Deferred (delayed) cord clamping and hyperbilirubinemia

In March 2022, the CPS and the SOGC released a position statement recommending deferred cord clamping (DCC) for 60 seconds. In their statement, cord clamping beyond 60 seconds for term singletons is not recommended due to the increased risk for hyperbilirubinemia requiring phototherapy. (1)

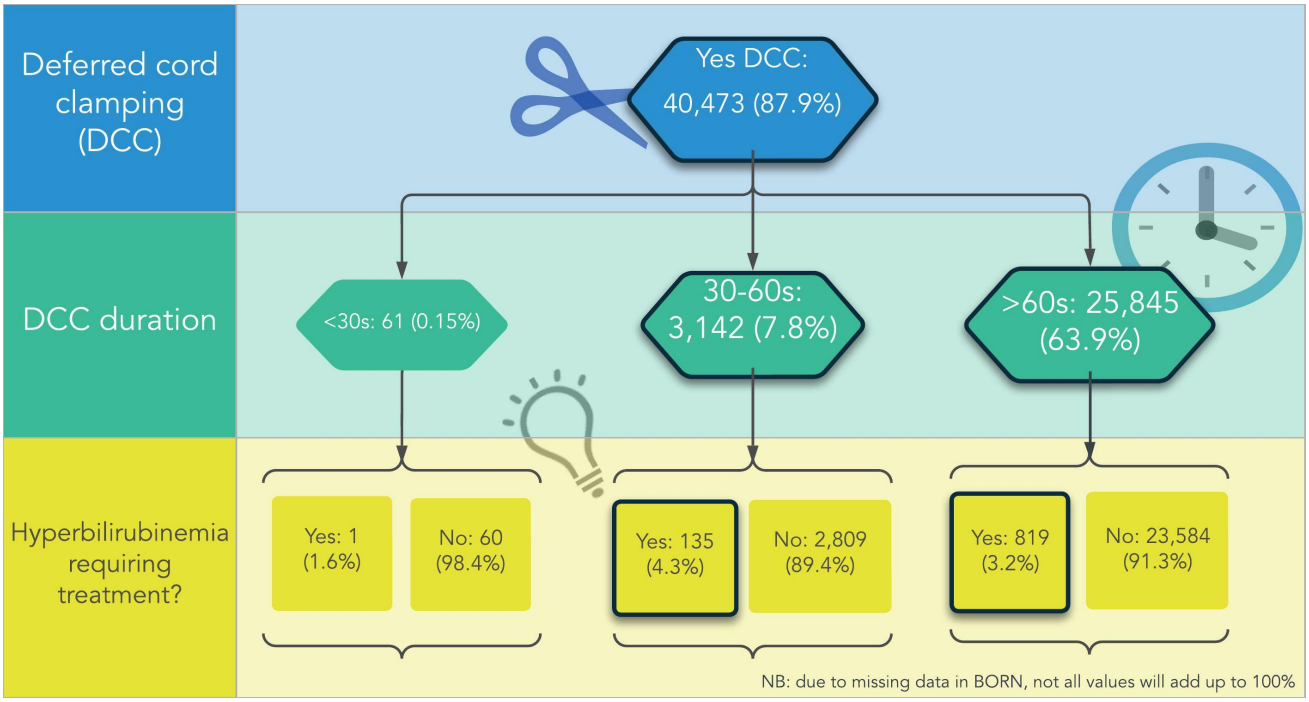
This clinical data discussion examines Ontario midwifery practice of DCC and demonstrates support for offering clients with well, term infants the opportunity to defer cord clamping until the umbilical cord ceases to pulsate and the transfer of placental blood is complete (which is generally beyond the 60 seconds in recommendation 2 of the CPS/SOGC statement). Informed choice discussions (ICDs) with clients should include the CPS statement and the information from the BORN data in this document.

What does midwifery practice of DCC look like in Ontario?

