



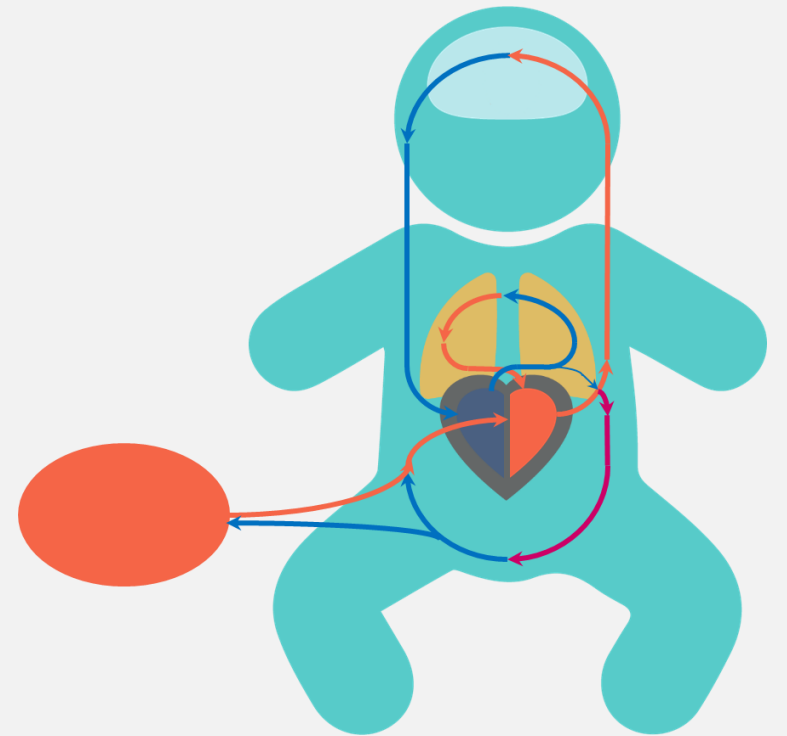
When babies win, we all win

CONCORD
neonatal

Let's get birth right!



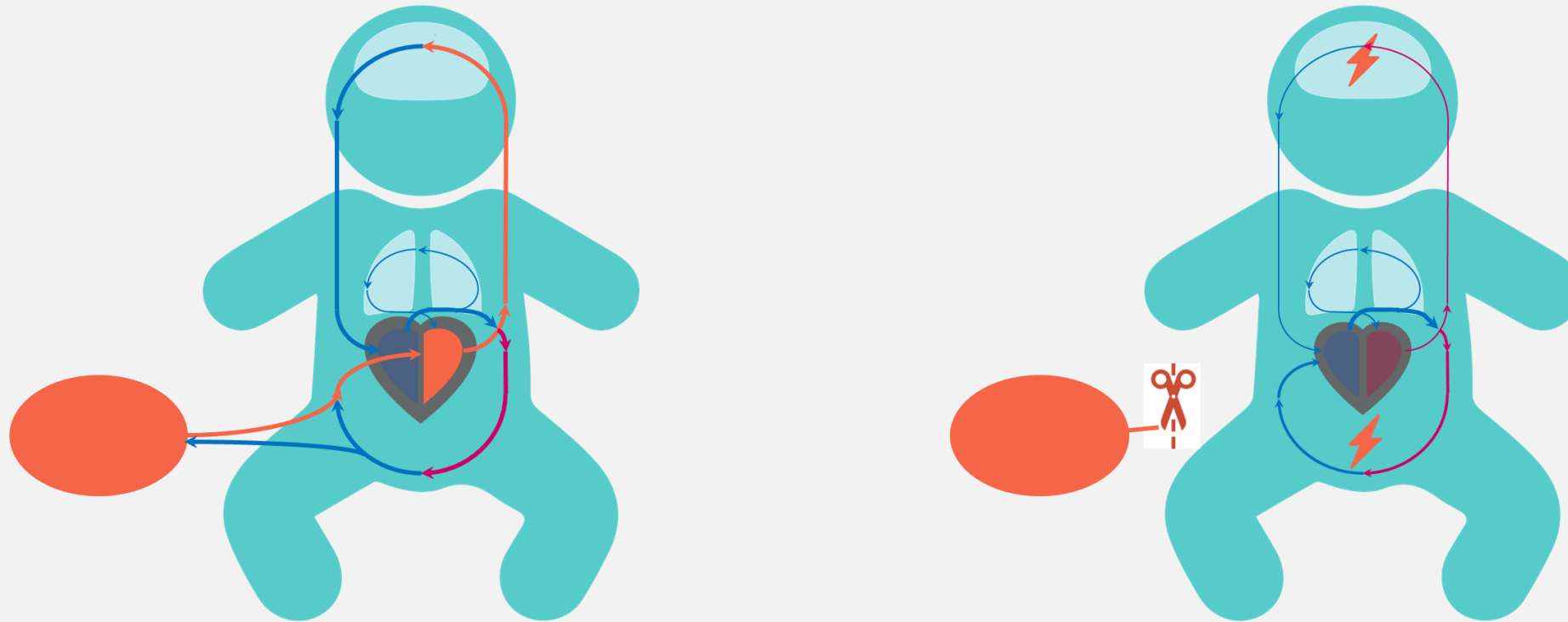
- Delaying cord clamping until after the lungs are aerated ensures a more stable transition.
- Especially beneficial for preterm and term infants who need support during transition.
- Assessment and intervention with the cord intact can be performed in a safe and effective way.



Non-physiological transition¹⁻⁴



A 'shock' to the baby's blood flow¹⁻⁴



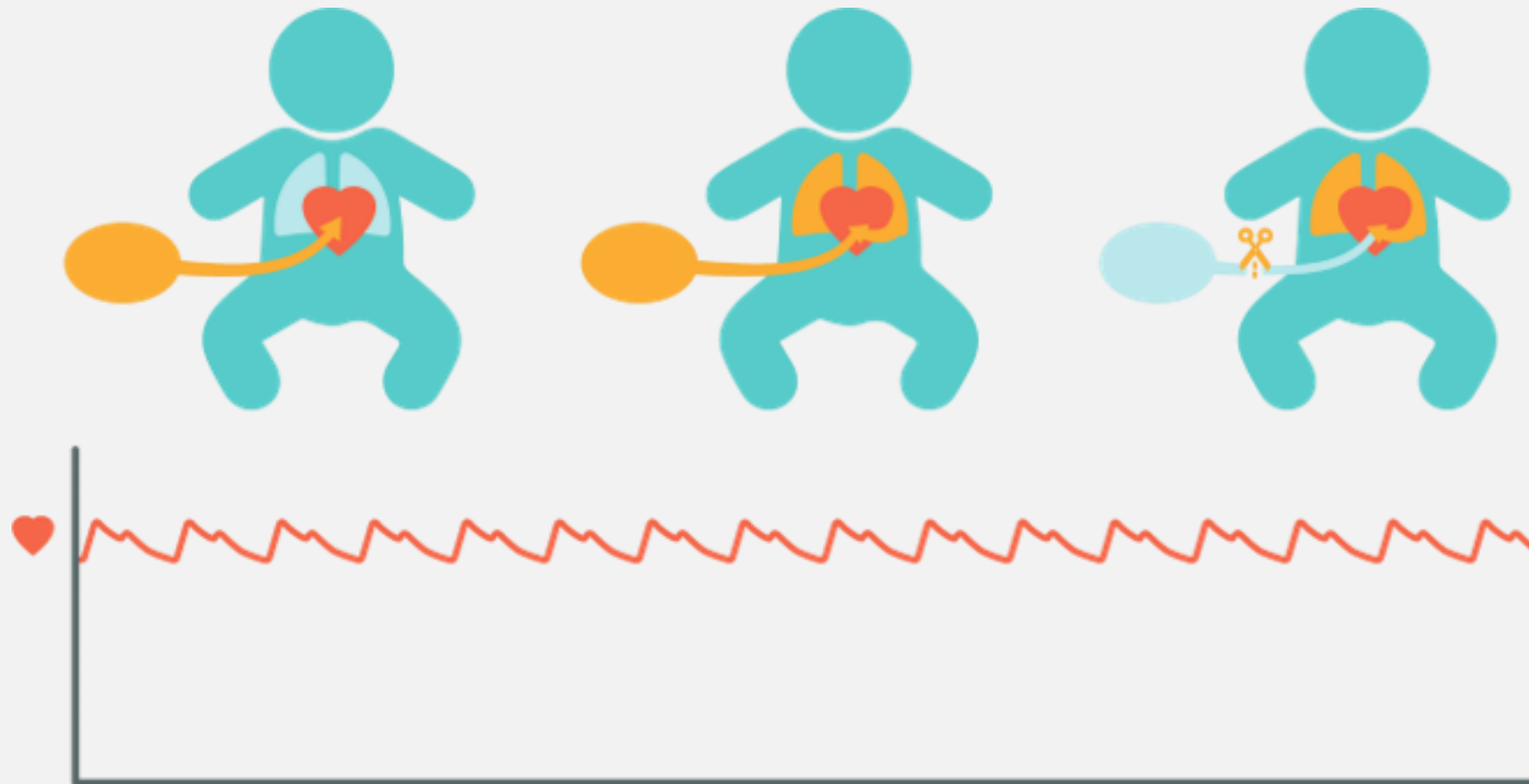
Pre-load LA
(input)

