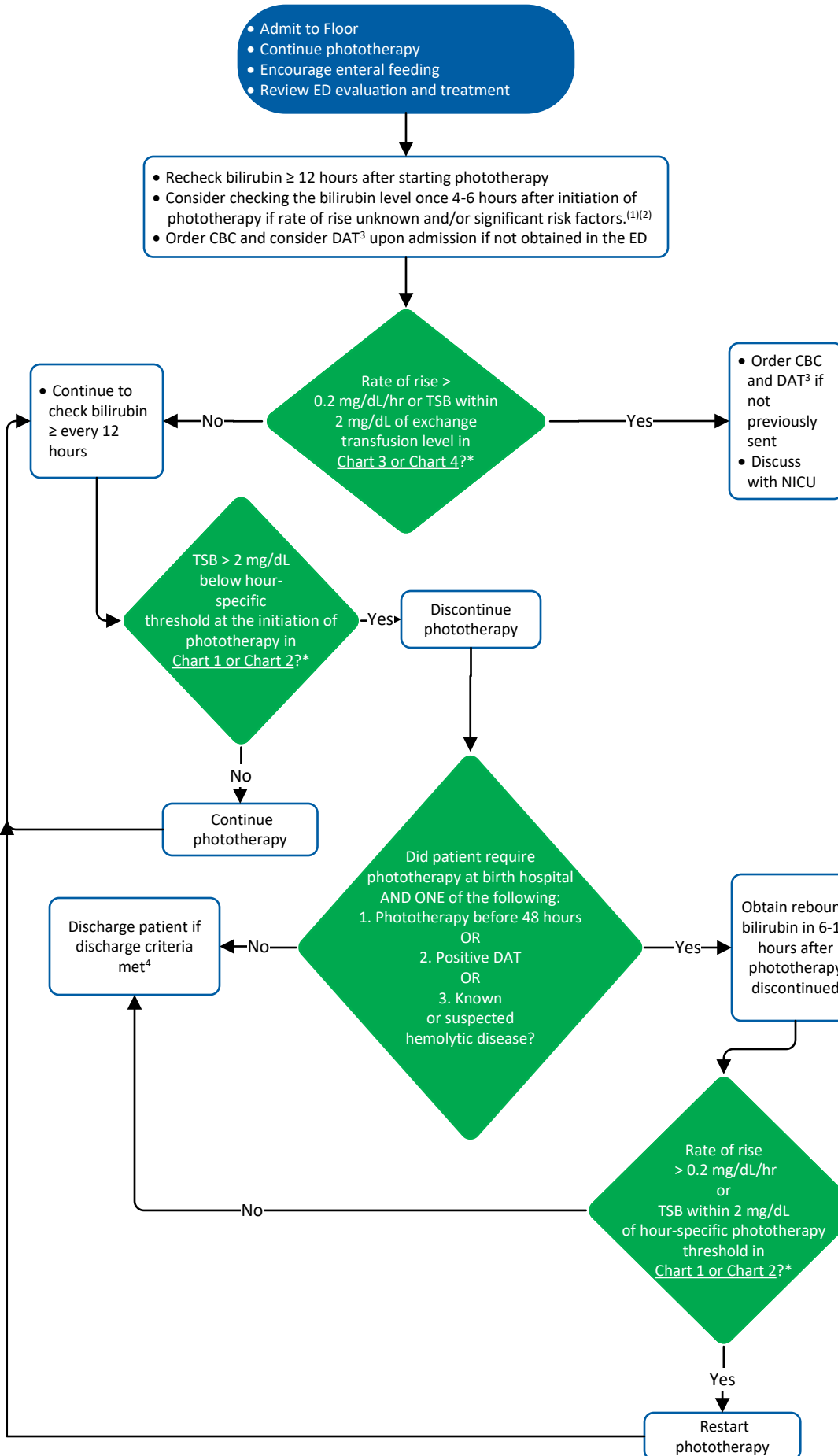


# Hyperbilirubinemia Pathway: Inpatient Management

For use in patients  $\leq 14$  days old, gestational age  $\geq 35$  weeks, and documented elevated total serum bilirubin (TSB)



December 2024



## EXCLUSION CRITERIA

- Concern for other associated illnesses: infection/sepsis, cardiac disease, metabolic disease
- Elevated direct bilirubin – consult Hepatology
- Patients in the NICU/PICU

## BIRTH HISTORY

- Maternal and infant blood type, RhD, DAT
- Gestational age, birth date and time, birth weight
- Delivery complications
- History of phototherapy during birth hospitalization
- Feeding history

