

Include in the pathway (Patients must be all of these):

- Infants with unconjugated bilirubin of greater than 15 if > 38 weeks gestation and greater than 13 if 35-38 weeks gestational age
- Infant 1-7 days of age
- Infants with a gestational age of 35 or more weeks
- Infants without clinical signs or symptoms of sepsis

Exclude from the pathway (Patients may be any of these):

- Infant less than 35 weeks gestation
- Infants who have an elevation of direct or conjugated bilirubin
- Infants with clinical signs or symptoms of sepsis

Patients should be considered for removal from the pathway if;

(nursing staff should contact physician if any of the following apply)

- Total serum bilirubin does not decrease or continues to rise despite intensive phototherapy (strongly suggest the presence of hemolysis or G6PD deficiency)
- Infant with unstable vital signs, hypothermia, or temperature > 38.0°.

Criteria for Admission

- Infants greater than 38 weeks gestational age with an unconjugated bilirubin of greater than 15
- Infants 35-38 weeks gestation with an unconjugated bilirubin of greater than 13

Criteria for Discharge

- Infants greater than 38 weeks gestation: unconjugated bilirubin less than 15
- Infants 35-38 weeks gestation: unconjugated bilirubin less than 12
- Maintaining or gaining weight
- Taking adequate amounts breastmilk or formula
- Safe home environment and Primary Medical Doctor identified

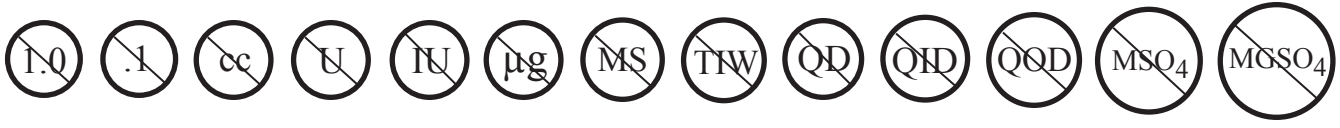
Background Information:

- Infants with hyperbilirubinemia may and should continue to breastfeed. May supplement with expressed breast milk or formula if the infant's intake is inadequate, weight loss is excessive, or the infant appears dehydrated.
- Risk factors most frequently associated with severe hyperbilirubinemia are breastfeeding, gestation below 38 weeks, significant jaundice in a previous sibling, and jaundice within the first 24 hours of life.
- Jaundice is usually first seen in the face and then progresses caudally to the trunk and extremities.
- Severe hyperbilirubinemia in an African American infant should always raise the possibility of G6PD deficiency.
- Intensive phototherapy can decrease the initial bilirubin level 30 to 40% in the first 24 hours with the most significant decline in the first 4 to 6 hours.
- About 50% of term and 80% of preterm infants develop jaundice. Jaundice usually appears 2 to 4 days after birth and disappears 1 to 2 weeks later.
- Infants with a total bilirubin > 25 mg/dL - consider exchange transfusion

Goals:

- Promote and support successful breastfeeding
- Prevent acute bilirubin encephalopathy

AAP policy, Clinical Practice Guidelines on Management of Hyperbilirubinemia in the Newborn Infant 35 or More Weeks of Gestation, 2004



DRUG SENSITIVITY: _____ WT: _____ kg
 ORDERS: GENERIC EQUIVELANT WILL BE DISPENSED UNLESS ORDER SPECIFIES "DO NOT SUBSTITUTE"

General

Admitting physician: _____
 Attending physician: _____
 Primary service: Hospitalist Team A Team B _____
 Patient Status: Admit
 Admission Diagnosis: Hyperbilirubinemia
 Condition: Stable
 Code status: Full Code or _____
 Isolation: Standard

Phototherapy

- Double bank phototherapy - initiate within 1 hour of admission
- Triple bank phototherapy - initiate within 1 hour of admission

Dietary

- Breastfeed or bottle-feed (formula or expressed breast milk) every 2-3 hours

IVF

- D5-1/4 NS at maintenance rate
- RN communication, IV: D5-1/4 NS with KCl 20 mEq/L at maintenance rate after first void using the 4:2:1 calculation.
- If Then, Feedings: Wean IV fluids to saline lock, as PO's improve.