HR & CO
(output)

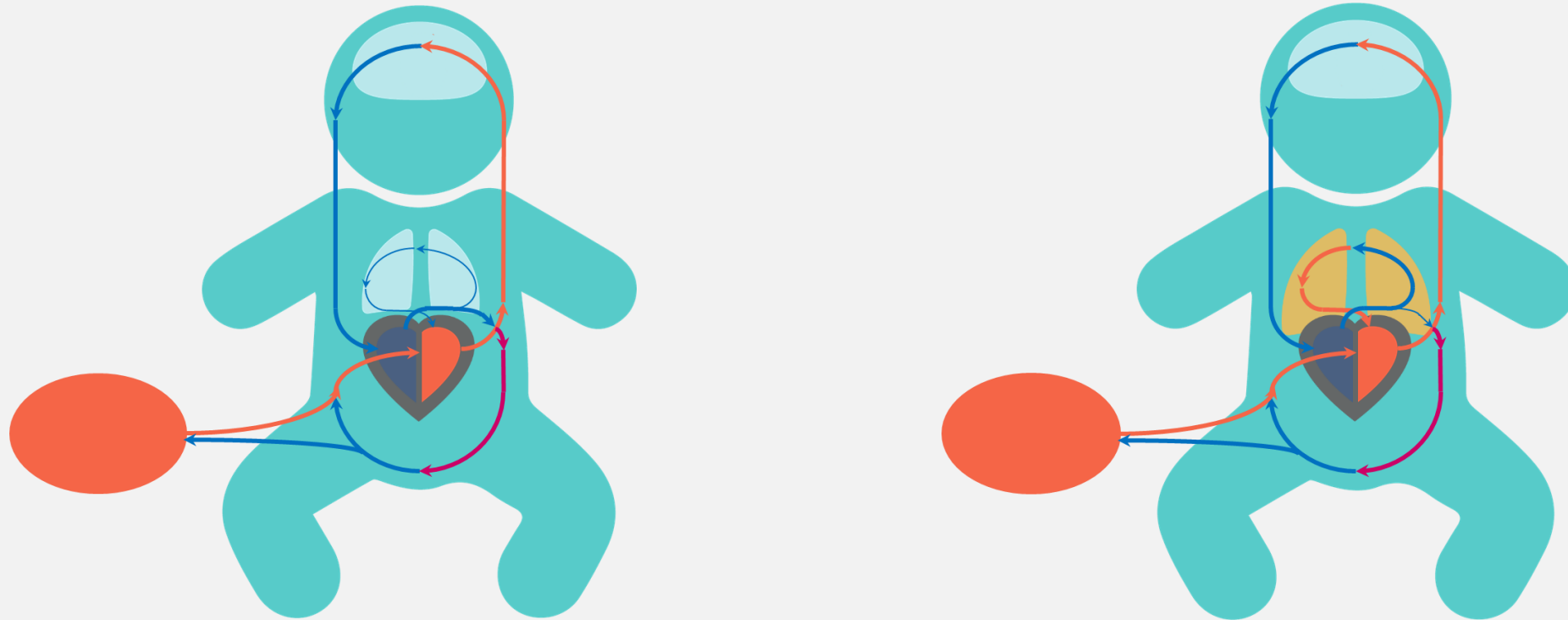
SpO₂



Physiological transition¹⁻⁴



Let the baby decide¹⁻⁴

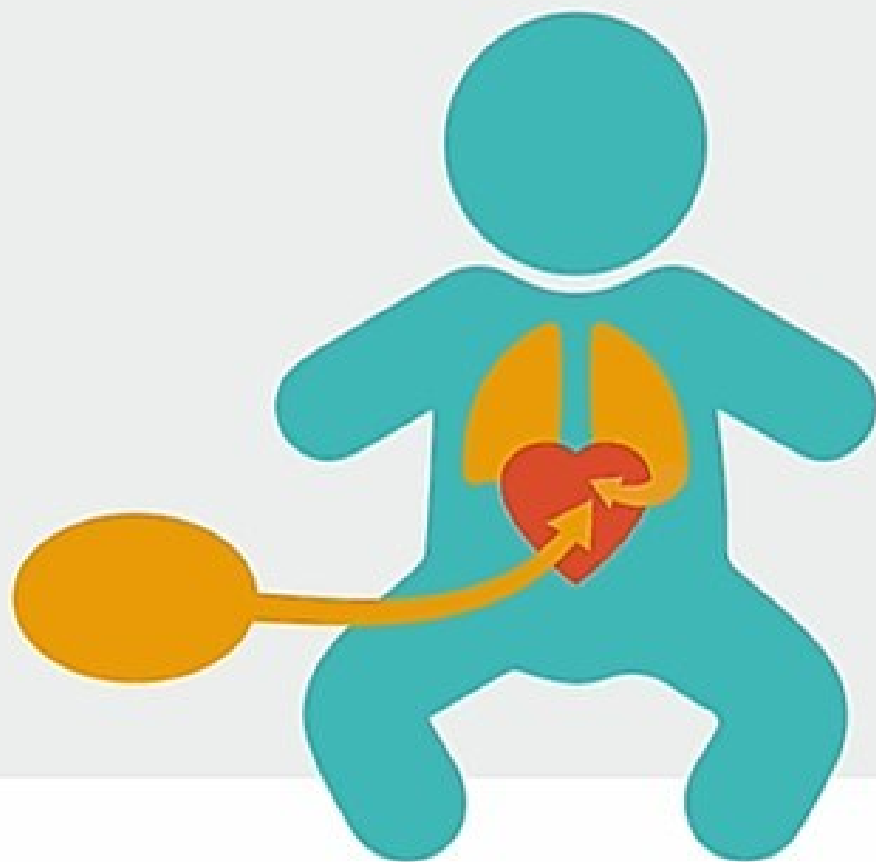


Pre-load LA
(input)

HR & CO
(output)

SpO2

Risk of
Complications



Physiological-based cord clamping

A shock-free birth for every baby


Animation video: physiology of transition



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ERC-NLS 2021: Focus on cord clamping⁵



NLS 2021 

5 TOP MESSAGES

1. Delayed cord clamping can optimise condition - especially in the preterm infant
2. Effective thermal care is vital - Dry wrap and stimulate
3. Assess breathing & heart rate - A fast heart rate indicates adequate oxygenation
4. Simple steps to support airway and breathing manage most problems
5. Chest compressions only once effective ventilation is established and if the heart rate remains very slow

NLS 2021 

CORD CLAMPING

KEY EVIDENCE



Delayed cord clamping improves survival and haematological and circulatory stability especially in preterm infants

KEY RECOMMENDATIONS



60 seconds

If resuscitation is not required then delaying cord clamping for at least >60 seconds is recommended, ideally until breathing has commenced

Where delayed cord clamping is not possible, cord milking should be considered but only in infants >28 weeks gestation

Physiological-Based Cord Clamping (PBCC)



First breathing, then clamping

A

Aeration

B

Breathing

C

Clamping

Physiological-Based Cord Clamping (PBCC)