Provincial midwifery data from 2018 to 2021[1] (Table 1) shows that 87.9% (n = 40,473) of babies received DCC. Of those babies who had DCC, 63.9% (n = 25,845) had the cord clamped beyond 60 seconds of life, and only 3.2% (n = 819) of those babies were treated with phototherapy for hyperbilirubinemia. Comparatively, of the babies who received DCC between 30-60 seconds (n = 3,142), 4.3% (n = 135) were treated with phototherapy for hyperbilirubinemia. (2)

This data reflects a trend in midwifery practice to offer DCC to the large majority of clients, and most often for a duration beyond 60 seconds of life. It also reflects phototherapy rates lower than provincial incidence rates of approximately 7.7%. (3)

Table 1: Aggregate BORN midwifery data for fiscal years 2018/19-2020/21[2]



[1] Data for all live infants born to pregnant individuals with a billable midwifery course of care who had a vaginal birth and a registered/Aboriginal/student midwifery care provider who caught the baby in the fiscal years of 2018/2019 – 2020/2021.

[2] All inferences, opinions, and conclusions drawn in this publication are those of the authors, and do not necessarily reflect the opinions or policies of BORN Ontario

What isn't captured by this data?

- Missing data ≥ 10% in some categories should be interpreted with caution
  - Of the 40,473 babies who were reported as having DCC, there is missing data about duration for 28.2% (n = 11,425) of babies. Despite this, we can confidently conclude that most clients receive DCC beyond 60 seconds of life.
  - Of the 11,425 babies who had DCC for an unknown duration, 10% (n = 1,138) are missing data about whether there was hyperbilirubinemia requiring treatment. Missing data in BORN means we are looking at smaller numbers when drawing conclusions from data. This emphasizes the importance of accurate and complete BORN data entry.
- The data set does not include babies born by cesarean section or assisted vaginal births where there was a transfer of care to a physician.

What do the guidelines say?

Deferred cord clamping has become a standard of care and is recommended by the AOM, CPS, SOGC, RCOG, NICE and WHO among others. However, the recommended length of time for DCC differs between guidelines. See a summary of recommendations in Table 2 below.

Table 2: Recommendations for DCC by international guideline

	Year	Recommendation for term singletons
AOM	2019	"Midwives may offer delayed cord clamping to all clients, taking into consideration hyperbilirubinemia risk factors." (4)
CPS & SOGC	2022	"In term singletons, DCC is recommended for 60 seconds because it improves hematological outcomes at birth and past the newborn period. DCC beyond 60 seconds increases the risk of hyperbilirubinemia requiring phototherapy." (1)
RCOG	2015	"In healthy term babies, the evidence supports deferring clamping of the umbilical cord, as this appears to improve iron stores in infancy. Jaundice may be more common after deferred cord clamping but this management is likely to be beneficial as long as phototherapy for jaundice is available." (5)
NICE	2014	• "Do not clamp the cord earlier than 1 minute from the birth of the baby unless there is concern about the integrity of the cord or the baby has a heart rate below 60 beats/minute that is not getting faster. • Clamp the cord before 5 minutes in order to perform controlled cord traction as part of active management. • If the woman [sic] requests that the cord is clamped and cut later than 5 minutes, support her [sic] in her choice." (6)
WHO	2014	• "In newly born term or preterm babies who do not require positive-pressure ventilation, the cord should not be clamped earlier than 1 min after birth (strong recommendation)." (7)

Advocating for delayed cord clamping >60s at hospital births

While providing care in a hospital setting, midwives may encounter obstetric and paediatric colleagues following the CPS/SOGC guideline which does not recommend DCC beyond 60 seconds. Hospitals may also institute protocols or policies that address DCC timing. It is important to be aware of institutional and community standards and to communicate them to clients. It is also important to advocate for client choices, especially if their care plan differs from community standard. Here are some ways that midwives can advocate to provide care based on evidence and support client choices:

- Share information from this tip sheet with interprofessional colleagues, showing the safe outcomes for midwifery clients.
- Share information from the AOM CPG 18: Management of Hyperbilirubinemia, which discusses DCC timing on pages 12-13.
- Discuss how your practice monitors for hyperbilirubinemia in the community, including (as applicable) home visit timing, infant feeding support, use of bilimeters (TcB screening), outpatient TSB screening, client education and on-call provider availability.
- Consider hosting interprofessional rounds to review and discuss the literature, various guidelines and recommendations. You may be able to access BORN data specific to your institution to help inform rounds.
- Advocate for client choice by discussing options antenatally, documenting a care plan, and communicating care plans with interprofessional colleagues.

