ON TRACK News

ON TRACK NETWORK
BETTER HEALTH FOR MOTHERS AND BABIES
Te Awhi Rito

TOGETHER WE CAN ACHIEVE BETTER HEALTH FOR MOTHERS AND BABIES

Welcome

Welcome to the August edition of ON TRACK News for 2022

Kia ora, welcome to ON TRACK News. Winter has been rather wet so we hope to help you wile away your tea-break with our informative newsletter while we all look forward to a much drier spring.

August 2022

IN THIS EDITION

UPDATE YOUR PRACTICE: this month we look at Baby Directed Umbilical Cord Clamping Trial (BabyDUCC) comparing the heart rate and O2 saturations of infants between early and physiological cord clamping **Page 2**

A review and meta-analysis of Family Involvement in preterm/LBW care in NICU. Page 3

Featured Trial - PROTECT Me. Shining a light on a possible new therapy for FGR **Page 3**

LATEST NEWS

Thank you and farewell to Laura

Laura Mackay has been a senior clinical trials manager at the University of Auckland for the last 9 years. She is an expert in clinical trial design and execution and has provided an amazing level of support to the mothers and babies health trials she has managed (C*STEROID, C*STEROID Feasibility, STRIDER NZAus and the EPPI Trial), as well as providing expert guidance to many investigators and teams across the ON TRACK Network .

Laura has moved to the role of Research Operations Manager at Starship Hospital so she is not far away from us in location or topic. We know she will continue to support and advocate for mothers and babies health research and will always be welcomed by the Network.

There are lots of informative conferences coming up as you can see below in our **Save The Date** section, it is at capacity! If you have any important events you think we could include, please email us at **ontracknetwork@auckland.ac.nz**

PRECeDe

The **PRECeDe Trial: P**revention of neonatal **R**espiratory distress with antenatal corticosteroids prior to **E**lective **C**aesarean section in women with **D**iabetes - A Randomised Trial has recently been funded by the Australian NHMRC. It is has a very similar design to the C*STEROID Trial but is for women with diabetes (C*STEROID is for those without diabetes). This triple blind, placebo-controlled, randomised controlled trial will include women with diabetes prior to an elective caesarean section between 35^{+0} and 39^{+6} weeks. Sites will become active across Aotearoa during 2023.

If you are keen for your hospital to become involved please contact Assoc Prof Katie Groom k.groom@auckland.ac.nz or Elisa Tam elisa.tam@auckland.ac.nz (funding support will be available)

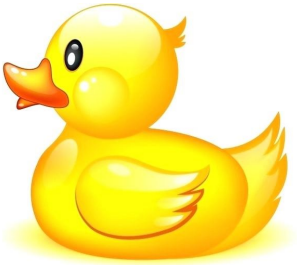
Lead PI: Assoc Prof Jo Said (University of Melbourne). NZ PI: Assoc Prof Katie Groom (Liggins Institute, University of Auckland).

SAVE THE DATE

RANZCOG Aotearoa New Zealand 2022 ASM **Christchurch** 22-23 August, www.nzasm.org.nz
Home Birth Aotearoa Hui and Conference 2022 **Waikato** 29th 30th October, www.whba.org.nz
Paediatric Society NZ 73rd Annual Scientific Meeting 2022 **New Plymouth**, 1-3 November, www.psnzconference.org.nz
ACTA Annual Scientific Meeting 2022 **Adelaide**, 7-8 November, www.clinicaltrialsalliance.org.au
Perinatal Society New Zealand meeting Auckland, 10-11 November, www.perinatalsociety.org.nz
10th Biennial Joan Donley Midwifery Research Forum **Tauranga,** 18 November, www.midwife.org.nz
Health Informatics New Zealand Digital Health Week NZ **Rotorua**, 5-8 December, www.hinz.org.nz
The Carosika Project, Taonga Tuku Iho. Project Event & Hui **Auckland**, 8-9 December, Newsletter

UPDATE YOUR PRACTICE:

Physiologically based cord clamping for infants ≥32+0 weeks gestation: A randomised clinical trial and reference percentiles for heart rate and oxygen saturation for infants ≥35+0 weeks gestation. The Baby Directed Umbilical Cord Clamping (BabyDUCC) Trial