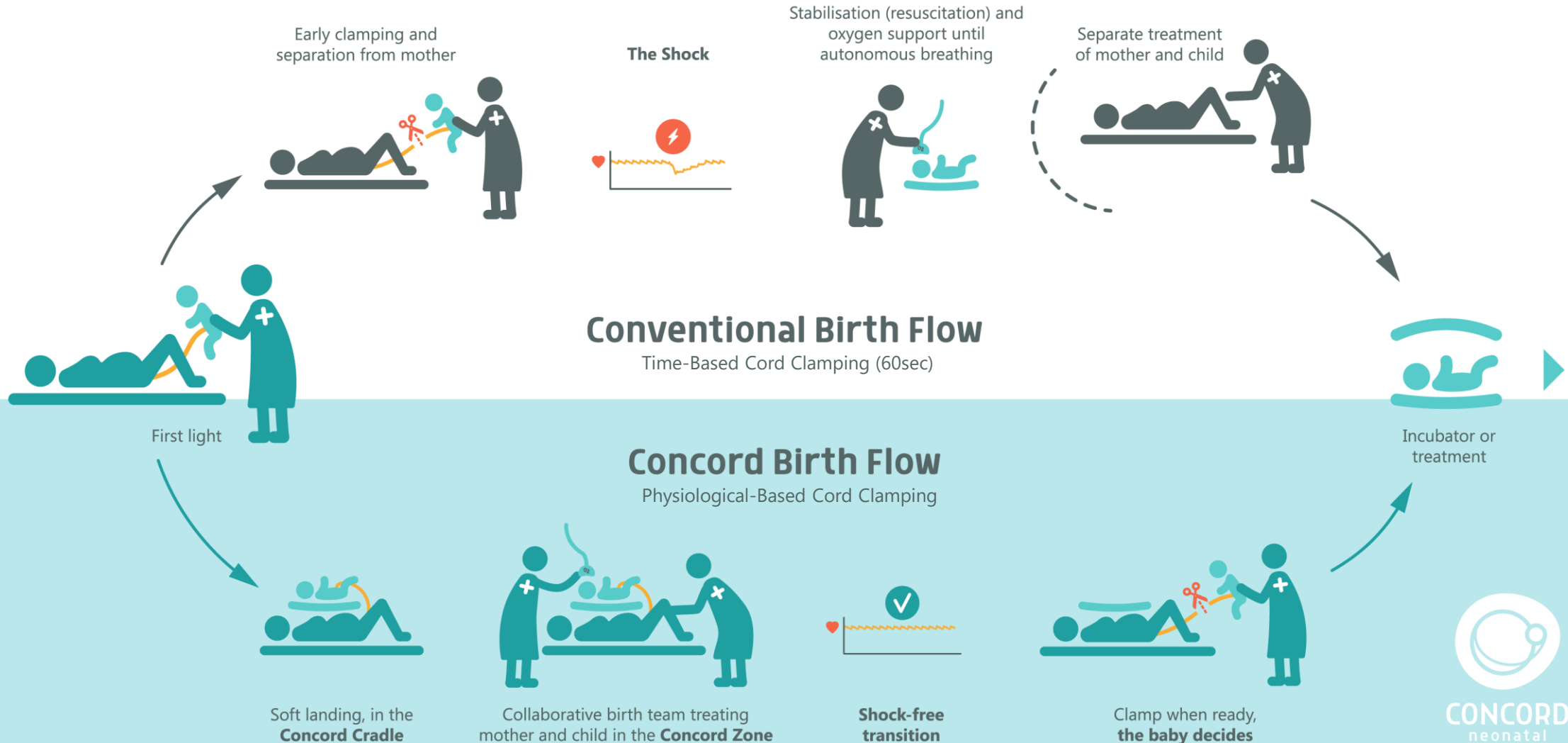
First breathing, then clamping

A
Aeration

| Criteria: | |
|------------------|-----------|
| HR | > 100 bpm |
| SpO ₂ | > 85% |
| FiO ₂ | < 40% |
| nCPAP | |

C
Clamping

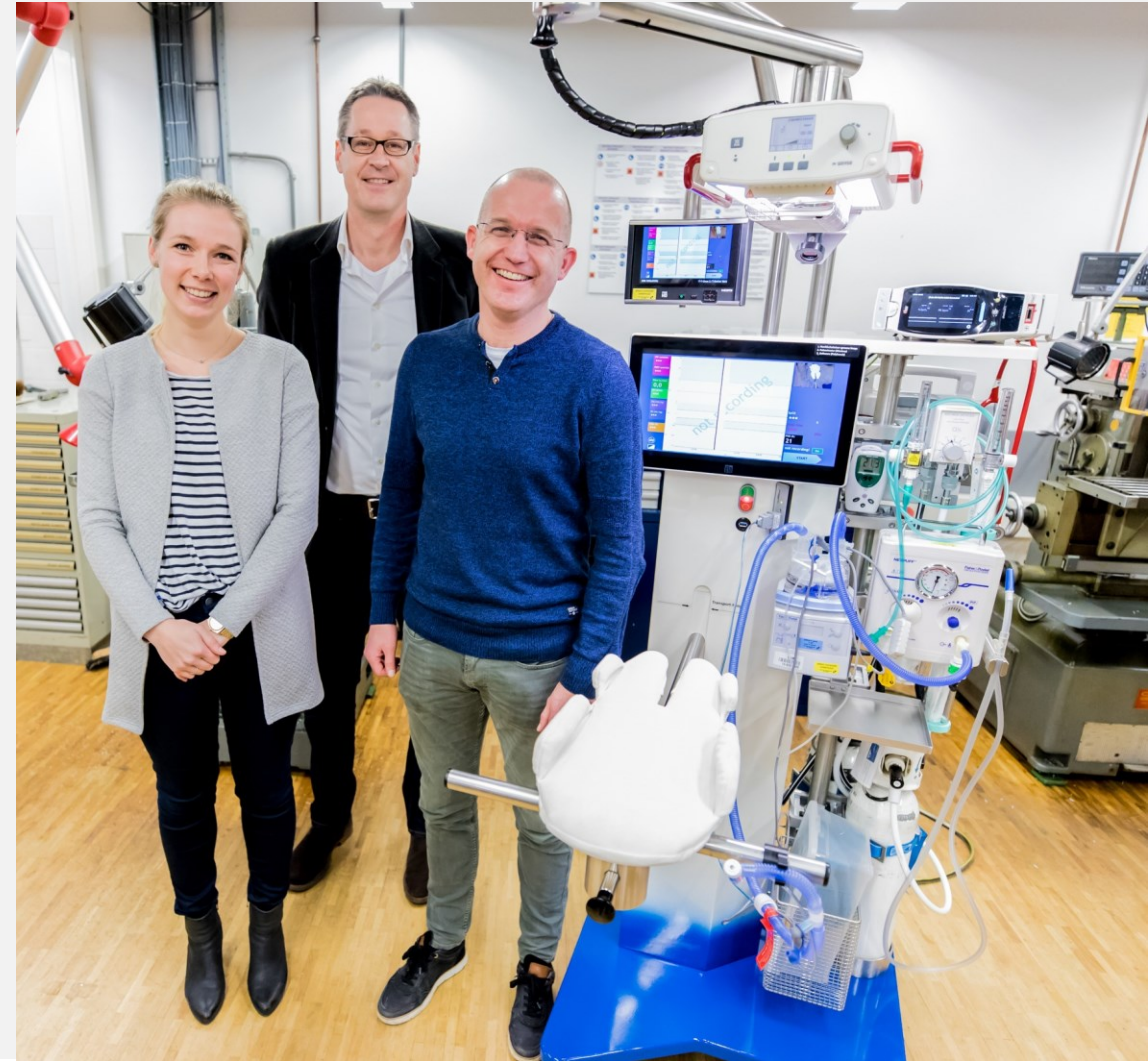
We call this the Concord Birth Flow®



Stabilizing the baby with an intact cord⁶



- Clamp the cord when the baby is ready
- Cord management part of stabilization
- No compromise in standard care in stabilization
- No rush
- Monitoring
- Even the shortest cord, no stretching and kinking
- Unobstructive work fields
- Mom can see and touch the baby



Keeping the baby close to mom



Key to the Concord Birth Flow is the Concord Birth Trolley®

a new treatment platform with a patented slot for the umbilical cord, to keep the baby very close to its mother, even with a very short umbilical cord connected.

