Deferred Cord Clamping at Preterm Birth

Audit Tool

Purpose

To provide a simple tool to support hospitals and healthcare professionals to undertake audit of local practice of cord clamping for preterm pēpi. This tool may be adapted and extended to suit your needs. It has been designed to use Badgernet data against recommended Carosika audit standards, adapted from Perinatal excellence to reduce injury in preterm birth (PERIPrem)[1] and standards set by United Kingdom National Neonatal Audit Programme (NNAP).[2]

Rationale

Clinical audit is a quality improvement tool to evaluate and improve patient care and outcomes. Deferred cord clamping for 60 seconds after birth is recommended as standard practice for all pēpi born preterm (<37 weeks gestation) including at the threshold of survival (23^{+0} to 24^{+6} weeks), regardless of the mode of birth, number of pēpi, indication for preterm birth or type of analgesia/anaesthesia. In clinical trials it has been shown to be consistently associated with reduced mortality and likely to have other beneficial effects for preterm pēpi.

Audit of umbilical cord clamping practice

Audit Question: What proportion of pēpi live born at 23^{+0} to 33^{+6} weeks gestation have deferred cord clamping at one minute?

Audit standard: 80% of pēpi live born at 23^{+0} to 33^{+6} weeks gestation have deferred cord clamping for at least 60 seconds.

Inclusion criteria: Pēpi live born at 23^{+0} to 33^{+6} weeks gestation.

Denominator: Pēpi live born at 23^{+0} to 33^{+6} weeks gestation where cord clamping information was documented in the clinical record.

Numerator: Pēpi live born at 23^{+0} to 33^{+6} weeks gestation who received deferred cord clamped for at least 60 seconds.

Audit of umbilical cord clamping documentation

Audit Question: What proportion of pēpi live born at 23^{+0} to 33^{+6} weeks gestation have cord clamping information documented in the clinical record?

Audit standard: 100% of pēpi live born at 23^{+0} to 33^{+6} weeks gestation have cord clamping information documented in the clinical record.

Inclusion criteria: Pēpi live born at 23^{+0} to 33^{+6} weeks gestation.

Denominator: Pēpi live born at 23^{+0} to 33^{+6} weeks gestation.

Numerator: Pēpi live born at 23^{+0} to 33^{+6} weeks gestation where cord clamping information was documented in the clinical record.

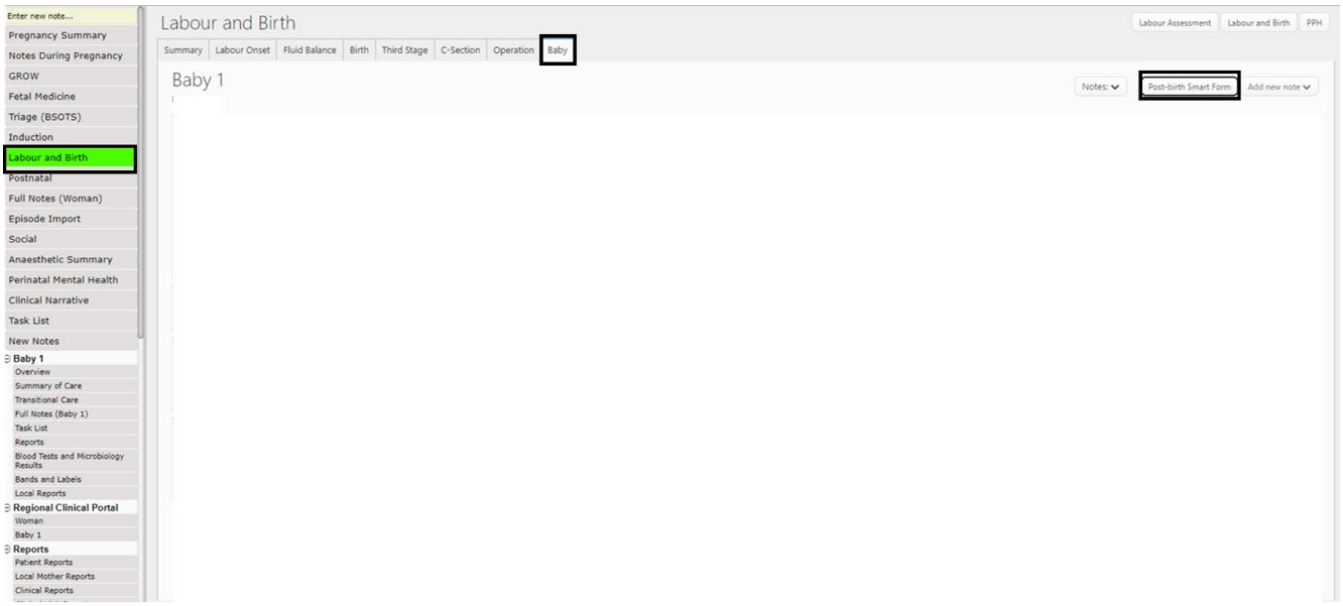
These audit questions and standards can be modified. For example, you may choose to evaluate all preterm births (<37 weeks gestation).