What are the key takeaway points for midwives?

- The CPS and SOGC recommend clamping the cord at 60 seconds. (1)
- Midwives in Ontario offer DCC to most clients, and many clients choose to defer cord clamping beyond 60 seconds, often until the cord has stopped pulsing.
- The overall incidence of infants requiring phototherapy for hyperbilirubinemia in Ontario in 2016-17 was approximately 7.7% (n = 10 655). (3)
- Midwifery BORN data from 2018-19 to 2020-21 reflects that the phototherapy rate for babies born under midwifery care is lower than provincial incidence data. Therefore, midwifery outcomes are consistent with broader incidence rates of hyperbilirubinemia regardless of duration of cord clamping. (2)
- Literature has found that DCC likely increases the risk of hyperbilirubinemia and the need for phototherapy among healthy term neonates and late pre-term and term infants with ABO isoimmunization. (8,9)
- Deferred cord clamping poses no increased risk of chronic or permanent harms and has a number of benefits for newborns (such as improved long-term iron stores, hematocrit values, hemoglobin concentrations and minimal disruption of skin to skin). (10)
- A complete ICD with clients should include all these key points as well as community standards, and the risks and benefits of various approaches to care.

References

1. McDonald SD, Narvey M, Ehman W, Jain V, Cassell K. Guideline No. 424: Umbilical Cord Management in Preterm and Term Infants. Journal of Obstetrics and Gynaecology Canada. 2022 Mar;44(3):313-322.e1.

2. Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2018/19 to 2020/21. Resource Type: Tabulated data. Data Provided on 1 Jun, 2022.

3. Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2014/15 to 2016/17. Resource Type: Tabulated data. Data Provided on 7 Dec, 2017.

4. Hyperbilirubinemia CPG Work Group. CPG No. 18 - Management of Hyperbilirubinemia in the Healthy Term and Late Preterm Neonate. Toronto; 2019.

5. Royal College of Obstetricians and Gynaecologists. Clamping of the Umbilical Cord and Placental Transfusion (Scientific Impact Paper No. 14) [Internet]. 2015. Available from: https://www.rcog.org.uk/globalassets/documents/guidelines/scientific-impact-papers/sip-14.pdf

6. National Institute for Healthcare Excellence (NICE). Intrapartum care: care of healthy women and their babies during childbirth. NICE clinical guideline 190 [Internet]. 2014. Available from: www.nice.org.uk/guidance/cg190

7. World Health Organization. Guideline: Delayed Umbilical Cord Clamping for Improved Maternal and Infant Health and Nutrition Outcomes. 2014.

8. McDonald SJ, Middleton P. Effect of timing of umbilical cord clamping of term infants on maternal and neonatal outcomes. McDonald SJ, editor. Cochrane Database Syst Rev [Internet]. 2008 Apr 16;(2)(2):CD004074.

9. Ghirardello S, Crippa BL, Cortesi V, di Francesco E, Consonni D, Colombo L, et al. Delayed Cord Clamping Increased the Need for Phototherapy Treatment in Infants With AB0 Alloimmunization Born by Cesarean Section: A Retrospective Study. Front Pediatr [Internet]. 2018;6:241. Available from: http://www.ncbi.nlm.nih.gov/pubmed/30283763

10. Hutton EK, Hassan ES. Late vs early clamping of the umbilical cord in full-term neonates: systematic review and meta-analysis of controlled trials. JAMA [Internet]. 2007 Mar 21 [cited 2013 Sep 4];297(11):1241–52. Available from: http://www.ncbi.nlm.nih.gov/pubmed/17374818