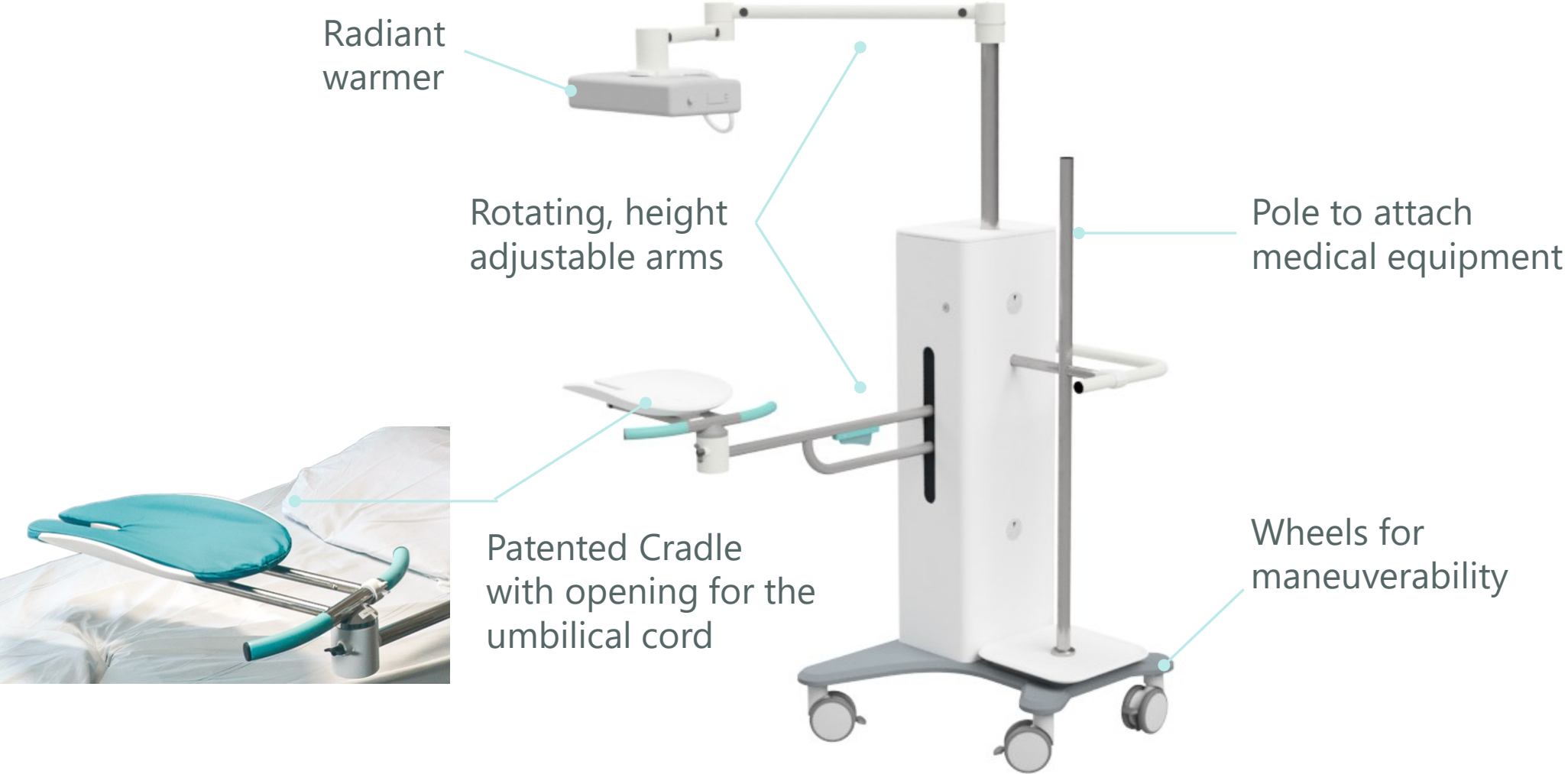
Keeping the baby close to mom.