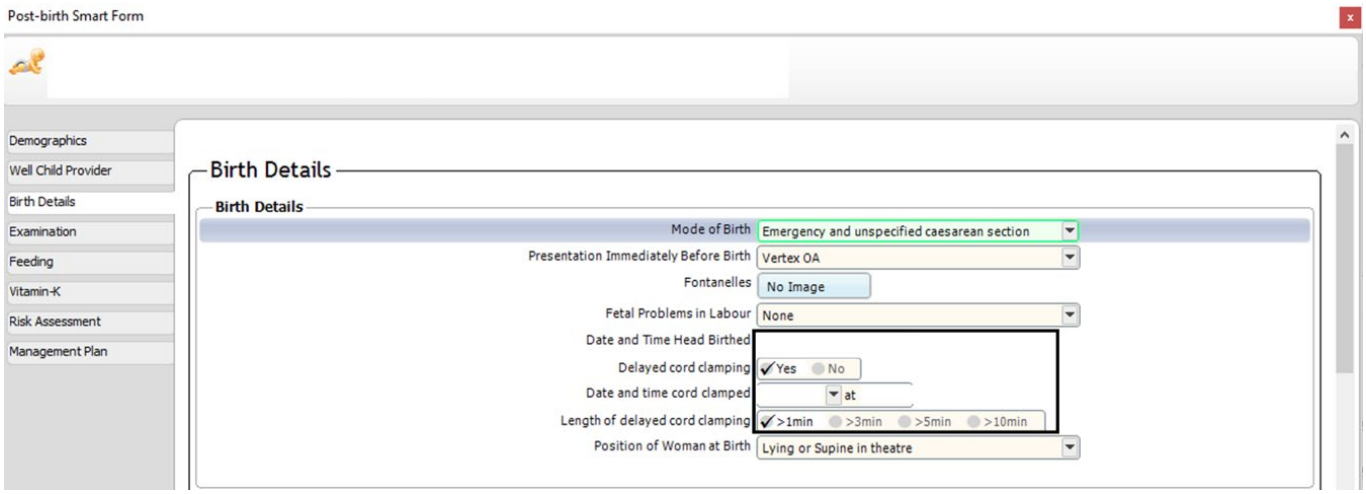
Collecting your data from Badgernet

Time of birth and cord clamping data can be entered on Badgernet using the following links.

Labour and Birth

- → Baby
  - → Post-Birth Smart Form
    - → Birth Details
      - → Date and Time Head Birthed
      - → Delayed cord clamping (yes / no)
      - → Date and time cord clamped
      - → Length of delayed cord clamping (>1 min, >3 min, > 5 min, > 10min)





This display shows length of delayed cord clamping in time pockets. For preterm pēpi, it should be > 1 minute. Alternatively, you can calculate the time difference between time of baby's birth and time of cord clamping (also shown in the above display).

These data can be extracted from Badgernet data tables. Ask your data manager for an excel spreadsheet including live births fitting the gestation criteria during the time period you wish to audit. The process of data extraction can be undertaken manually if required after identifying the appropriate gestational age live births at your unit.

Presenting your data and next steps

To calculate the proportion of pēpi with cord clamping documentation and/or deferred cord clamping, use the numerator value divided by the denominator value. This can also be expressed as a percentage.

We recommend your local rates are reported and compared to the audit standard, and presented numerically and in graphical form. Where your audit is repeated on several occasions over time, graphical presentation allows for easy visualisation of change.

If your audit demonstrates that improvement is required to meet the audit standard, local quality improvement initiatives should be undertaken.

These may include:

- Multi-disciplinary education sessions to review and consider the evidence supporting deferred cord clamping at preterm birth
- Clinical aides such as signage and checklists (see Carosika Deferred Cord Clamping SOP)
- Systematic inclusion of cord clamping plan in the surgical time-out for caesarean section births or peri-birth discussions for vaginal births
- Active shared decision-making with neonatology colleagues to determine the optimal timing of cord clamping if a need for early resuscitation is questioned
- Optimising documentation of deferred cord clamping post birth through reminders or incentives
- Reflection on context-specific enablers and barriers will provide the biggest opportunity to changing behaviour locally. This may be done by looking at a small number of cases where deferred cord clamping has and has not been successfully performed, and assessing the contributing factors. Driver diagrams can help map factors and link these with solutions, and Plan, Do, Study, Act (PDSA) cycles provide a very useful framework for iteratively refining quality improvement.[3-6]
- Regular presentation of audit results can be extremely beneficial for encouraging continued practice change and generating collective enthusiasm for the success of an initiative. [4,7,8]

References

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4. Chan S, Duck M, Frometa K, Liebowitz M, Rosenstein MG, Tesfalul M, et al. Improving the Rate of Delayed Cord Clamping in Preterm Infants: A Quality Improvement Project. Hospital pediatrics. 2023;13(4):292-9.
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For more information including access to Taonga Tuku Iho (national best practice guide), you can access the Carosika Collaborative website ***www.carosikacollaborative.co.nz*** *or or by using the QR code.*

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