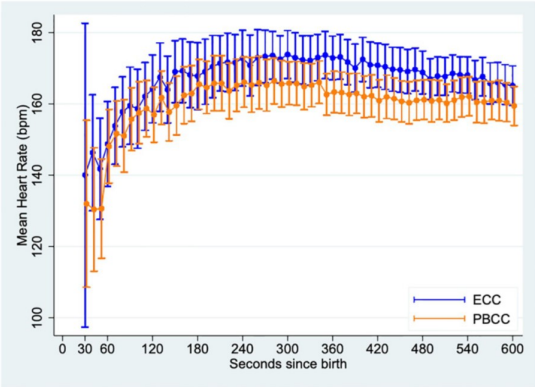
https://doi.org/10.1371/journal.pmed.1004029

Background

Deferred cord clamping is considered standard of care for well term (and preterm) babies but what about for babies requiring assistance at birth? For these babies, it is common practice to clamp and cut the umbilical cord to move them to a separate platform for resuscitation. However, early cord clamping (ECC) with removal of placental circulation support before breathing is established may be detrimental to newborn physiology. Alternatively, keeping the neonate attached to the placenta until breathing is established, physiologically based cord clamping (PBCC), may be more beneficial and is readily available and a low-cost intervention. Animal studies support this theory and led to the hypothesis of this trial - that for infants needing resuscitation, PBCC would result in more stable HR compared with infants receiving ECC. This study also collected data to update the reference percentiles of HR and oxygen saturation in vigorous infants receiving delayed cord clamping.

Design

This 2-centre parallel arm superiority randomised trial, was conducted at two perinatal centres in Melbourne, Australia, between July 2018 and May 2021. Infants born at ≥32^{+0} weeks with a request for a paediatrician to attend the birth for potential newborn compromise were eligible. Randomisation was stratified by study centre, by gestation and, by nonemergency/emergency birth for ≥36^{+0} weeks. All infants were dried and stimulated immediately after birth. Those that remained apnoeic and determined to require positive pressure ventilation were randomised to ECC or PBCC (done within 60 seconds of birth using a smartphone link to the randomisation tool). The primary outcome was mean heart rate between 60 and 120 seconds after birth.



Results

A total of 506 newborns were enrolled in the study. **123 were randomised to PBCC (*n* = 63) or ECC (*n* = 60),** 295 of the non-randomised (vigourous at birth) were included in the observational study to update reference percentile charts. Of those randomised, the median gestation at birth was 39^{+5} weeks. Mean time to randomisation was 26 seconds after birth. Cord clamping occurred at a mean of 136 seconds for PBCC and 37 seconds for ECC.

There was no difference in the mean heart rate between 60 and 120 seconds after birth: PBCC - 154 bpm (SD 31) and ECC- 158 bpm (SD 35) (mean adjusted difference −6 bpm, 95% CI −17 to 5 bpm, p-value 0.39). Babies in the PBCC were more likely to have PPV (48% vs 25%) but there was also no difference in oxygen saturation at 10 minutes after birth.

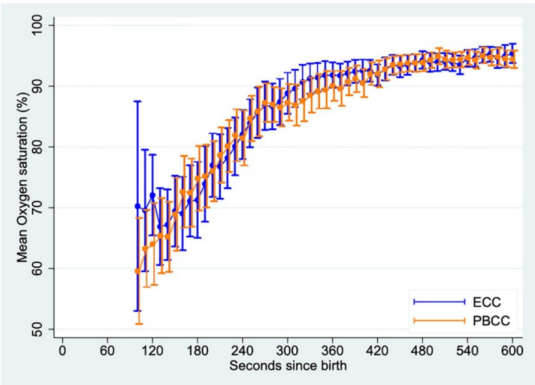


Fig 1. Mean heart rate (A) and oxygen saturation (B) measured at 10-second intervals from 30–600 seconds from birth for infants in the PBCC and ECC arms.

Interpretation and what this means for Aotearoa

PBCC was not found to be superior to ECC. However, the ongoing benefits of PBCC and placental transfusion/redistribution to infants needing resuscitation may still be significant. Further research is required before recommending a change in practice but this small randomized trial has shown that PBCC is safe and feasible, including at emergency births. We support the DUCC trial team suggestion for further investigation including safety and long-term outcome data in a larger study population.