Mom can see and touch her baby



Introducing the Concord Birth Trolley®

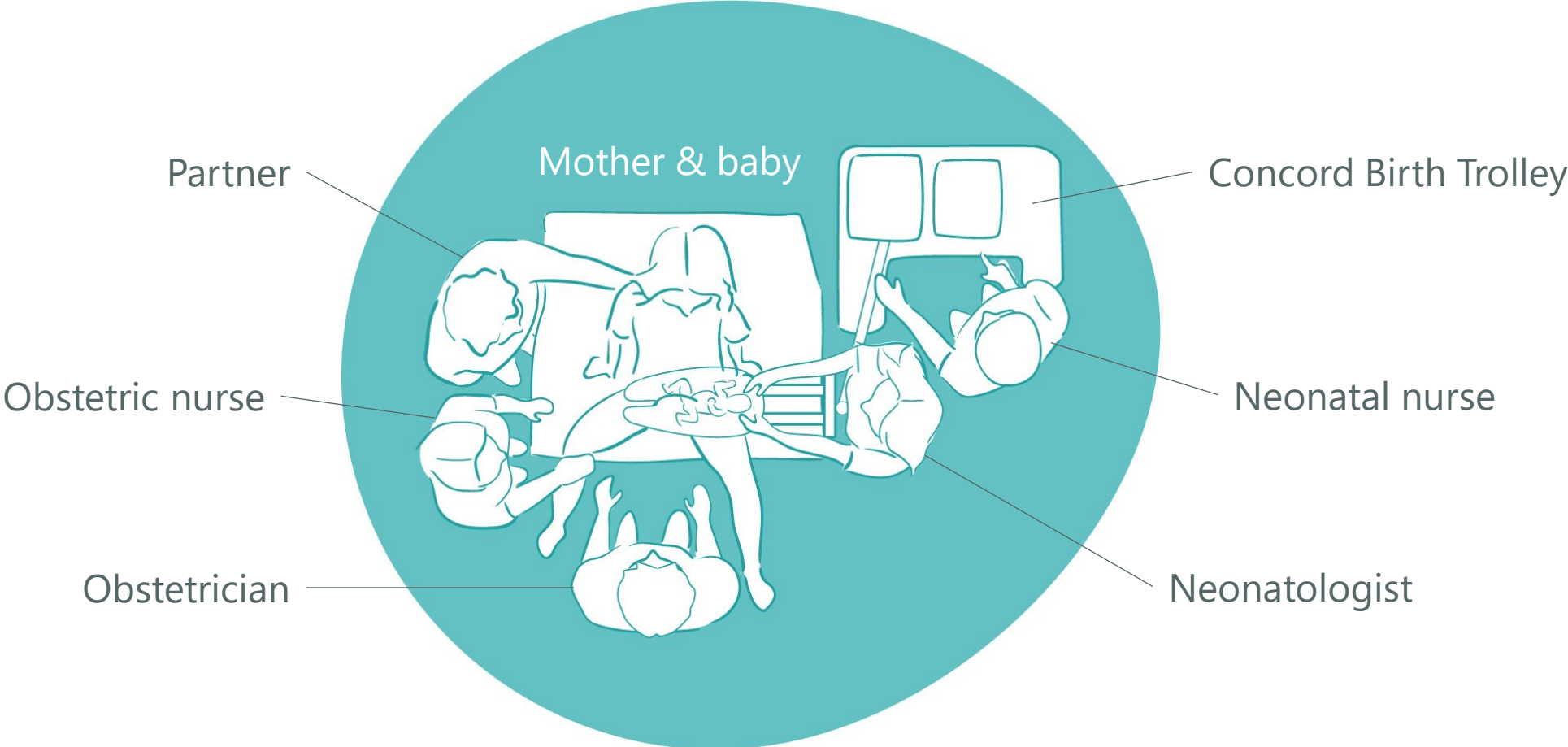




In the Delivery Room



Caregivers collaborate in the Concord Zone

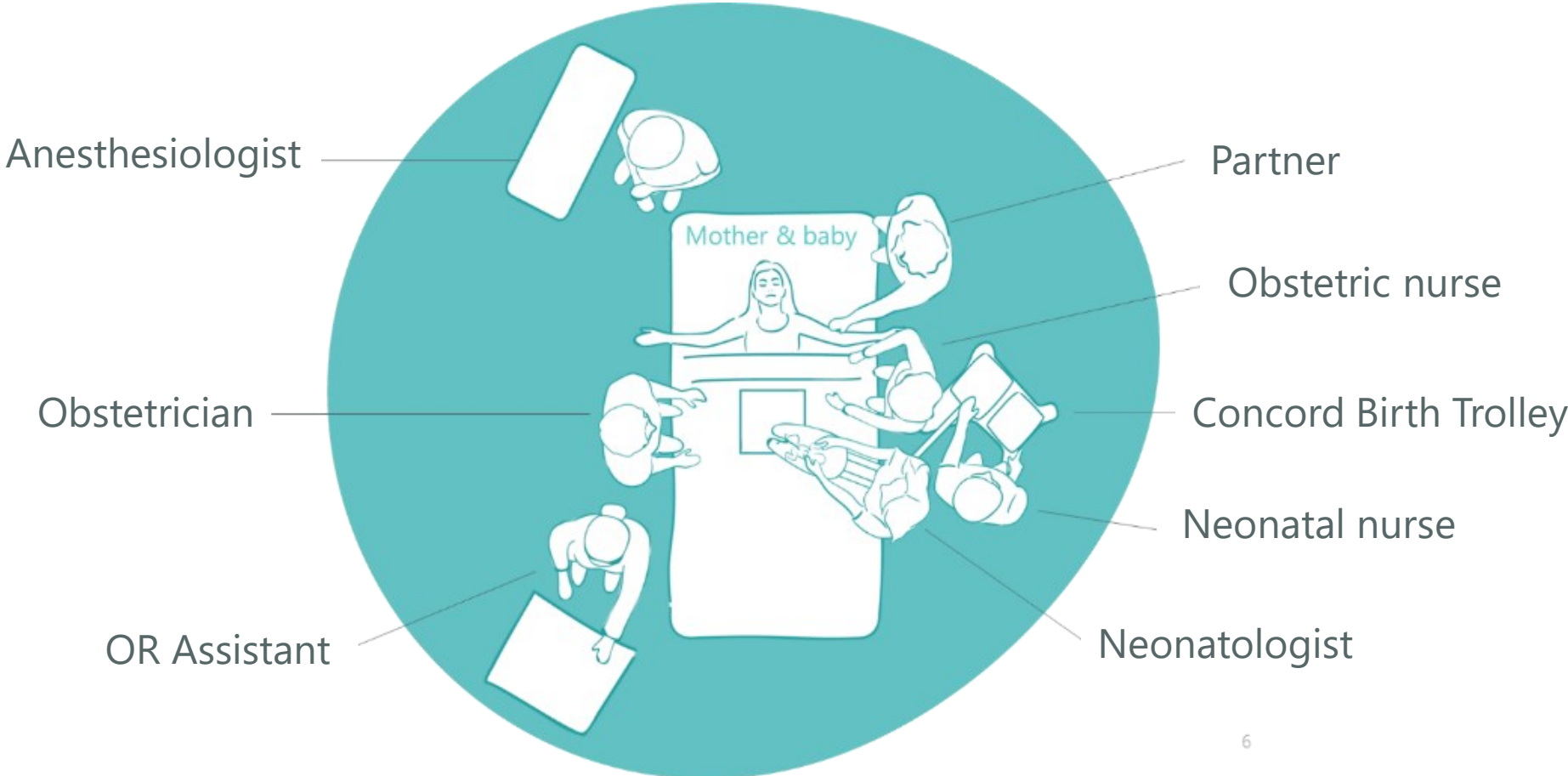


N.B. The team can be different per hospital

And in the Operating Room



Caregivers collaborate in the Concord Zone



N.B. The team can be different per hospital



19 hospitals in our Concord Community



Concord Birth Trolley in use



Concord Birth Trolley in use





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Prof. Dr. Irwin Reiss - Erasmus MC, Sophia Children's Hospital

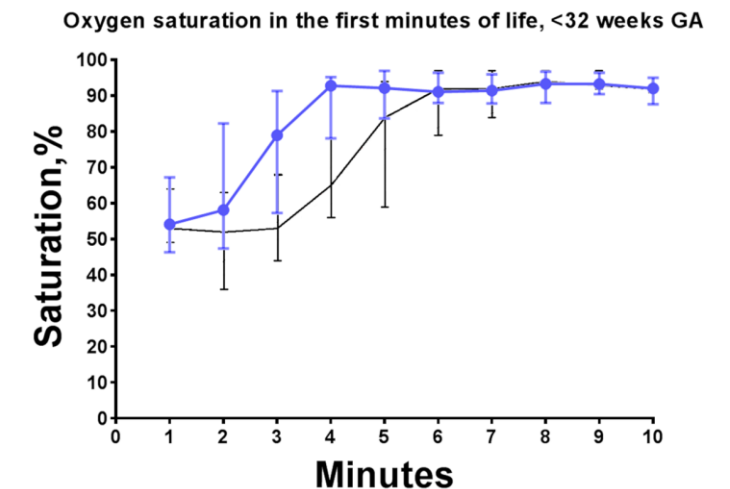
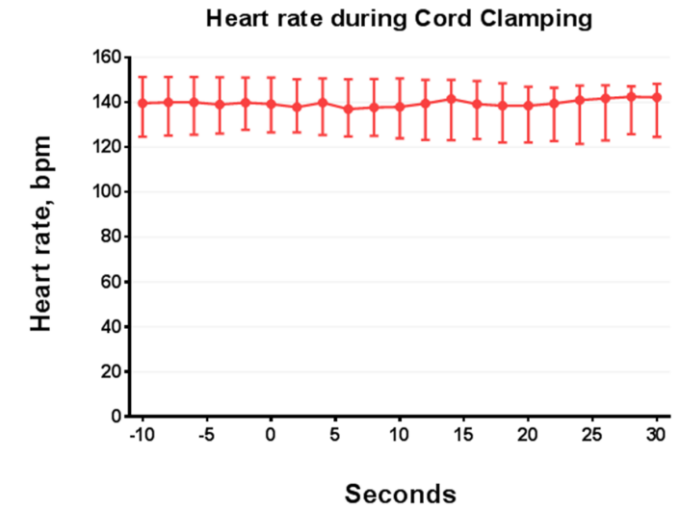


“We have been performing PBCC in clinical trials with the Concord Birth Trolley for over 2 years now, with great enthusiasm. I really believe that this concept has the potential to reduce complications at birth for these vulnerable newborns.”

ABC-1 shows promising results⁷

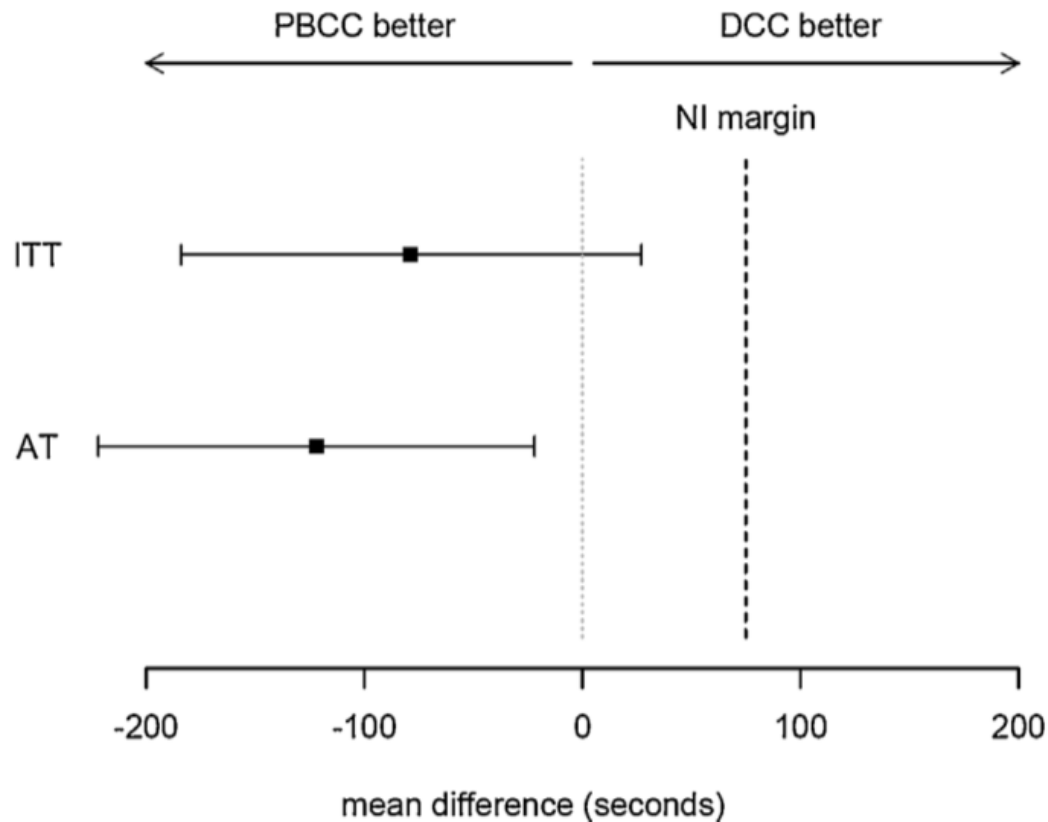


- Feasibility and safety study
- 33 babies <35 weeks gestational age have been stabilized on the Concord Birth Trolley
- Results:
 - Average time to stabilize: 4:23min (3:00 – 5:11min)
 - Using the Concord Birth Trolley is safe and feasible
 - There were no adverse events for the baby nor the mother
 - A more stable heartrate during transition and no bradycardia
 - SpO2 quickly increased, less hypoxia





ABC-2: Proven non-inferiority⁸



Forest plot for time to stabilization; shown are mean differences and 95% confidence intervals for intention-to-treat (ITT) analysis and as-treated (AT) analysis, and the predefined non-inferiority (NI) margin of 75 s. DCC, delayed cord clamping; PBCC, physiological-based cord clamping.

