The art of simulations and debriefing strategies

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PXL DE HOGESCHOOL MET HET NETWERK

Belgium


North Sea
NETHERLANDS
ANTWERP
F L A N D E R S
GERMANY
WEST FLANDERS
EAST FLANDERS
FLEMISH BRABANT
PXL
BRUXELLES
Brussels
Fourons/ Voeren
WALLOON BRABANT
HAINAUT
LIÈGE
W A L L O N I A
NAMUR
FRANCE
LUXEMBOURG
N
LUXEM- BOURG
0
25
50 Miles
0
25
50 Kilometers


PXL

Wat does Simulation Trainig mean to you as a professional?

[Wat does Simulation Trainig mean to you as a professional? – Poll Everywhere 2.0]

Definition

Definition of Simulation Training in Midwifery

Simulation training in midwifery is a learner-centered educational strategy that replicates clinical scenarios using high-fidelity mannequins, standardized patients, or virtual environments. It is designed to enhance midwives' clinical competence, decision-making, communication, and teamwork in a safe, controlled setting. This method allows students to practice procedures and manage emergencies—such as postpartum hemorrhage or neonatal resuscitation—without risk to real patients. Simulation-based education supports experiential learning and reflective practice, and has been shown to improve patient safety and professional confidence (Changuiti et al., 2023; Granry & Moll, 2012; Weller et al., 2012).

Definition

International Nursing Association for Clinical Simulation and Learning (INACSL):

"An array of structured activities that represent actual or potential situations in education and practice and allow participants to develop or enhance knowledge, skills, and attitudes or analyze and respond to realistic situations in a simulated environment or through an unfolding case study."[35(pS9)]

A simulation environment as an interactive student centred collaboration with teachers that promotes trust and the **authenticity** of the simulated experience with the advantage of the student's ability to 'practice' in a safe learning environment. (Jeffries et al., 2015)

Importance

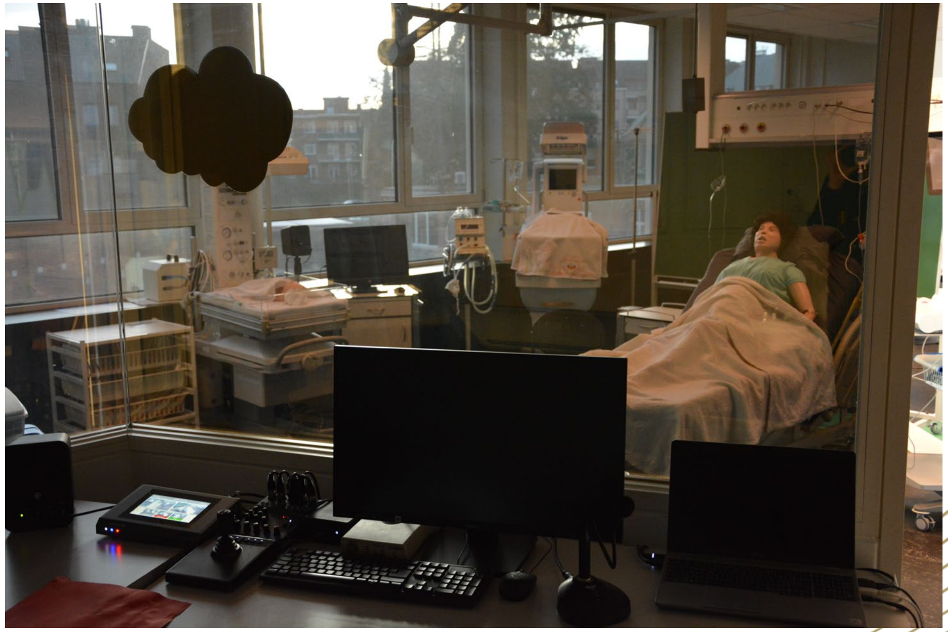
Simulations can be used to train both novice and experienced nurses and replicate a large variety of situations. They mimic real-life experiences through a diverse spectrum of technologies ranging from simple low-fidelity to high-fidelity simulations (Hovancsek, 2007).

