



<b>Title:</b> <b>Delayed Cord Clamping (DCC) in Infants Born at less than 33 weeks Gestational Age (GA)</b>	<b>Section:</b> <b>WOMEN'S/CHILD HEALTH PROGRAMS</b> 80.275.350	<b>Approved Date:</b> 26 Oct 2010
<b>Authorization:</b> Neonatal Patient Care Team Maternal/Newborn Committee	<b>Revised Date:</b>	<b>Page:</b> 1 of 3

## **1.0 PURPOSE:**

- 1.1 To select appropriate infants born at less than 33 weeks GA who will benefit from DCC.
- 1.2 To provide guidelines for an effective and consistent approach to the practice of DCC.
- 1.3 To improve outcomes of the infant born at less than 33 weeks GA.

## **2.0 DEFINITIONS:**

- 2.1 Early and Immediate Cord Clamping (ICC):  
Clamping and cutting of the umbilical cord as soon after delivery as possible, usually within 5-10 seconds.
- 2.2 Delayed Cord Clamping (DCC):  
Clamping and cutting of the cord 30-60 seconds after delivery of the infant. In most cases this also includes holding the infant at or below the level of the introitus wrapped in a warm sterile towel.
- 2.3 Vigorous:  
Infants showing some spontaneous breathing efforts or movement.

## **3.0 Introduction and Background:**

There is accumulating evidence, from reviews and meta-analyses of randomized controlled trials, that DCC is beneficial for vigorous preterm infants. Benefits include higher circulating red blood cell volume, blood pressure and hemoglobin. These physiologic benefits translate into a decreased need for inotropic support, a smoother transition and less need for transfusion. A recent review of published trials demonstrated decreased respiratory distress syndrome, less sepsis and decreased intraventricular hemorrhage despite not all studies demonstrating a higher hematocrit. Some studies have suggested higher scores on neurodevelopmental tests in male infants with DCC. The detrimental effects of DCC have been limited to higher bilirubin and higher phototherapy use in some DCC infants. No increased need for exchange transfusion, symptomatic polycythemia or poor neurodevelopmental outcomes have been demonstrated in the trials.

The evidence for milking of the cord or DCC in non-vigorous preterm infants is not as clear. The evidence in older preterm infants or term infants is also unclear due to lack of generalizability of the studies, as many studies exclude infants born to mothers with diabetes and non vaginal deliveries. Delayed cord clamping is supported by the Society of Obstetricians and Gynaecologists of Canada guidelines for active management of the third stage of labour.

## **4.0 Choice of Infants for DCC:**

- 4.1 All vigorous infants born at less than 33 weeks GA, without any contraindications, qualify for DCC in accordance with the procedures outlined in section 5:
  - o Need for resuscitation and thus earlier cord clamping is assessed at 20 seconds after birth.
- 4.2 Contraindications to DCC include:
  - 4.2.1 Known or suspected placental abruption
  - 4.2.2 Uncontrolled maternal hemorrhage
  - 4.2.3 Vasa Previa
  - 4.2.4 Fetuses with pre-existing volume overload such as hydrops fetalis
  - 4.2.5 Multiple gestation deliveries where the second twin is in distress
- 4.3 Maternal diabetes is not a contraindication to DCC in infants less than 33 weeks gestation.

- 4.4 The neonatal team in attendance discusses the planned procedure with the obstetrical team if time permits prior to delivery.
- 4.5 DCC is undertaken regardless of mode of delivery.

## **5.0 Procedure for DCC:**

- 5.1 See Figure 1: Procedure for Delayed Cord Clamping in Infants born at less than 33 weeks GA.

### **5.2 Procedure for DCC: Vaginal Delivery:**

- 5.2.1 The delivering practitioner holds the infant 20 cm below the introitus in a warm, sterile towel following delivery. Care is taken not to put any traction on the cord.
- 5.2.2 The receiving Resuscitation Nurse (or designate) notes the time of delivery and notifies the delivering practitioner when 20 seconds have elapsed.
- 5.2.3 If the infant does not demonstrate any movement or respiratory effort, the cord is clamped and cut. Cyanosis is not an indication for early clamping.
- 5.2.4 If the infant shows some movement or respiratory effort at 20 seconds, the timer notifies the delivering practitioner when a total of 60 seconds have elapsed and the delivering practitioner, then clamps and cuts the cord.
- 5.2.5 The infant is handed over to the Resuscitation Nurse.

### **5.3 Procedure for DCC: Cesarean Section Delivery:**

- 5.3.1 Place a warm, sterile towel on top of the sterile drape on the mother's legs
- 5.3.2 Once delivered (taking care not to raise the infant above the level of the placenta, or putting traction on the cord) the delivering practitioner places the infant on the sterile towel, on the mother's legs.
- 5.3.3 The receiving Resuscitation Nurse (or designate) notes the time of delivery and notifies the delivering practitioner when 20 seconds have elapsed.
- 5.3.4 If the infant does not demonstrate any movement or respiratory effort, the cord is clamped and cut. Cyanosis is not an indication for early clamping.
- 5.3.5 If the infant is showing some movement or respiratory effort at 20 seconds, the timer notifies the delivering practitioner when a total of 60 seconds have elapsed and the delivering practitioner then clamps and cuts the cord.
- 5.3.6 The infant is handed over to the Neonatal Resuscitation Nurse.
- NOTE:** For a multiple gestation delivery, the procedure is repeated for each infant.

- 5.4 The time of birth and clamping of the cord are documented in the delivery note and recorded on the Immediate Care of the High-Risk Neonate form:
- 5.4.1 Document reason if earlier clamping was necessary.

## **6.0 REFERENCES:**

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- 6.3 Neilson, J.P. (2008). Effect of timing of umbilical cord clamping at birth of term infants on mother and baby outcomes. *Obstetrics & Gynecology*, 112(1), 177-178.
- 6.4 Singhal, N., & Niermeyer, S. (2010, February). EPIQ Review: In preterm neonates does delayed cord clamping versus standard management improve neonatal outcome? Unpublished review
- 6.5 Society of Obstetricians and Gynaecologists of Canada. (2009, October). Active management of the third stage of labour. Retrieved from: <http://www.sogc.org/guidelines/documents/gui235CPG0910.pdf>
- 6.6 Weckert, R., & Hancock, H. (2008). The importance of delayed cord clamping for Aboriginal babies: a life-enhancing advantage. *Women Birth*, 21(4), 165-170.

Figure 1: Procedure for Delayed Cord Clamping in Infants born at less than 33 weeks GA