- Randomized non-inferiority trial
- 17 & 22 preterm infants, < 32 wks.
- Primary outcome: time to stabilize
- Results:
 - Infants receiving PBCC needed less time (-1:19min) to reach respiratory stability compared to infants receiving DCC (30-60sec).
 - Average time to stabilize: PBCC 5:54 ($\pm 2:27$) vs DCC 7:07 ($\pm 2:54$)
 - PBCC is at least as effective as current routine DCC

Current ongoing clinical trials



ABC-3 clinical trial

2019 – 2021
> 400 inclusions

10 Dutch NICU centers and international participation

Randomized controlled trial
Multicenter

2 x 330 preterm infants <30 wks gestational age

Primary outcome:
Improve intact survival with 10% (absolute) PBCC versus TBCC

PinC trial

2020 – 2022: recruiting

Erasmus MC, Radboud MC, Graz, Monash, UK Bonn and international participation

Randomized controlled trial
Multicenter

2 x 70 infants with CDH

Primary outcome:
Pulmonary hypertension diagnosed between 12-24hrs after birth via echocardiography

Late preterm and term newborns



- Nepcord III: Randomized Controlled Trial
- 231 vaginal deliveries, 34 – 41 weeks GA
- Early cord clamping vs. Intact Cord Resuscitation
- Results⁹:
 - Improved SpO₂
 - Higher Apgar score
 - Absence of negative consequences
- Follow-up at two years of age¹⁰:
 - Neurodevelopment improvement

Intact cord resuscitation versus early cord clamping in the treatment of depressed newborn infants during the first 10 minutes of birth (Nepcord III) – a randomized clinical trial



Ola Andersson^{1*}, Nisha Rana², Uwe Ewald², Mats Mållqvist², Gunilla Stripple³, Omkar Basnet⁴, Kalpana Subedi⁵ and Ashish KC²

Table 2 Measurements from infants who were randomized to resuscitation with an intact cord (intervention) or after early cord clamping (control). Intention to treat analysis

| | Cord Clamping Group, Mean (SD) | | Difference (95% CI) | P value ^a |
|---|--------------------------------|----------------|---------------------|----------------------|
| | Intact cord > 3 min | Early < 1 min | | |
| Readings from pulse oximeter | (n = 129) | (n = 93) | | |
| Saturation at 1 min (%) | 71.5 (9.3) | 62.4 (4.3) | 9.1 (7.3 to 11.0) | <.001 |
| Saturation at 5 min (%) | 83.6 (8.3) | 76.6 (4.1) | 7.0 (5.3 to 8.7) | <.001 |
| Saturation at 10 min (%) | 90.4 (8.1) | 85.4 (2.7) | 5.0 (3.5 to 6.5) | <.001 |
| Heart rate at 1 min | 105 (3) | 116 (5) | -10 (- 11 to -9) | <.001 |
| Heart rate at 5 min | 124 (4) | 134 (4) | -10 (- 11 to - 8) | <.001 |
| Heart rate at 10 min | 136 (2) | 135 (2) | 1 (0 to 1) | .03 |
| Apgar score | (n = 134) | (n = 97) | | |
| Apgar at 1 min | 5.1 (1.0) | 4.3 (1.0) | 0.8 (0.5 to 1.1) | <.001 |
| Apgar at 5 min | 6.8 (0.7) | 6.5 (1.1) | 0.3 (0.1 to 0.5) | .01 |
| Apgar at 10 min | 9.4 (1.0) | 9.0 (1.5) | 0.4 (0.2 to 0.7) | .03 |
| Timed events, Median (interquartile range) | (n = 134) | (n = 97) | | |
| Time of start of resuscitation (sec) | 45 (28 to 68) | 45 (25 to 59) | | .19 ^b |
| Time of first cry/breath (sec) | 37 (34 to 44) | 45 (38 to 50) | | <.001 ^b |
| Time of regular breathing (sec) ^c | 78 (67 to 96) | 98 (89 to 356) | | <.001 ^b |
| Time to cord clamping (sec) | 104 (30 to 191) | 25 (14 to 40) | | <.001 ^b |
| Measurements after resuscitation | | | | |
| Baby's temperature (C°) ^d | 36.2 (0.5) | 36.2 (0.5) | 0.0 (-0.1 to 0.1) | .82 |
| Transcutaneous bilirubin (µmol/L) at discharge ^e | 97.8 (52.5) | 89.1 (52.6) | 8.6 (-5.5 to 23.0) | .23 |

Baby-DUCC trial Australia: ≥ 32 weeks GA¹¹



Delayed cord clamping helping babies breathe

Watch later Share

Watch on YouTube

Impacting the lives of many babies



Physiological-Based Cord Clamping has the potential to¹²⁻¹⁶:

- Reduce complications at birth, like sepsis, intraventricular hemorrhage (IVH) or necrotizing enterocolitis (NEC)
- Improve survival
- Prevent long term disability
- Reduce the cost of care



Implementing the Concord Birth Flow



Hospital

Understand
workflow
and impact

Implementation
plan &
decide setup

Product
delivery

Technical
setup

Training

First clinical
use

Support

Support

Product
delivery

Train

Safety testing

Concord Neonatal

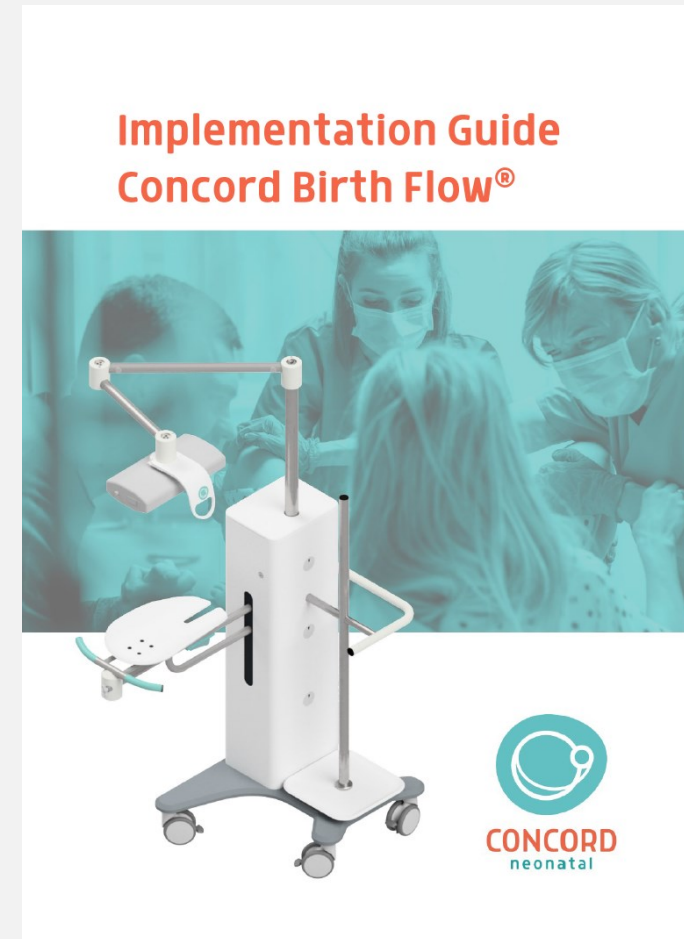
We offer an implementation program



Concord Birth Flow implementation

Comprehensive implementation program of Physiological-Based Cord Clamping

- CBT-0001: Concord Birth Trolley
 - Mobile trolley, including 1 semi-reusable mattress. Excl. 3rd party equipment and excl. radiant warmer.
- Shipment
- Training Concord Birth Flow
- Installation safety test before clinical use



Training Concord Birth Flow



Step 1

Workflow & protocol support

Step 2

Training reader & training video

Step 3

Multidisciplinary team training/simulation

Step 4

Train the Trainer





”

Prof. Dr. Berndt Urlesberger - University Hospital Graz



“Our team is eager to perform PBCC as often as possible. Since we have implemented this workflow, with the support of Concord Neonatal, the teamwork between obstetrics and neonatology in delivery management, has further improved.”



Don't cut the cord until the baby is ready

The science behind umbilical cord clamping at birth

by Professor Stuart Hooper



Physiological-based cord clamping:

Shared care, where the baby decides, is key.

by Professor Arjan te Pas



How to perform PBCC?

Clinical aspects of stabilization at birth with intact umbilical cord.

by Drs. Ronny Knol



Physiological-based cord clamping An obstetrician's view

by Dr. Philip DeKoninck



Intact cord resuscitation Are we ready to start implementing?

by Dr. Ola Andersson



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#ConcordTalk

A series of webinars providing tools and knowledge needed to implement **#PhysiologicalBasedCordClamping**.

