

Maternal, Newborn, and Children's Simulation

Obstetric-Neonatal Scenario: Maternal PPH with Neonatal hypovolaemia

Set Up:

| Mannequin /Confederate | Mouflage | Equipment available | Drugs available |
|--------------------------|-----------------------------|---|-------------------------------|
| SimNewB | IV (mother) | IV with drainage bag for mother | Adrenaline 1:10,000 |
| Simulated patient-mother | Blood for haemorrhage | Maternal ECG leads + oxygen saturation probe (2nd part) | Normal Saline 3 X 1 L bags |
| 2 Confederate-midwives | Blood stained sheets | Adult self-inflating bag | |
| Mama Natalie with Sim Pt | | Maternal urinary catheter | |
| | Umbilical cord in manikin | Oxygen mask& tubing (mother + baby) | Vitamin K ampoule |
| | Blood in newb umbi | Flow meter (mother + baby) | 2 Blood packs (mother + baby) |
| | Cold packs on sim NewB | Neonatal self-inflating bag + mask | Syntocinon/ergometrine |
| | Powder on baby to look pale | UVC/UAC + paed pack Neonatal & adult stethoscope | 5% dextrose |
| | | Neonatal resuscitaire & neopuff = intubation equipment | 10% Dextrose |
| | | 26g needle + 1 /10/30/50ml syringes | Blood for mama Natalie |
| | | Trolley for mother to lie on | |

Monitor: **Mother:** Basic, Oxygen saturation, then ask for ECG leads (SIM MON).
Baby: Basic: Oxygen saturation, allowing a HR

Paperwork Required: Cord Blood gas - venous
 Cord Blood gas - arterial

Learning Objectives:

(1) *Medical*

- Recognition & Management of Maternal Peri-partum haemorrhage
- Instigation of basic neonatal life support-midwifery team
- Instigation of advanced neonatal life support- neonatal team
- Management of neonatal severe hypovolaemia

(2) *CRM*

- Demonstrate effective handover & communication between midwifery, neonatal team, and RMH teams

Synopsis of Scenario

Mother comes in to ER following a trauma (on a trolley) and delivers(vaginally if obstetric team available, LUCS if no obstetric team)- becomes quieter/drowsy. Bleeds during the delivery. Mother requires fluid resuscitation and infant requires fluid resuscitation and advanced life support.

Patient Demographics

| | | | | |
|------------------|-----------------------------|----------|-----------|--|
| Patient Name: | Sheri Davis | DOB/Age: | 24/9/1989 | |
| Medical Record#: | 6566666 | Weight: | 62 kgs | |
| Allergies: | penicillin | Female | x | |
| Dx/Procedure: | G2 P1, 39+4 weeks pregnant, | | | |
| Other: | IVF pregnancy | | | |

Introductory information:

- G2 P1 39/40
- IVF Pregnancy
- In a motor vehicle accident: brought in by ambulance officers from the scene, bleeding, in final stages of labour, feeling dizzy
- Delivers as soon as she arrives
- BP: 100/65, HR 90

Method of bringing team into the simulation

- Confederate triage nurse calls for ER nurses as mother is delivering and bleeding (~700 ml)
- Comments: Baby has delivered and comments that maternal blood pressure has dropped (**only if obstetric team present, mother stable if only midwives present**)
- Conf nurse asks the ER nurses to call an obstetric/neonatal code if they do not suggest this
- ER team to start stabilisation of mother and baby
- Midwives arrive to care for mother
- Neonatal team arrive to care for baby with RMH team

ISBAR HANDOVER (for mother)

- I** I am x, and this is Sheri Davis
S She has delivered the baby and it needs resuscitating
B She is G2P1 39 weeks, has had a normal pregnancy, and is bleeding
A She has delivered a baby and has had a post-partum haemorrhage of around 700ml, her BP is 100/65 and HR 90
R I think she needs additional assessment and management

Initial Observations:

Mother (depend on team)

| | ↑, N, ↓, absent | Description |
|--------------------------------------|-----------------|--|
| Appearance | Mother CR 3 sec | |
| HR | ↑ | Mother 90/min |
| RR | normal | 20/min |
| Temp – peripheral | Normal | |
| Saturation | Mother 98% | |
| Non- invasive BP – upper limb | | 100/65 if asked for |
| Neuro | | Becomes quiet as obstetric team arrive |

Newborn

| | ↑, N, ↓, absent | Description |
|--------------------------|--|---|
| Appearance | Baby pale, mottled (Confed ER nurse to cue) Baby floppy, not crying | |
| HR | ↑ | Baby 190/min then drops to 80 over 30 sec as Paediatric team arrive |
| RR | ↓ | Baby RR 20/min, shallow, then apneic after paediatric team arrive |
| Temp – peripheral | ↓ | Baby feels cool peripherally |
| Saturation | Absent | Baby not picking up due to poor perfusion |
| Non- invasive BP | | 53/35 (give only if asked for) |
| Pupils | small | 2mm difficult to elicit reaction |