Simulated patients, role-play and mannequins are used to improve clinical skills and the decision-making process of nurses. Using simulation-based clinical scenarios to practise complex or potentially harmful nursing activities mitigates or reduces patient safety issues and ethical concerns (Kim et al., 2016).

VR- bril

Immersive room


Dräger




Affinity


HULP
4T'S
TRAUMA


Valleylab

Crew Resource Management (CRM) Principles in Healthcare

Crew Resource Management (CRM) is a structured approach to improving safety and performance in high-risk environments, originally developed in aviation and now widely applied in healthcare. CRM focuses on optimizing human performance by addressing non-technical skills such as communication, leadership, and decision-making.

Gross, B., Rusin, L., Kiesewetter, J., Zottmann, J. M., Fischer, M. R., Prückner, S., & Zech, A. (2019). Crew resource management training in healthcare: A systematic review of intervention design, training conditions and evaluation. BMJ Open, 9(2), e025247. https://doi.org/10.1136/bmjopen-2018-025247

The core CRM principles include:

1. **Situational Awareness**: The continuous perception and understanding of the clinical environment, enabling anticipation of future events and early recognition of potential threats.
2. **Decision-Making**: The application of systematic strategies to make timely and effective clinical decisions, particularly under pressure or uncertainty.
3. **Communication**: The use of clear, direct, and assertive communication to ensure accurate information exchange and mutual understanding among team members.
4. **Teamwork**: The promotion of collaborative behavior, mutual support, and shared responsibility within interdisciplinary healthcare teams.
5. **Leadership and Followership**: The ability to lead effectively and support leadership roles within the team, ensuring coordinated and adaptive responses to dynamic clinical situations.
6. **Task Management**: The prioritization, delegation, and execution of tasks to manage workload efficiently and reduce the risk of errors.
7. **Error Management**: The proactive identification, mitigation, and learning from errors to enhance patient safety and system resilience.

Non-technical skills are expressed through specific, observable behaviors that can be assessed and developed.

1. **Demonstrate Leadership and Followership**
Exhibit adaptive leadership while supporting team coordination.
2. **Distribute Workload**
Allocate tasks efficiently to manage cognitive and operational demands.
3. **Utilize Effective Teamwork, Clear role allocation**
Foster collaboration and mutual support within the team.
4. **Mobilize All Available Resources**
Engage human and material resources to optimize performance.
5. **Use All Available Information**
Integrate diverse data sources to inform clinical decisions.
6. **Anticipate and Plan Ahead**
Prepare for potential developments through proactive planning.

Non-technical skills are expressed through specific, observable behaviors that can be assessed and developed.

7. Request Assistance Early
Seek support promptly to prevent escalation of risks.

8. Communicate Effectively
Apply structured, short and assertive communication strategies. **Closed Loop!!**

9. Use Cognitive Aids
Employ tools such as checklists and protocols to support decision-making.

10.Perform Systematic Checks and Double-Checks
Apply structured verification to ensure procedural accuracy and reduce error risk.

11.Prevent and Manage Tunnel Vision

Maintain broad situational awareness to avoid cognitive fixation on limited aspects of a scenario.

These principles are designed to function as error countermeasures, with three lines of defense: (1) avoiding errors, (2) detecting and correcting errors early, and (3) minimizing the impact of errors that occur.

Non-technical skills are expressed through specific, observable behaviors that can be assessed and developed.

12. Focus Attention Strategically
Allocate attentional resources effectively to prioritize critical tasks and minimize distractions.

13. Know Your Work Environment
Develop familiarity with the clinical setting, equipment, and team roles to enhance operational efficiency.

14. Prioritize Dynamically
Continuously reassess and adjust priorities in response to changing clinical conditions.

15. Engage in Continuous Evaluation
Monitor actions and outcomes in real time to identify deviations and refine performance.