Key experts offer their latest scientific insights, expertise and practical experience.

Contact us: join@concordneonatal.com

Join our Concord Talk

Register: concordneonatal.com/concord-talk

We are Concord Neonatal



Nerea Grisaleña
Engineer



Alex Vernooij
CTO
Co-inventor



Rianne Rotink
CEO



Marleen Coopmans
Concord Consultant



Björn Valentijn
Concord Trainer



Our Mission: A shock free birth as a birth right



We exist to help babies, and their parents, to win in the first minutes of life outside the womb, by providing the products, processes and knowledge that give babies a “shock free” birth, starting with the Concord Birth Flow.

Birth can be improved. And we will do it, together with scientist, caregivers and parents around the world.

Because when babies win, we all win.





We invite everyone to collaborate with us to innovate for a “shock free” birth flow for every baby. Especially the ones that need it the most.



Let's get birth right!

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Rianne Rotink, CEO

riane.rotink@concordneonatal.com +31 6 425 594 93

info@concordneonatal.com | www.concordneonatal.com |    concordneonatal

Literature references



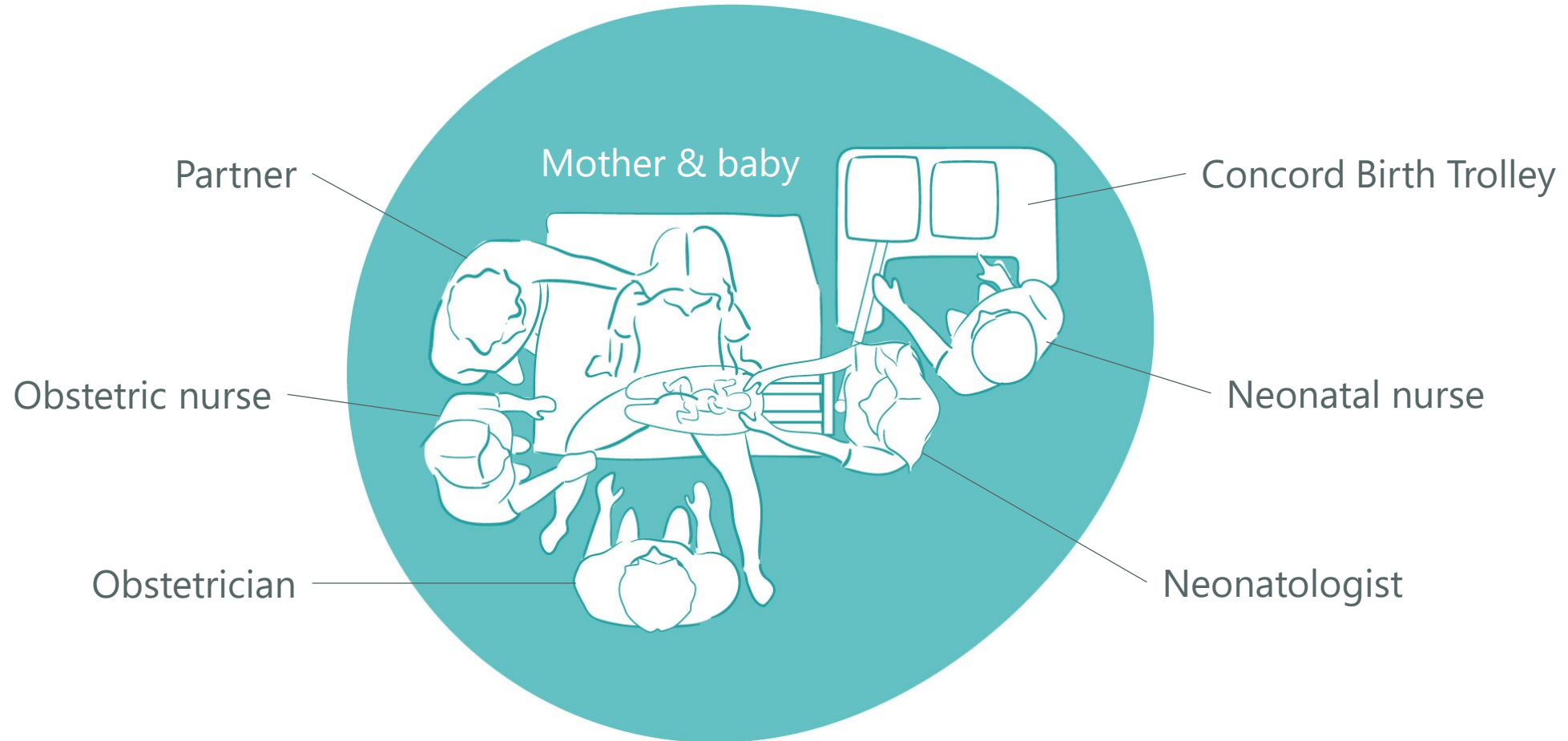
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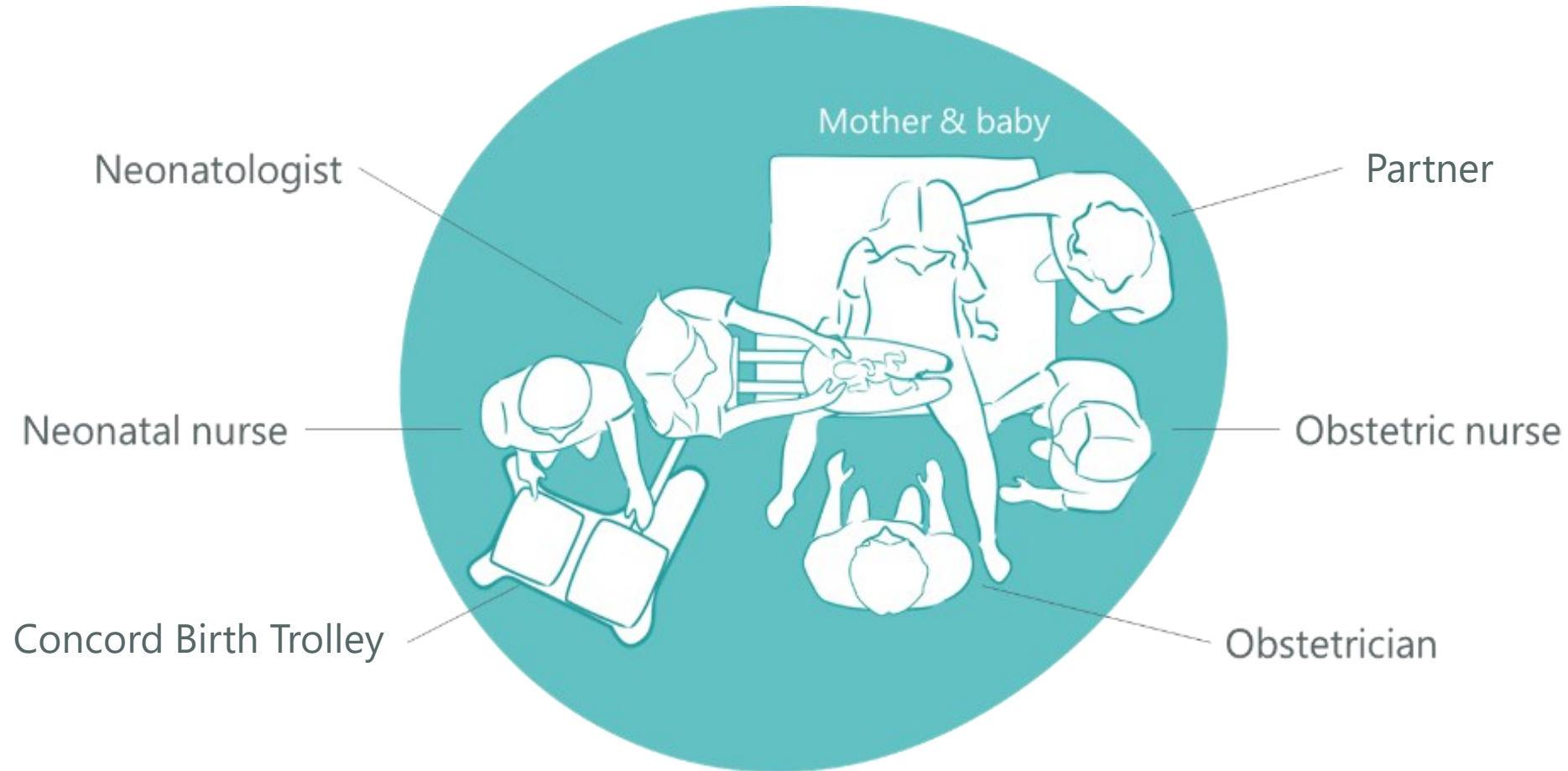
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Positioning in the Delivery Room