Nursing Care

- No restrictions
- Measure weight daily.
- Lactation referral if problems with breast feeding
- Isolette per hospital guidelines

Labs – Today

- | | | |
|---|----------|-----------------|
| <input type="checkbox"/> Bilirubin Panel | Priority | Source or Other |
| <input type="checkbox"/> CBC Manual Diff Included | Routine | every__hours |
| <input type="checkbox"/> Retic count | Stat | |
| <input type="checkbox"/> Glucose 6 Phosphate Dehydrog | Routine | |
| | | |
| <input type="checkbox"/> CMP | Routine | |
| <input type="checkbox"/> Blood Type (ABO/Rh) | Routine | |
| <input type="checkbox"/> Direct Antiglobulin test | Routine | |

If suggested by ethnic or geographic origin or if poor response to phototherapy

Hyperbilirubinemia

Patient Label

0032





DRUG SENSITIVITY: _____ WT: _____ kg
ORDERS: GENERIC EQUIVELANT WILL BE DISPENSED UNLESS ORDER SPECIFIES "DO NOT SUBSTITUTE"

Notify MD for:

- Notify MD if, VS Temp. Call physician if temperature > 38°C
- Notify MD if, Lab. If total serum bilirubin > 20 mg/dL, repeat bilirubin panel in 4 hours and call physician
- Notify MD if, Feeding. If oral intake is not adequate,
- Notify physician if infant's weight loss from birth is > 12% or there is clinical or biochemical evidence of dehydration. May attempt oral rehydration with breast milk or formula.

Education

- Education per protocol; Hyperbilirubinemia.

Discharge planning

- RN Communication, DC Plan: FAX discharge instructions once signed by attending to primary care physician

Physician's Signature / ID Number: _____ Date: ____/____/____ Time: _____

Hyperbilirubinemia

Patient Label

0032





What is jaundice?

Jaundice is caused by the breakdown of red blood cells. When the old cells break down, hemoglobin is changed into bilirubin and removed by the liver. If the liver can't get rid of the bilirubin, jaundice develops.

What causes jaundice?

During the first few days of life, a baby's body can't get rid of bilirubin very well. Some of the reasons why are:

- Not getting enough calories
- Not having enough water in the body (dehydration)
- If red blood cells break down.
- An infection can cause the liver not to work very well.

Should I be worried?

Usually, a low level of bilirubin is not a reason to worry. Children with a large amount of bilirubin may have seizures or brain damage.

How will I know my baby has jaundice?

If your baby has jaundice, you might see:

- Yellow coloring of the skin. It usually begins on the face and moves down the body.
- Whites of eyes may look yellow
- May not be feeding well
- Hard to wake up
- Not as active as usual

How is jaundice diagnosed?

There are different kinds of jaundice that are caused by different things.

- If jaundice appears in the first 24 hours of life, it is very serious. Take your baby to the doctor right away.
- If it happens on the second or third day of life, it is usually normal.
- If it happens on the third day to a week, it may be caused by an infection.
- Breastmilk jaundice usually happens after the first week and peaks at 10-21 days.



What kind of tests should my child have?

Your child will most likely have blood tests that will show:

- The level of bilirubin
- The number of red blood cells

How is jaundice treated?

It depends on why your baby has jaundice and the how much bilirubin is in the blood. The goal is to keep the level of bilirubin from getting too high.

Phototherapy

- This is the most common treatment
- The baby is put under a special blue light
- All parts of the skin need to be exposed to the light
- Baby should not be kept out from the light for more than 30 minutes at a time
- Baby will wear an eye mask to protect the eyes from the light
- Baby's temperature is watched closely
- Blood levels of bilirubin are checked to see if the treatment is working
- Phototherapy usually takes several hours to begin working

Fiberoptic blanket is a special blanket that is put under the baby and may be used alone or with phototherapy.

Exchange Transfusion may be used to replace the damaged blood with fresh blood. This helps increase the red blood cell count and lower the levels of bilirubin.

When should I call the doctor?