Debriefing

Debriefing is a structured reflective process following simulation activities, aimed at consolidating learning, enhancing clinical reasoning, and improving future performance. In healthcare simulation, effective debriefing is grounded in educational theory and behavioral science, and is recognized as a critical component of experiential learning.

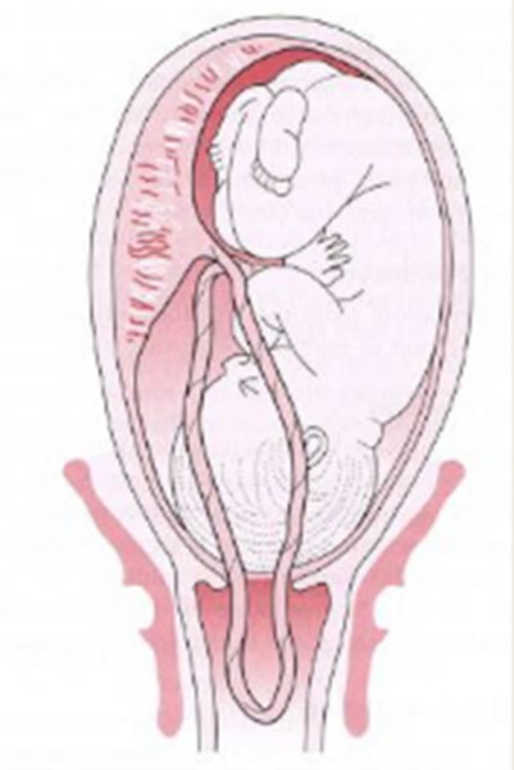
Simon, R., Raemer, D. B., & Rudolph, J. W. (2010-2018). *Debriefing Assessment for Simulation in Healthcare (DASH)* [Database record]. APA PsycTests. https://doi.org/10.1037/t59053-000

Debriefing

- Hot: within 48 hours
- Cold: within 1 – 2 weeks


PRACTICE
MAKES
PERFECT

Umbilical Cord Prolaps



Definition:

Cord prolapse is the presence of the umbilical cord through the cervix alongside (occult) or past the presenting part (overt), in the presence of ruptured membranes.

The incidence is ranges from 0.1% to 0.6%.
In non cephalic presentations, the incidence is 1%.

It has been reported that male fetuses appear to be predisposed to cord prolapse.

Hywel Dda / NHS Wales (2025) –
RCOG Green-top Guideline No. 50 (revised 2024)

RISK FACTORS FOR CORD PROLAPS

General	Procedure Related
Multiparity	Artificial rupture of the membranes
Low birth weight < 2.5Kg	Vaginal manipulation of the fetus with ruptured membranes
Prematurity <37 weeks	External cephalic version procedure
Fetal congenital abnormalities	Internal podalic version
Breech presentation	Stabilizing induction of labour
Transverse, oblique and unstable lie	Insertion of a uterine pressure transducer
Second twin	Large balloon catheter induction of labour
Polyhydramnios	Fetal scalp electrode application
Unengaged presenting part	
Low lying placenta	

Perinatal mortality varies in different studies. The presence of risk factors should raise awareness, but the occurrence of cord prolapse remains extremely unpredictable.

Hywel Dda / NHS Wales (2025)

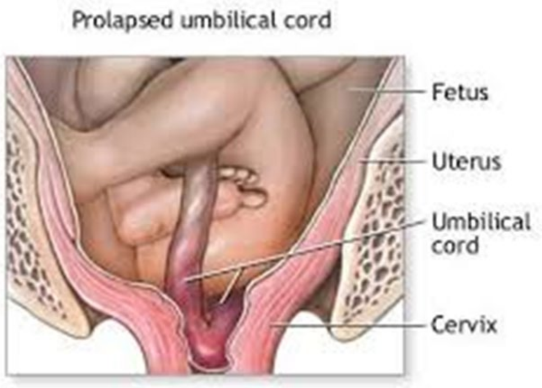
DIAGNOSIS

- Early diagnosis is important!