## SIGNIFICANT HYPERBILIRUBINEMIA RISK FACTORS<sup>1</sup>

- Gestational age <40 weeks
- Scalp hematoma or significant bruising
- Down Syndrome
- Macrosomic infant of diabetic mother
- Exclusive breastfeeding with suboptimal intake
- Parent or sibling requiring phototherapy or exchange transfusion
- Jaundice in 1<sup>st</sup> 24 hours after birth
- Hemolysis from any cause, or rapid rate of increase of TSB or TcB
  - >0.3 mg/dL per hour in the 1<sup>st</sup> 24 hrs OR
  - >0.2 mg/dL per hour thereafter
- Phototherapy during birth hospitalization
- Discharge TSB or TcB level close to the phototherapy threshold

## NEUROTOXICITY RISK FACTORS<sup>2</sup>

- Gestational age < 38 weeks
- Isoimmune hemolytic disease
- Other hemolytic disease (e.g. G6PD deficiency)
- Albumin < 3.0 g/dL
- Significant clinical instability in the previous 24 hours, such as sepsis, acidosis, asphyxia, temperature instability, significant lethargy

## ADDITIONAL LABS<sup>3</sup>

- Obtain a DAT if: mom's blood type is unknown, is blood type O and/or Rh- OR she has a history of +antibody screen

## NUTRITION AND HYDRATION

- **Nutrition**
  - Encourage enteral feeding every 2-3 hours
  - Limit time away from phototherapy isolette to 20-30 minutes
  - If breast-feeding, consider lactation consult
- **Hydration**
  - If signs of dehydration present, trial enteral hydration first and if unable to correct or failed trial, consider starting mIVF

## DISCHARGE CRITERIA<sup>4</sup>

- Phototherapy discontinued
- Adequate PO intake
- Family education completed
- Refer to **Appendix A** for PCP follow-up and bilirubin level recheck recommendations

\*THESE VALUES MAY BE PLOTTED ON [BILITOOL.ORG](http://BILITOOL.ORG)

# Hyperbilirubinemia Pathway: Inpatient Management

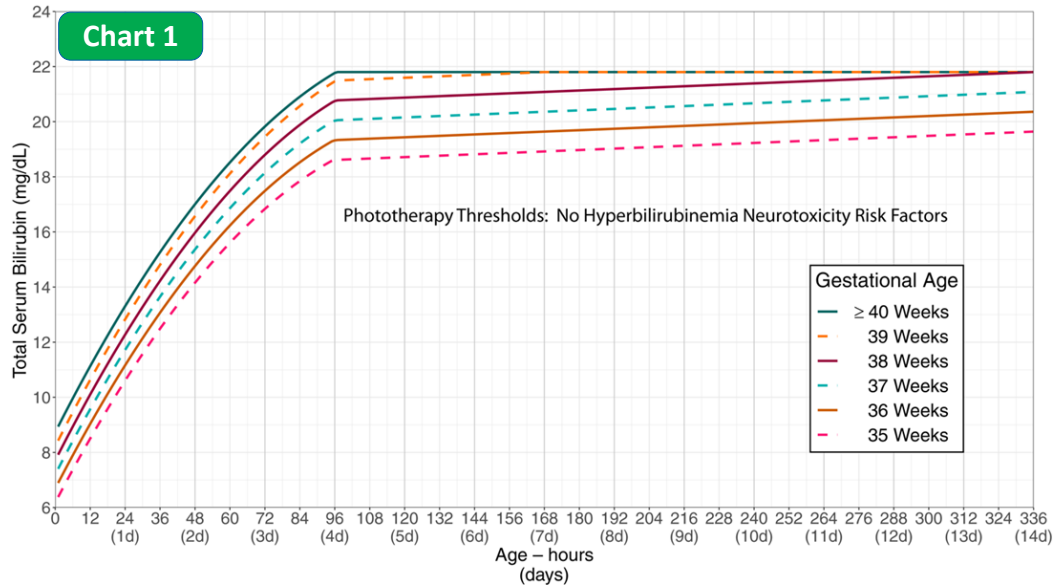
For use in patients  $\leq 14$  days old, gestational age  $\geq 35$  weeks, and historical or documented

elevated total serum bilirubin (TSB)