If you see any of these signs, call your child's doctor right away:

- Not eating very well
- Your baby is less than a day old and has the signs of jaundice.
- The jaundice spreads or gets worse
- A fever of 38.0°C or 100.4°F (temperature taken in the bottom)
- If your child starts to look or act sick

Interdisciplinary Patient/Family Learning Evaluation

Initial Patient/Family Learner Assessment

A learning evaluation is done with each initial teaching intervention for each learner. Teaching interventions should be documented in an ongoing manner with ongoing assessment and evaluation of readiness to learn, barriers to learning, and learning outcomes. Use your department or topic specific Interdisciplinary Patient/Family Education Documentation forms for ongoing patient/parent/family education documentation. Use this form for the initial assessment of a learner and keep this form with the ongoing patient/family education documentation forms.

| Initial Learner Evaluation (assess one or multiple learners) | | | |
|--|--|--|--|
| 1. _____ Date _____ (Pt./Primary care giver) | 2. _____ Date _____ learner | 3. _____ Date _____ learner | 4. _____ Date _____ learner |
| Prior Knowledge of Plan of Care or care needs: <input type="checkbox"/> Comprehensive <input type="checkbox"/> Good <input type="checkbox"/> Limited <input type="checkbox"/> None <input type="checkbox"/> Other _____ | Prior Knowledge of Plan of Care or care needs: <input type="checkbox"/> Comprehensive <input type="checkbox"/> Good <input type="checkbox"/> Limited <input type="checkbox"/> None <input type="checkbox"/> Other _____ | Prior Knowledge of Plan of Care or care needs: <input type="checkbox"/> Comprehensive <input type="checkbox"/> Good <input type="checkbox"/> Limited <input type="checkbox"/> None <input type="checkbox"/> Other _____ | Prior Knowledge of Plan of Care or care needs: <input type="checkbox"/> Comprehensive <input type="checkbox"/> Good <input type="checkbox"/> Limited <input type="checkbox"/> None <input type="checkbox"/> Other _____ |
| Primary Language: check <input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Hmong Other _____ <input type="checkbox"/> Writes <input type="checkbox"/> Reads | Primary Language: check <input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Hmong Other _____ <input type="checkbox"/> Writes <input type="checkbox"/> Reads | Primary Language: check <input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Hmong Other _____ <input type="checkbox"/> Writes <input type="checkbox"/> Reads | Primary Language: check <input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Hmong Other _____ <input type="checkbox"/> Writes <input type="checkbox"/> Reads |
| Readiness to learn: check <input type="checkbox"/> Asking pertinent questions <input type="checkbox"/> Actively Listening <input type="checkbox"/> Unreceptive <input type="checkbox"/> No interest demonstrated <input type="checkbox"/> Distracted | Readiness to learn: check <input type="checkbox"/> Asking pertinent questions <input type="checkbox"/> Actively Listening <input type="checkbox"/> Unreceptive <input type="checkbox"/> No interest demonstrated <input type="checkbox"/> Distracted | Readiness to learn: check <input type="checkbox"/> Asking pertinent questions <input type="checkbox"/> Actively Listening <input type="checkbox"/> Unreceptive <input type="checkbox"/> No interest demonstrated <input type="checkbox"/> Distracted | Readiness to learn: check <input type="checkbox"/> Asking pertinent questions <input type="checkbox"/> Actively Listening <input type="checkbox"/> Unreceptive <input type="checkbox"/> No interest demonstrated <input type="checkbox"/> Distracted |
| Barriers to learning: check <input type="checkbox"/> No barriers <input type="checkbox"/> Low literacy or Edu level <input type="checkbox"/> Cultural <input type="checkbox"/> Language <input type="checkbox"/> Visual, hearing, speaking <input type="checkbox"/> Religious, spiritual <input type="checkbox"/> Cognitive <input type="checkbox"/> Emotional <input type="checkbox"/> Motivation <input type="checkbox"/> Pain or fatigue <input type="checkbox"/> Other _____ Accommodation: <input type="checkbox"/> Interpreter <input type="checkbox"/> Audio <input type="checkbox"/> Visuals <input type="checkbox"/> Handouts <input type="checkbox"/> Explanations <input type="checkbox"/> Demonstrations <input type="checkbox"/> Other | Barriers to