Family Involvement in the Routine Care of Hospitalize Preterm or Low Birth Weight Infants: A systematic Review and Meta-analysis.

doi: 10.1542/peds.2022-057092O.

Worldwide, physical contact policies for the families of infants in NICUs vary significantly, from no contact to 24-hour bedside attendance. In many settings, families are encouraged to visit and participate in activities such as kangaroo mother care, bedside infant care and breastfeeding. In others where less contact occurs, the physical and emotional separation may lead to parents to feeling powerless and isolated from care of their baby and decision-making processes. This may be detrimental to both infant and parental wellbeing.

Methods 15 randomised controlled trials were included in this study totaling 5240 participants, with a range of sample sizes (44-1786 infants). All trials evaluated the effect of family centred models or packages (family interventions) in the hospital care of preterm or low birthweight infants on infant and parental outcomes. Low-income counties were not included . Control groups varied substantially between no contact to full infant contact.

Primary outcomes of the study were measures of effectiveness and safety for infants: mortality, morbidity, growth and neurodevelopment. **Secondary outcomes** included metrics related to infant and family health and wellbeing: hospital utilisation, breastfeeding rates and parental stress and anxiety.

Findings - Overall family interventions (FI) reduced retinopathy of prematurity, length of hospital stay and parental stress and anxiety. FI increased weight gain velocity, neurobehavioral score and fully or exclusive breastmilk intake. FI may decrease rates of bronchopulmonary dysplasia, infection, and intraventricular haemorrhage. There were no effects on mortality or necrotising enterocolitis. To conclude, family intervention has several beneficial infant and parental outcomes and is recommended.

Featured Trial - PROTECT Me

PROTECT Me - Assessing Antenatal Maternal Melatonin Supplementation in Fetal Growth Restriction to Improve Neurodevelopmental Outcomes.

PROTECT Me is also known as **Melatonin in Pregnancy Trial in Aotearoa.**

PROTECT Me is the first phase lll randomised placebo-controlled trial, investigating babies with a diagnosis of fetal growth restriction (FGR) and the potential use of melatonin to protect the unborn fetal brain from injury. FGR is commonly caused by an inefficient placenta not transporting oxygen to the fetus as easily, leading to oxidative stress for both placenta and baby. Oxidative stress is believed to be harmful to the developing brain. The aim of this trial is to discover if melatonin can reduce the effects of oxidative stress and 'protect' the baby's brain during pregnancy leading to better neurodevelopmental outcomes.

The trial is running across Australia and New Zealand. A total of 332 mothers and their babies will be recruited. To date 18 of 118 recruits are from Aotearoa including Auckland City, Middlemore and Wellington.

Melatonin in Pregnancy video link

Melatonin in Pregnancy PROTECT me

IS THIS AN IUGR BABY? BETWEEN 23+0 – 31+6 weeks' gestation
DOES IT MEET THE FOLLOWING CRITERIA?

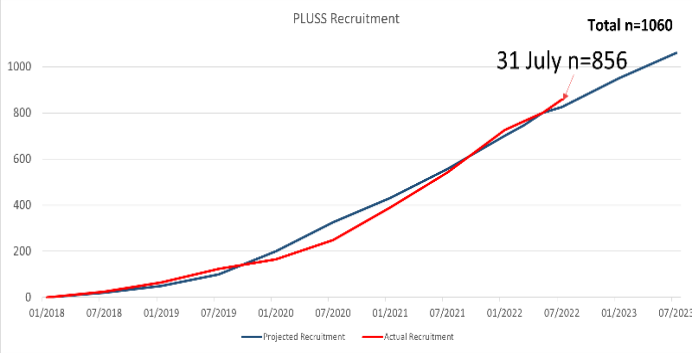
Inclusion Criteria	Exclusion Criteria
Singleton Pregnancy AC 3rd centile or under OR AC <10th centile with **either** • Uterine artery ≥95th centile **OR** • Umbilical artery (PI ≥95th centile[54] or absent/reversed end-diastolic flow)	A fetus with a known chromosomal, major structural anomaly Pregnancies requiring immediate delivery Co-recruitment in another clinical trial where a pharmaceutical product or nutritional supplement

Taonga Tuku Iho - Equity in Preterm Birth Care & Outcomes in Aotearoa.

