



Clinical Practice Alert: Newborn Hyperbilirubinemia

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To: CMNRP Partners

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Situation: The American Academy of Pediatrics (AAP) released a revised newborn hyperbilirubinemia (hyperbili) clinical practice guideline (CPG) in August 2022 (Kemper et al., 2022). A popular online calculator, <https://bilitool.org/>, is used by many clinicians when making treatment and follow-up decisions. **This calculator has been updated with the new AAP cut-offs for the initiation of phototherapy.** The AAP treatment cut-off is now higher than treatment thresholds specified in the Provincial Council for Maternal and Child Health (PCMCH) and Canadian Paediatric Society (CPS) CPGs on hyperbilirubinemia.

Background: In 2004, the AAP released the hyperbili CPG and in 2009 they published clarifications and modifications. Kemper et al. recently revised the AAP CPG with supplementary information which now includes new treatment thresholds. The authors cite new evidence regarding bilirubin concentrations that are associated with neurotoxicity from hyperbilirubinemia, as well as reports of phototherapy-associated adverse effects. There have been a variety of responses to this updated CPG which can be found at the bottom of the AAP webpage.

Assessment: Clinicians using bilitool.org may inadvertently make clinical decisions based on the AAP's higher serum bilirubin thresholds which may differ from treatment decisions based on the Canadian guidelines. There is a risk that some newborns will experience adverse events if clinicians are not aware of the differences between these resources. It is important to note that the Healthcare Insurance Reciprocal of Canada (HIROC) refers to kernicterus as "a never event". Continuing to follow the more conservative Canadian guidelines, until any possible future revisions, will help meet this HIROC expectation and provide excellent care for patients.

Recommendation: Clinicians should continue to use the CPS and/or PCMCH CPGs until changes to recommendations for Canadian clinical practice have been published by the CPS. CMNRP will continue to monitor CPS and PCMCH publications for any changes to provincial and/or national recommendations. At this time, clinicians should refrain from using the bilitool.org or use extreme caution when interpreting the results.

A mobile app, developed by the Association of Ontario Midwives (AOM), is based on the CPS recommendations and may be considered an alternative to the bilitool.org. We advise close comparison with your hospital policies and procedures before this is integrated into clinical practice at your organization. For clarity, a screenshot of the app is included below.



Mobile App: Bili-Tool

Download the Bili-Tool App to your Android or iOS device to plot TSB/TcB levels on a treatment threshold graph. This app will indicate if an infant requires treatment based on their bilirubin reading, and contains a condensed version of the CPG and a weight tracking calculator.

[Click for iOS](#)

[Click for Android](#)



The hyperbili webpage on the CMNRP website has recently been revised.

http://www.cmnrp.ca/en/cmnrp/Hyperbilirubinemia_Toolkit_p4958.html

References:

Barrington, K. J., Sankaran, K., & the Canadian Paediatric Society - Fetus and Newborn Committee. (2007, reaffirmed 2018). Guidelines for detection, management and prevention of hyperbilirubinemia in term and late preterm newborn infants (35 or more weeks' gestation). <http://www.cps.ca/en/documents/position/hyperbilirubinemia-newborn>

Health Insurance Reciprocal of Canada (HIROC). (2020, Sept). Failure to identify/manage neonatal hyperbilirubinemia. <https://www.hiroc.com/resources/risk-reference-sheets/failure-identifymanage-neonatal-hyperbilirubinemia>

Kemper AR, Newman TB, Slaughter JL, et al. (2022). Clinical Practice Guideline Revision: Management of Hyperbilirubinemia in the Newborn Infant 35 or More Weeks of Gestation. *Pediatrics*, 150(3): e2022058859. 10.1542/peds.2022-058859

Provincial Council for Maternal and Child Health (PCMCH) & Ministry of Health and Long-Term Care. (2018). Clinical Pathway Handbook for Hyperbilirubinemia in Term and Late Pre-Term Infants (≥ 35 weeks). https://www.pcmch.on.ca/wp-content/uploads/2022/02/Clinical-Handbook-Hyperbili_2018MAY23.pdf

Additional Resources:

Provincial Council for Maternal and Child Health (PCMCH). (2022). [Hyperbilirubinemia Screening: Clinical Pathway Handbook – PCMCH](#) [website]