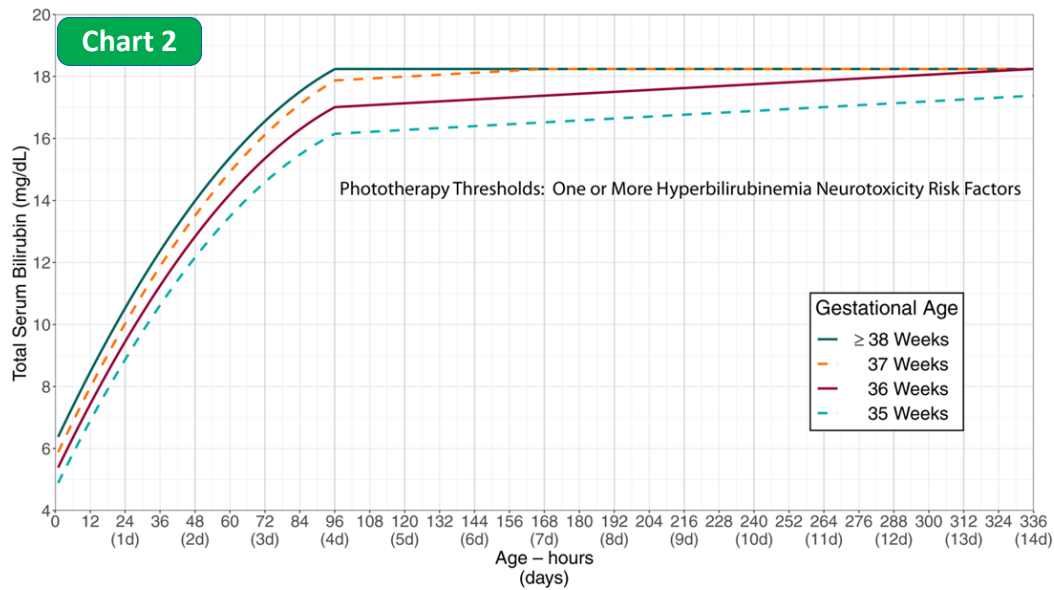
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## Phototherapy Thresholds: No Hyperbilirubinemia Neurotoxicity Risk Factors



## Phototherapy Thresholds: One or More Hyperbilirubinemia Neurotoxicity Risk Factors



Alex R. Kemper, Thomas B. Newman, Jonathan L. Slaughter, M. Jeffrey Maisels, Jon F. Watchko, Stephen M. Downs, Randall W. Grout, David G. Bundy, Ann R. Stark, Debra L. Bogen, Alison Volpe Holmes, Lori B. Feldman-Winter, Vinod K. Bhutani, Steven R. Brown, Gabriela M. Maradiaga Panayotti, Kymika Okechukwu, Peter D. Rappo, Terri L. Russell; Clinical Practice Guideline Revision: Management of Hyperbilirubinemia in the Newborn Infant 35 or More Weeks of Gestation. *Pediatrics* August 2022; 150 (3): e2022058859. 10.1542/peds.2022-058859

# Hyperbilirubinemia Pathway: Inpatient Management

For use in patients  $\leq 14$  days old, gestational age  $\geq 35$  weeks, and historical or documented

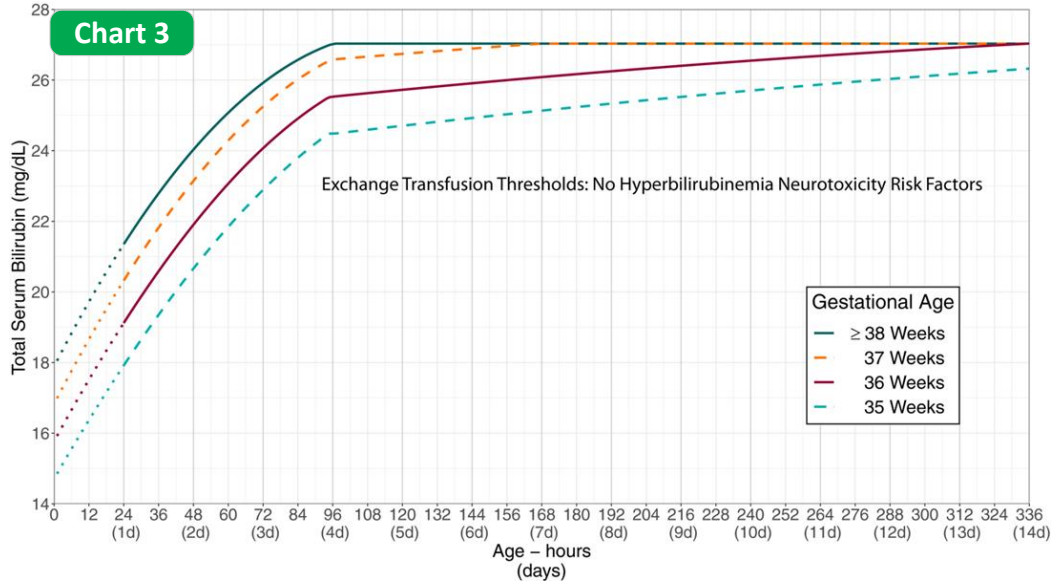
elevated total serum bilirubin (TSB)