learning: check <input type="checkbox"/> No barriers <input type="checkbox"/> Low literacy or Edu level <input type="checkbox"/> Cultural <input type="checkbox"/> Language <input type="checkbox"/> Visual, hearing, speaking <input type="checkbox"/> Religious, spiritual <input type="checkbox"/> Cognitive <input type="checkbox"/> Emotional <input type="checkbox"/> Motivation <input type="checkbox"/> Pain or fatigue <input type="checkbox"/> Other _____ Accommodation: <input type="checkbox"/> Interpreter <input type="checkbox"/> Audio <input type="checkbox"/> Visuals <input type="checkbox"/> Handouts <input type="checkbox"/> Explanations <input type="checkbox"/> Demonstrations <input type="checkbox"/> Other | Barriers to learning: check <input type="checkbox"/> No barriers <input type="checkbox"/> Low literacy or Edu level <input type="checkbox"/> Cultural <input type="checkbox"/> Language <input type="checkbox"/> Visual, hearing, speaking <input type="checkbox"/> Religious, spiritual <input type="checkbox"/> Cognitive <input type="checkbox"/> Emotional <input type="checkbox"/> Motivation <input type="checkbox"/> Pain or fatigue <input type="checkbox"/> Other _____ Accommodation: <input type="checkbox"/> Interpreter <input type="checkbox"/> Audio <input type="checkbox"/> Visuals <input type="checkbox"/> Handouts <input type="checkbox"/> Explanations <input type="checkbox"/> Demonstrations <input type="checkbox"/> Other | Barriers to learning: check <input type="checkbox"/> No barriers <input type="checkbox"/> Low literacy or Edu level <input type="checkbox"/> Cultural <input type="checkbox"/> Language <input type="checkbox"/> Visual, hearing, speaking <input type="checkbox"/> Religious, spiritual <input type="checkbox"/> Cognitive <input type="checkbox"/> Emotional <input type="checkbox"/> Motivation <input type="checkbox"/> Pain or fatigue <input type="checkbox"/> Other _____ Accommodation: <input type="checkbox"/> Interpreter <input type="checkbox"/> Audio <input type="checkbox"/> Visuals <input type="checkbox"/> Handouts <input type="checkbox"/> Explanations <input type="checkbox"/> Demonstrations <input type="checkbox"/> Other |
| Learning Preferences: <input type="checkbox"/> Demonstration <input type="checkbox"/> Written handouts <input type="checkbox"/> Verbal or audio <input type="checkbox"/> Video or TV <input type="checkbox"/> Hands on <input type="checkbox"/> Other _____ | Learning Preferences: <input type="checkbox"/> Demonstration <input type="checkbox"/> Written handouts <input type="checkbox"/> Verbal or audio <input type="checkbox"/> Video or TV <input type="checkbox"/> Hands on <input type="checkbox"/> Other _____ | Learning Preferences: <input type="checkbox"/> Demonstration <input type="checkbox"/> Written handouts <input type="checkbox"/> Verbal or audio <input type="checkbox"/> Video or TV <input type="checkbox"/> Hands on <input type="checkbox"/> Other _____ | Learning Preferences: <input type="checkbox"/> Demonstration <input type="checkbox"/> Written handouts <input type="checkbox"/> Verbal or audio <input type="checkbox"/> Video or TV <input type="checkbox"/> Hands on <input type="checkbox"/> Other _____ |
| Signature _____ Date _____ | Signature _____ Date _____ | Signature _____ Date _____ | Signature _____ Date _____ |
| Signature _____ Date _____ | Signature _____ Date _____ | Signature _____ Date _____ | Signature _____ Date _____ |

Patient Label



pathway



Patient/Family Learner Assessment

Discharge Sheet

For Hospital Use Only

Dictation:

1-800-411-1001 (#963)

Discharge sheet FAXed to primary care physician (initial/date) _____

D/S Job #: _____

Follow-up appointment SCHEDULED with primary care physician (initial/date) _____

Patient's Name: _____

Discharge date: _____

Dx: 1) Hyperbilirubinemia

Hospital Course

Complications during hospitalization: _____

DISCHARGE CONDITION: _____

Admit T bili _____

Discharge T bili _____

Admit weight: _____

Discharge weight: _____

Instruction to Patient

Activity: Routine Newborn Care, indirect sunlight exposure until yellow skin color is gone.

Diet: Breast milk or formula on demand.

Medications: See Medication Reconciliation Form

Additional instructions:

Reference: Patient Education Sheet

Signed: _____ M.D.

Signature of Parent or Guardian

Attending Physician

Attending Resident

Primary Care Physician

City

Hyperbilirubinemia

0083



Pathway 3/2012



Patient Label

Discharge Instructions