ISBAR HANDOVER (Neonate)

I I am X, and this is baby Davis
S She is just born, and is very pale, with a fast heart rate
B Her mother has been bleeding, and is hypotensive
A I am concerned the baby has lost blood as well
R I need help with the resuscitation

| Progression Good | | | Progression Good | | |
|--|--|--|--|--|------------------|
| Mother | | | Newborn | | |
| | | | Examination | | Ideal Management |
| DRS ABC | Recognises PV bleeding Oxygen Gives 1 litre of fluid (NSaline),STAT Call an obstetric trauma code | | HR ↑200/min | Resuscitate in air | |
| | | | RR↓ | Looks for chest rise: Starts IPPV | |
| | | | Temp – peripheral cool | Recognises peripartum haemorrhage | |
| | | | Saturation Absent | Calls Neonatal code blue Continues IPPV until paed reg arrives | |
| | | | Non- invasive BP – upper (or lower) limb | Handover to paediatric reg Reassess ABC Takes over IPPV (fellow and NICU nurse late to arrive) | |
| CR Capillary refill 3 sec | Rubs up the uterus Calls for help for mother (another midwife) Sends off Bloods-FBE, Group & Hold, coags | | | | |
| HR tachycardic 110/min | Inserts IDC | | | | |
| RR normal (18/min) | syntocinon given, suggest ergometrine IV- IM250IU 40 units of syntocinon - infusion, | | Pupils normal | hands over to fellow & NICU nurse | |
| BP BP stable if fluid given | | | | Fellow asks plan of management (cue CR 5 sec) if not suggesting insertion of UVC & volume Reg to suggest insertion of UVC + intubation Gives volume 20 ml/kg + 20ml/kg + 20ml/kg Saline or blood May allow to intubate depending on progress | |
| | Delivers placenta | | | | |
| | | | | | |
| | | | | | |
| | Communicates with Neonatal team re: bld loss | | | | |
| | | | | | |
| If mother given synto & ergo, + fluid, HR decreases to 100/min, BP increases to 110/80, & becomes more vocal. Cries, asking how her baby is. | | | | Asks about communication with family | |
| DRS ABC | Checks resuscitaire Call a Neonatal code blue | | If IPPV commenced & volume given, neonate increases respiratory effort after 2 minute, HR to 170/min, Oxygen saturation 95%, RR 45 | | |

| Progression Poor | | | |
|---|--|--|--|
| Mother | | Newborn | |
| Prompt | if Poor Management | Prompt: initial conf midwife | if Poor Management |
| DRS ABC Conf needs to prompt PV bleeding | Recognises PV bleeding Oxygen | comments peripheral cool | Should commence CPR |
| CR Capillary refill 3 sec initially, then worsens to 5 sec | Rubs up the uterus Calls for help for mother (another midwife) | Saturation Absent Comment palor Prompt if not calling code blue | Calls Paediatric code blue Continues IPPV until paed reg arrives |
| HR tachycardic 120/min | Gives 1 litre of fluid (NSaline), | Non- invasive BP – upper limb | Handover to paediatric reg Reassess ABC Takes over IPPV (fellow and NICU nurse late to arrive) |
| RR normal then decreasing (18/min) | syntocinon given, suggest ergometrine IV & IM , assesses respiratory status | Pupils normal | hands over to fellow & NICU nurse |
| BP drops to 85/50,(prompt if not checked) | Suggest Call for blood (4L Oneg), gives another Litre of saline Sends bloods for coags, FBC | Continues bradycardia if no volume or not intubated NICU nurse/NeoFellow to prompt poor perfusion & palor-allow reg to come up with decisions | Fellow asks plan of management (cue CR 5 sec if not suggesting insertion of UVC & volume Reg to suggest insertion of UVC Gives volume 20 ml/kg + 20ml/kg + 20ml/kg Saline or blood |
| Conscious state decreasing if management not appropriate-midwife to cue | Delivers placenta | Scenario finishes after 15 minutes or after team have intubated & inserted UVC, given N Saline, and asked for Blood. | |
| | Calls another obstetric reg/consider theatre | | |
| | Communicates with Neonatal team re: bld loss Communicates with mother | | |
| Scenario finishes when above management takes place or after 15 minutes | | Resources: RWH Clinical Practice Guidelines Management of Post-partum Haemorrhage 2010 ARC guidelines-Basic and advanced Neonatal Life Support | |

| | |
|--------------------|--|
| DRS ABC | Does not Check resuscitaire? Or call a Neo code Blue |
| HR ↑200/min | Or Resuscitates in Oxygen |
| RR↓ | Hr drops(50) if does not Start IPPV |