- Cord prolapse should be suspected when
  - there is an abnormal fetal heart rate pattern, especially if such changes commence soon after membrane rupture, either spontaneous or artificial.

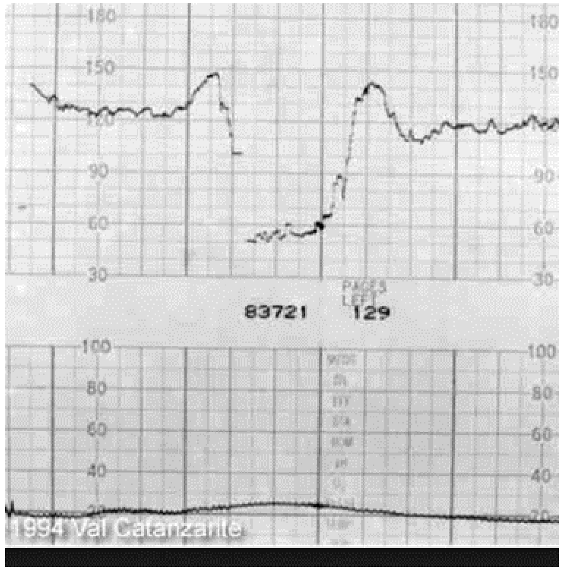
- Speculum and/or digital vaginal examination should be performed when cord prolapse is suspected.
  - The soft pulsatile umbilical cord is felt or seen within the vagina.

- The diagnosis is sometimes made when cord is seen prolapsing out of the vagina.

