleton Family Medicine Residency Program, Camp Pendleton, California; *Am Fam Physician.* 2014 Jun 1;89(11):873-878.
5. Porter, Meredith L., Cpt, MC, USA, and Beth L. Dennis, Maj, MC, USA, Hyperbilirubinemia in the Term Newborn, Dewitt Army Community Hospital, Fort Belvoir, Virginia, *Am Fam Physician.* 2002 Feb 15;65(4):599-607.
6. Widness, John A. M.D., Management of Hyperbilirubinemia in the Newborn Period, University of Iowa Children's Hospital, 2015.
7. *Anthem* Home Phototherapy Devices for Neonatal Hyperbilirubinemia Clinical UM Guideline, 1/13/2015.
8. *Excellus BCBS* Medical Policy, Home Phototherapy for Hyperbilirubinemia, 8/27/15.

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