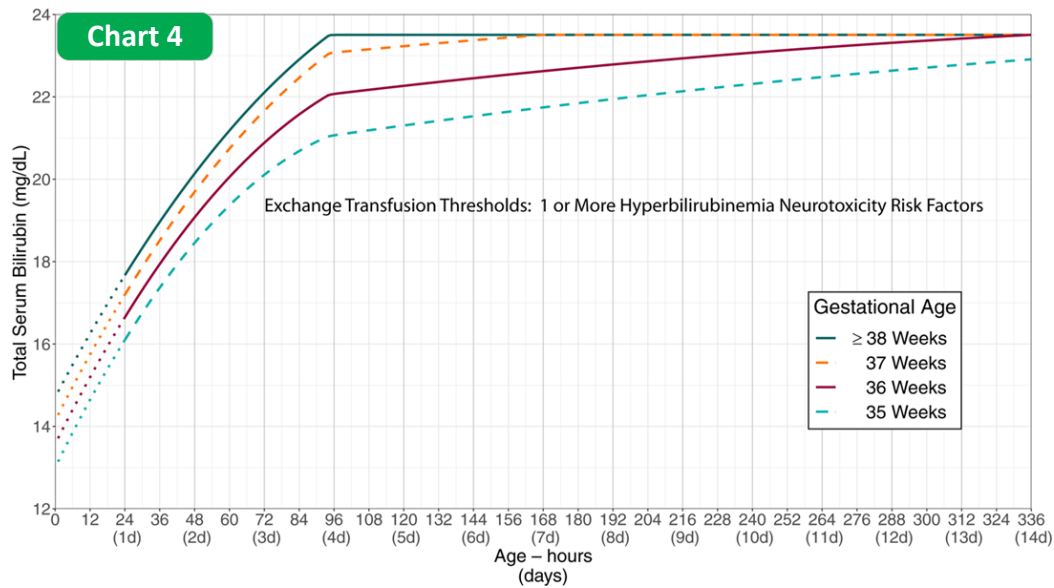
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## Exchange Transfusion Thresholds: No Hyperbilirubinemia Neurotoxicity Risk Factors



## Exchange Transfusion Thresholds: One or More Hyperbilirubinemia Neurotoxicity Risk Factors



Alex R. Kemper, Thomas B. Newman, Jonathan L. Slaughter, M. Jeffrey Maisels, Jon F. Watchko, Stephen M. Downs, Randall W. Grout, David G. Bundy, Ann R. Stark, Debra L. Bogen, Alison Volpe Holmes, Lori B. Feldman-Winter, Vinod K. Bhutani, Steven R. Brown, Gabriela M. Maradiaga Panayotti, Kymika Okechukwu, Peter D. Rappo, Terri L. Russell; Clinical Practice Guideline Revision: Management of Hyperbilirubinemia in the Newborn Infant 35 or More Weeks of Gestation. *Pediatrics* August 2022; 150 (3): e2022058859. 10.1542/peds.2022-058859

# Hyperbilirubinemia Pathway: Inpatient Management

For use in patients  $\leq 14$  days old, gestational age  $\geq 35$  weeks, and historical or documented

elevated total serum bilirubin (TSB)



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## APPENDIX A

### Follow up Recommendations From AAP Guidelines Based on Risk of Rebound Hyperbilirubinemia:

Infant	Follow up TSB Recommendations
If infant: Required phototherapy during birth hospitalization <b>AND</b> Required phototherapy before 48 hours of age <b>OR</b> Had a positive DAT <b>OR</b> Known or suspected hemolytic disease	Follow up TSB the day after phototherapy discontinuation. Confirm PCP follow up with family and/or PCP.
If infant: Required phototherapy during birth hospitalization <b>AND</b> Readmitted for exceeding the phototherapy threshold	Follow up TSB the day after phototherapy discontinuation. Confirm PCP follow up with family and/or PCP.
If infant: Readmitted for phototherapy, but did not require phototherapy during birth hospitalization	Follow up TSB in 1-2 days after discontinuation <b>OR</b> clinical follow up to determine need for TSB. Confirm PCP follow up with family and/or PCP.
If infant: Treated with home phototherapy who exceeded the phototherapy threshold	Follow up TSB in 1-2 days after discontinuation <b>OR</b> clinical follow up to determine need for TSB. Confirm PCP follow up with family and/or PCP.

These are recommended follow up guidelines. Use your clinical judgement to determine the optimal timeline for when patients and families should follow up with their primary care provider. Consider ED referral if PCP follow up not feasible.