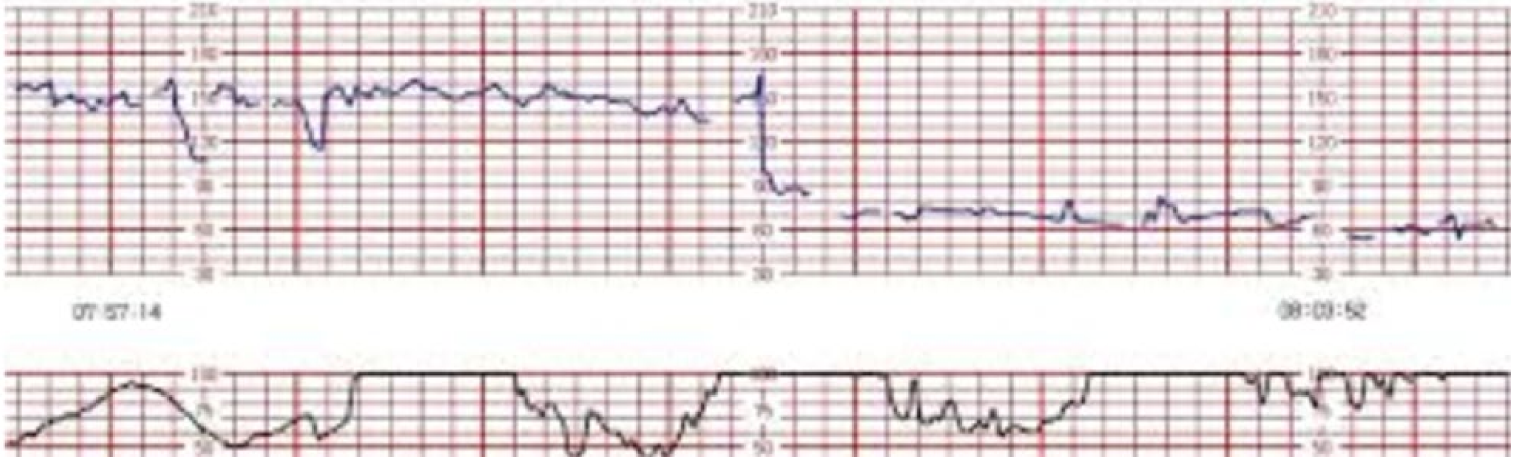


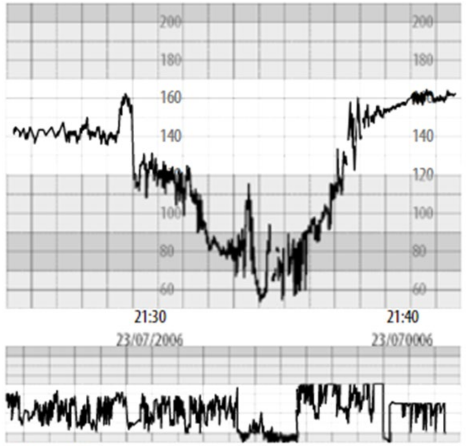
Hywel Dda / NHS Wales (2025)

CTG after cord prolaps



ACUTE HYPOXIA !





Figuur 20.16. Acute hypoxie.

Masterclass CTG (Neoventa 2024)
Chandraharan, E. (2018)

OBSTETRIC EMERGENCY

Think **CORD**! **C**onsider **O**rganise Help **R**elieve Pressure **D**ecision for Birth

Consider
- At every vaginal examination in labour
- If abnormal fetal heart with spontaneous rupture of membranes
- After membrane rupture with risk factors

Organise help
- Obstetricians and midwives
- Anaesthetist and perioperative team
- Neonatal team

Relieve pressure
- Manually elevate presenting part or fill bladder
- Encourage into left lateral position with head down and pillow placed under left hip OR knee–chest position
- Consider tocolysis

Decision for birth
- Emergency transfer to hospital labour ward
- Assess and assist birth by quickest means
- Urgency of birth dependent on fetal heart rate and gestational age
- If caesarean section, consider if regional anaesthesia appropriate

the Midwifery Unit or Home Setting

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RCOG Green-top Guideline No. 50 (revised 2024)

MANAGEMENT

Think **CORD**! **C**onsider **O**rganise Help **R**elieve Pressure **D**ecision for Birth

Recognise cord prolaps and FHR +

Call for Help:
Obstetricans and midwives
Anaesthesist and perioperative team
Neonatal team

Full dilatation

YES ?
Consider operative vaginal delivery

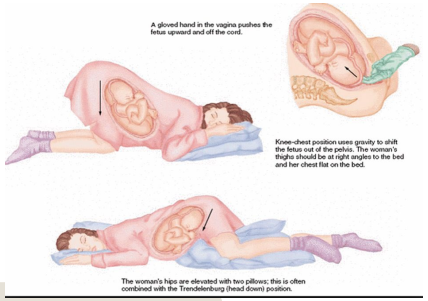
NO ?
RELIEVE PRESSURE

Continuously fetal monitoring
Manually elevate presenting part
Position women
Consider tocolysis

Caesarean section
Consider if reginioal anaesthesia appropiate
Keep your fingers in place until the incision has been made and the head can be delivered

Recognise cord prolaps and FHR -

Confirm intrauterine fetal death and await spontaneous delivery



Hywel Dda / NHS Wales (2025) –
RCOG Green-top Guideline No. 50 (revised 2024)
Jacquemeyn Y. (2022)

MANAGEMENT

Think **CORD**! **C**onsider **O**rganise Help **R**elieve Pressure **D**ecision for Birth

Recognise cord prolaps and FHR +

Call for Help:
Dial 999 for ambulance

Knee–chest position or Trendelenburg
Fill bladder
Secure IV- access / take blood

Emergency transfer to hospital

Recognise cord prolaps and FHR -

Transfer to hospital labour ward

Caesarean section
Consider if regional anaesthesia appropiate
Empty bladder when the incision is made

Hywel Dda / NHS Wales (2025) –
RCOG Green-top Guideline No. 50 (revised 2024)
Jacquemeyn Y. (2022)

Bladder filling

Five key steps for easy and effective maternal bladder filling:

1. **Prepare equipment*** – Connect 500 mL bag of sterile 0.9% sodium chloride to an intravenous infusion (IV) giving set and prime the giving set by running fluid through the full length of the tubing. Close the flow clamp once the fluid is fully run through.
   ***Important to check that the end of the Luer connector of the IV giving set fits well inside the foley catheter so the bladder can be effectively filled without undue leakage.**

2. Insert Foley catheter into the urinary bladder – N.B. depending on urgency, *consider* allowing bladder to empty before attaching IV giving set and running in sterile 0.9% sodium chloride.*
   *** Currently, there is no robust evidence to support emptying versus not emptying the bladder first. However, whilst emptying prior to filling the bladder may be considered, it should not lead to delay in transferring the woman and/or expediting birth.**

3. Firmly connect IV giving set into foley catheter (which is attached to the 500 mL bag of saline) and squeeze the bag to instil 500 mL of sterile saline into the bladder as quickly as possible. Close the flow clamp once 500mL fluid has been instilled.

4. Leave the IV giving set and empty bag of fluid (or near empty bag) attached to the catheter for transfer to hospital/labour ward.
   (This will help remind staff to empty her bladder when the woman arrives in hospital/theatre).

5. **Empty maternal bladder prior to attempting any method of birth -** detach giving set to allow fluid to drain from the bladder, then either remove the catheter if aiming for vaginal birth, or attach a catheter bag if planning for caesarean birth.

Hywel Dda / NHS Wales (2025)

GOOD to KNOW

- Comparison of Key Guidelines on Umbilical Cord Prolapse

Topic	Netherlands / Flanders (Richtlijnendatabase 2022)	RCOG Green-top Guideline No. 50 (revised 2024)	Hywel Dda / NHS Wales (2025)
Handling of the cord	Avoid manipulation; keep moist if protruding outside vagina	Same advice, explicitly discourage attempting to replace cord into uterus	Same as RCOG Apply a dry pad to try to keep cord inside
Delivery target time	"As soon as possible" – no strict minute target	Aim for decision-to-delivery ≤ 30 min if fetal heart is present	More stringent: aim for delivery within **20 min** if viable fetus

- Don' forget to ask: AMPLE
  - Allergies
  - Medications
  - Past ilness / Pregnancy / background
  - Last meal
  - Events / environment related to injuru (jewelry, lenses,...)

- Ensure safe transport to the operating room
  - raise the bed rails
  - make sure that you, as the midwife, are sitting safely on the bed.

Documentation

CORD PROLAPSE PROFORMA

Addressograph

or name and unit no

Please tick the relevant boxes

Diagnosed: Home ☐ Birth Centre ☐ CDS ☐ Ward ☐

Time of diagnosis:.........................

Cervical dilatation at diagnosis: .... cm

If at Home / Birth Centre

Ambulance called? Yes ☐ No ☐ Time called: .... Arrived: ....

CDS contacted? Yes ☐ No☐ Time called: .... Arrival time at Hospital: ....

If on CDS/Ward

Senior Midwife called Yes ☐ No ☐ Time............ Arrived...............

Senior Obstetrician called Yes ☐ No ☐ Time........... Arrived...............

Grade of Obstetrician: ....

Neonatologist called Yes ☐ No ☐ Time........... Arrived...............

Procedure used in managing cord prolapse		
Elevating the presenting part manually	Yes ☐	No ☐
Filling the bladder	Yes ☐	No ☐
Exaggerated Sims (left lateral) / Knee-Chest position / Head Tilt / Trolley / bed (Please circle)		
Tocolysis with sc Terbutaline 0.25mg or other	Yes ☐	No ☐
Decision to birth interval: ....minutes		