Taonga Tuku Iho is a knowledge translation project funded the HRC and MoH and led by members of the Carosika Project. The project will develop a national best practice guide for preterm birth care aiming to achieve equity in care and outcomes across Aotearoa. As part of this work, they also aim to develop a set of resources and tools to support it's implementation and to measure it's impact. The ON TRACK Network is one of many stakeholder groups invited to consider endorsement of the best practice guide. Please let us know if you would like to be involved with our review. *We have attached their Newsletter for further details including information on an educational event and stakeholder hui* ***AUT South Campus, 8-9 December.***

PLUSS Trial UPDATE.

PLUSS has two new recruit sites joining the study in Australia, **Royal Hobart Hospital—Tasmania and Women's and Children's Hospital—South Australia.** Recruitment for the trial at the end of July 2022, is tracking above their projected target, a wonderful accomplishment for the team! Currently there are 18 hospital and institute recruitment sites across Australia, New Zealand, Singapore and Canada.



PLUSS Sub-Studies.

PLUSS-HEARTS - A blinded evaluation of the effect of intra-tracheal budesonide/surfactant on the ductus arteriosus and haemodynamic status. To date: 89 infants of the target sample size: 158 have been recruited.

PLUSS Pharmacology - The aim is to determine if intra-tracheal budesonide has an acute effect on plasma glucocorticoid activity. 44 infants have been included in the PLUSS Pharmacology study.

PLUSS2 - A randomised study that will assess health and neurodevelopmental outcomes at 24-30 months of age (corrected for prematurity) of extremely preterm infants (born <28 weeks' gestation) who were enrolled in The PLUSS Trial 158 infants from the PLUSS Trial reached the minimum age for follow up. 80% of those babies have completed their assessments so far.

The Perinatal Society of New Zealand invite you to submit an abstract/s for consideration to present at their Annual Scientific Meeting 2022. Submissions on clinical and preclinical studies from all health professionals involved in perinatal care at any level of training, are welcome. Email your word doc to admin@perinatalsociety.org.nz
Closing - ***Submission date extended to 11th Sept 2022.***

New Zealanders for Health Research began in 2018, opening the doors for a collaborative approach between member organisations. NZHR host an annual public opinion poll, support and contribute to advocacy, engage in Government policy development and network with other international health alliances. To keep up-to-date check out their monthly newsletter. www.nz4healthresearch.org.nz

New Zealand Trials		New Zealand recruits
PROTECT Me	Antenatal melatonin supplementation in fetal growth restriction for fetal neuroprotection	18
C*STEROID	Corticosteroids before planned caesarean section from 35^{+0} to 39^{+6} weeks of pregnancy	362
FIIX Trial	The Fertility, IVF and Intrauterine Insemination trial in couples with uneXplained infertility	458
NeoGluco	Neonatal Glucose Care Optimisation Study (I)	65
PIPPA TAMARIKI	Paracetamol and Ibuprofen in Primary Prevention of Asthma	3198
PLUSS	Preventing Chronic Lung Disease in Extremely Preterm Infants Using Surfactant + Steroid	172
PROTECT	IV pentoxifylline as adjunct therapy to improve long-term disability in preterm infants	75
Recruitment completed - follow up to primary outcome and/or data analysis ongoing		
LATTE Dosage	The most effective and best tolerated dose of caffeine to reduce intermittent hypoxaemia	
GEMS	Gestational Diabetes Mellitus Trial of Diagnostic Detection Threshold	
MAGENTA	Magnesium Sulphate at 30 to 34 weeks' gestational age: Neuroprotection Trial	
PROVIDE	Higher IV protein intake for extremely low birthweight babies in the first week after birth on survival free from neurodevelopmental disability at 2 years' corrected age	
DIAMOND	Different Approaches to Moderate & later preterm Nutrition	
Childhood outcome studies		
hPOD@2YR Follow-up Study	Hypoglycaemia Prevention in newborns with Oral Dextrose	
TARGET Follow up Study	Optimal glycaemic targets for women with gestational diabetes: the randomised trial	