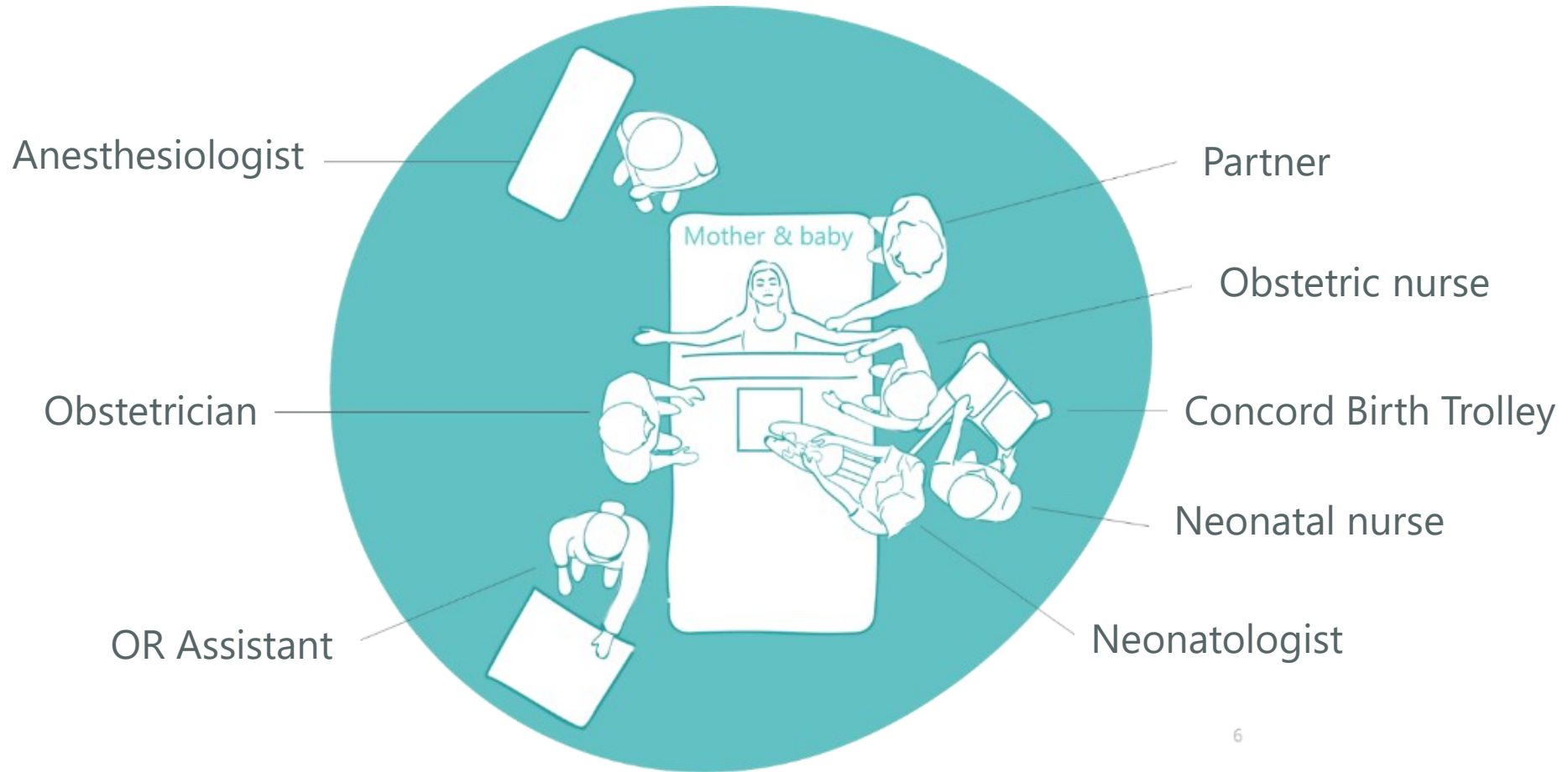
N.B. The team can be different per hospital

Positioning in the Delivery Room



N.B. The team can be different per hospital

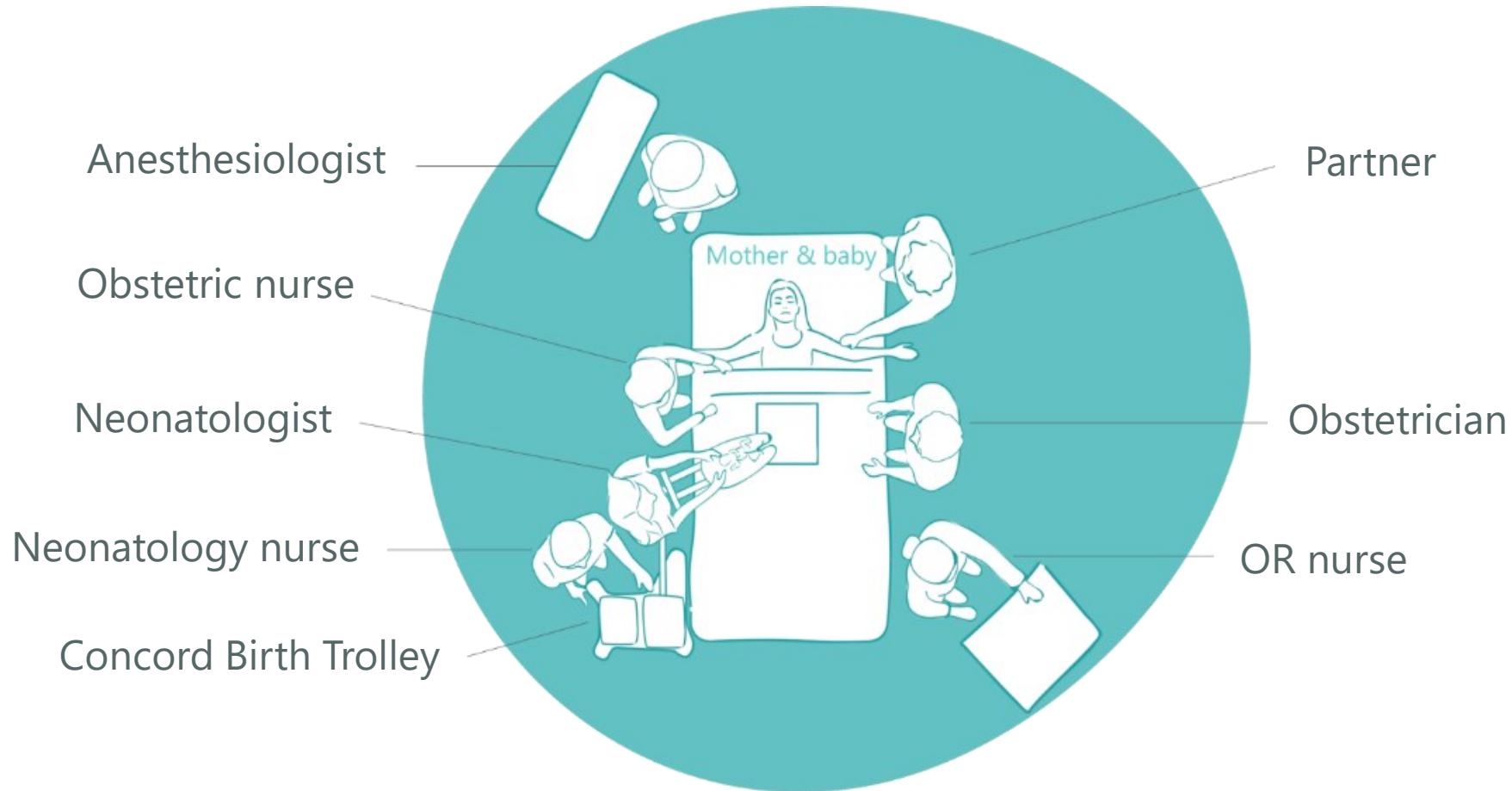
Positioning in the OR



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N.B. The team can be different per hospital

Positioning in the OR



N.B. The team can be different per hospital

Physiological-Based Cord Clamping (PBCC)



First breathing, then clamping

A

Aeration

B

Breathing

C

Clamping



First breathing, then clamping



Criteria:

HR > 100 bpm

SpO₂ > 85%

FiO₂ < 40%

nCPAP