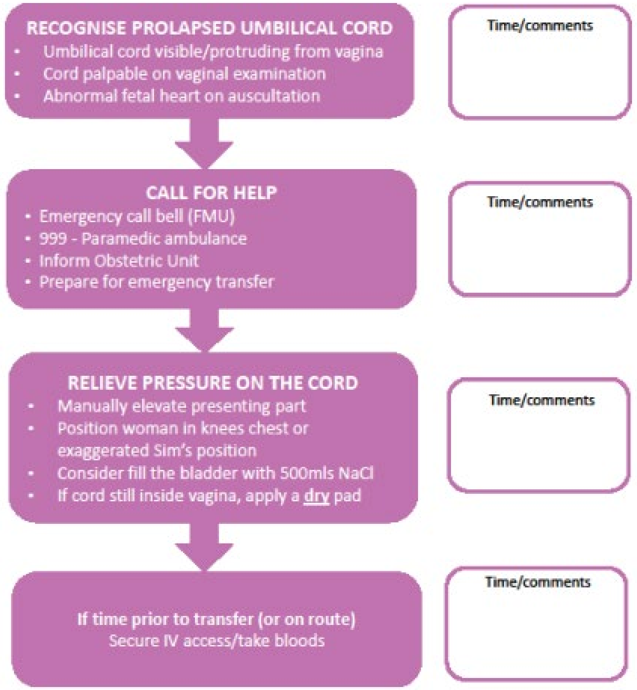
Mode of birth	**Mode of Anaesthesia**
Spontaneous vaginal ☐	GA ☐
Forceps ☐	Spinal ☐
Ventouse ☐	Epidural ☐
LSCS ☐	

Apgar Score	**Baby's weight:**	
:1 min	Cord PH	Base Excess:
:5 min	Venous:	
:10 min	Arterial:	
Admission to NICU? Yes ☐ No ☐		
AIMS form completed? Yes ☐		
Known Risk Factor? YES ☐ NO ☐ If YES, please state:		
Mother debriefed Yes ☐ No ☐		

Signature: .... Print: ....

Designation: Date:

Community Algorithm for Management of Umbilical Cord Prolapse



Document all actions on proforma and complete DATIX Incident form

Documentation

Appendix II: Cord prolapse documentation pro forma

Name ....
Date of Birth ....
Hospital No ....

Please tick the relevant boxes:

Senior midwife called: Yes ☐ No ☐
Time called:........................ Time called:........................ Name:...................................
Obstetrician called: Yes ☐ No ☐
Time called:........................ Time called:........................ Name:...................................
Grade of obstetrician:..
Anaesthetist called: Yes ☐ No ☐
Time called:........................ Time called:........................ Name:...................................
Neonatologist called: Yes ☐ No ☐
Time called:........................ Time called:........................ Name:...................................
Diagnosed at home or hospital: Home ☐ Hospital ☐
Time of diagnosis:........................
Cervical dilation at diagnosis:............cm

Procedures used in managing cord prolapse		
Elevating the presenting part manually	Yes ☐ No ☐	
Filling the bladder	Yes ☐ No ☐	
Left lateral, head tilted down / knee–chest position (please circle)		
Tocolysis with subcutaneous terbutaline	Yes ☐ No ☐	
Mode of birth	Mode of anaesthesia	
Normal ☐	General anaesthetic ☐	
Forceps ☐	Spinal ☐	
Ventouse ☐	Epidural ☐	
Caesarean section ☐	None ☐	
Other ☐		
Diagnosis-to-birth interval:........................minutes		
Neonatal outcome		
Apgar scores:	Weight:......................kg	
1 min:	Cord pH	Base excess
5 mins:	Venous:	
10 mins	Arterial:	
Admission to neonatal intensive care unit (NICU)/special care baby unit (SCBU): Yes ☐ No ☐ Reason:..		
Risk incident reporting form completed: Yes ☐		
Known risk factors? Please state:..		
Mother debriefed Yes ☐ No ☐		

Signature:... Print:...
Designation:... Date:..

RCOG Green-top Guideline No. 50 (revised 2024)

Simulation

CORD
PROLAPS

Hospital / Home

Debriefing

Environment
Communication
Close loop
Safety
Teamwork
Decision making
Clear Role allocation

Thank you!

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