Maternal, Newborn, and Children's Simulation
Obstetric-Neonatal Scenario: Eclamptic Seizure – neonate unstable

Set Up:

Mannequin /Confederate	Moulage	Equipment available	Drugs available
SimNewB	IV ++ drainage (mother)	Oxygen/mask/flow meter+ tubing for mother	Adrenaline 1:10,000
Simulated patient-mother	Pink fluid for Mama Nat	IV giving set + pump	Normal Saline 3 X 1 L bags
Confederate-midwife 1		Flow meter	Magnesium sulphate load + infusion
Mama Natalie with Sim Pt		26g Needle + 1 ml /10/30 + 50 ml syringes	Hydralazine
	Clamped Umbilical cord in manikin	Neonatal self-inflating bag	Labetolol
	Blood in newb umbi	Neonatal resuscitaire + neopuff with blender	
Confed: NICU nurse/midwife		UV Catheter/ IV with drainage bag	Syntocinon/
	Moulage baby as very pale	Intubation equipment: 0 & 1 miller blade + laryngoscope 3.5 mmETT + introducer + paedicap	
		Neonatal stethoscope	10% Dextrose
		Adult stethoscope	Vitamin K ampoule
		Neonatal hat	Nsaline for baby
		Paediatric pack/sterile gloves/umbi cord tie/straight scalpel blade	Intubation bloods
		Maternal Eclamptic pack (?contents)	
		Neonatal and maternal blood pressure cuffs	
		Maternal urinary catheter	

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
Maternity obs chart (partogram)
Blood results (mother- urate, Ur & Cr, FBC, LFT)

Learning Objectives:

(1) *Medical*

- Medical management of maternal eclamptic seizure
  Instigation of effective basic & advanced neonatal life support
  Initial management of Hypoxic Ischaemic Encephalopathy

(2) *CRM*

- Demonstrate effective handover & communication between midwifery/obstetric & neonatal team, and within teams

Synopsis of Scenario

Mother presents in labour and hypertensive at term gestation, **fitting whilst arriving.**
Infant delivers with Hr < 60 and requires basic and then adv neonatal resuscitation (depending on participants available).
Note: confederate midwife takes blood pressures (to cue)

Patient Demographics

Patient Name:	Shirley Long	**DOB/Age:**	23 yoa	
Medical Record#:	129999	**Weight:**	68 kgs	
Allergies:	Nil	**Female**	x	
Dx/Procedure:	G1P1 40 weeks gestation			

Introductory information given to team:

- Shirley is a primigravida who presents in labour, at term gestation, and is hypertensive BP 178/115
- There has been no antenatal care in this hospital

Method of bringing the team into the simulation

- 1st Confed midwife calls another midwife: states the BP
- mother fitting: As pt starts fitting, the rest of the team are called in (confed midwife to cue if other midwife does not suggest this)
- 2nd confed midwife/neo nurse delivers baby & takes to resuscitaire, hands over, and asks one of the team to take over as she has to leave to take care of another patient

ISBAR HANDOVER: Mother	**ISBAR HANDOVER:Baby**
I I am X and this is Shirley Long **S** Shirley has presented in labour at 40 weeks and is hypertensive **B** We have no other history as she has not had antenatal care in this hospital **A** She is hypertensive 178/115, and has a headache with dizziness, and is fitting **R** I think she needs urgent treatment	**I** I am X and this is baby Long **S** She has just been born, and is not breathing adequately **B** Her mother is eclamptic and just started ftting **A** The baby's HR is 50, has poor respiratory effort, the sats not picking up **R** I need some help with the resuscitation

Initial Observations:

Mother

	↑, N, ↓, absent	Description
Appearance	Mother- Flushed (conf midwife to cue)	
HR	↑	110/min (mother)
RR	↑	28 (mother) FHR 150/min
Temp – peripheral	Normal	36.8 (mother)
Saturation	Not measured	98% if measured
Non- invasive BP – upper limb	↑	178/115
Pupils		3-4mm E&R,

Newborn After delivery

	↑, N, ↓, absent	Description
Appearance	Poorly perfused	
HR	↓	50/min
RR	absent	apneic
Temp – peripheral	N	
Saturation	↓ **not picking up**	SpO_2 52%
Non- invasive BP	35/29 (if taken)	CR 5 sec
Pupils		2mm not reacting
Neuro	Flaccid (need to cue)	

Progression Good

Mother	
Examination	**Ideal Management**
	New midwife: Places oxygen mask on mother as handed over Check Fetal heart- 90/min (conf midwife to cue)
Mother is fitting, amniotic fluid released	Call for Help (2 midwife & 2 obstet reg come in) Re-assess Sit at 45 degrees
DRS ABC Fitting:, then baby delivers (1st conf mid wife delivering the baby, 2nd conf midwife taking BP)	CueTake BP- 210/110 Ask if bloods are sent
CR: Normal	Start Mg SO4 load
HR : 110/min to 120/min after seizure	Re-check BP Call obstetric &/or NICU team
RR (28/min)	Infant delivers-(conf midwife delivers & hands to 2nd confed Midwife)
BP: ↑ to 210/110 conf midwife to cue (on Sim Mon), BP post delivery 200/105	Seizure stops after 2 minutes (after Mg SO4 comm) Lie in left lateral position Deliver placenta
Neuro: fitting ceased, mother post-ictal	Syntocinon Consider other antihypertensives Communicates with mother
If mother given MgSO4 + considers other treatment, HR decreases to 100/min, BP decreases to 125/80. Cries, asking how her baby is.	

Newborn	
Examination	**Ideal Management**
DRS ABC	2nd confed midwife to hand over to participant midwife (ISBAR of baby) New midwife Checks resuscitaire
HR ↓50 /min	Resuscitate in air, then inc to 100% after noticing poor HR Start IPPV & CPR Considers turning off overhead warmer
RR↓ apneic	Looks for chest rise
Temp – normal	Calls Paediatric code blue Monitoring placed (saturation probe)
HR ↑to 70/min, SpO2↑ to 88 % over 5 min if IPPV & CPR commenced effectively	Continues IPPV & CPR(if HR not ↑ if poor technique). SpO2 low due to poor perfusion reg/fellow arrives reassesses, continues ALS Stop CPR if HR reassessed and >60/min(if effective CPR & IPPV)
Fellow arrives & handover taken place Poor respiratory effort during handover	Reassess ABC Infant remains flaccid (neonurse to cue) Wean fiO2 as SpO2 ↑ CR improves to 3-4 sec with resus + oxygen (cue)
Pupils small	Non reactive
BP normal: 50/38 if measured	Fellow asks plan of management Discuss intubation for poor respiratory effort May allow to intubate depending on progress
	Consider Vitamin K communication with family Calls NICU/NETS
Cue: poor respiratory effort, flaccid, and poor perfusion- should intubate	

Progression Poor	
Mother	
Prompt	**if Poor Management**
DRS ABC Forgets to treat with MgSO4- fitting starts again just prior to delivery	Should call for help Apply oxygen by mask Start MgSO4 Call NICU team if not there
CR normal	Handover to NICU team
HR 100/min	Deliver placenta Gives syntocinon
RR 20/min	
BP If not treated- BP remains high 220/120: midwife to cue to check if not checked again	Give MgSO4, consider hydralazine, or labetalol, if not given Consider anticonvulsant
Neuro Complains of headache + dizzy	Communicate with mother

Newborn	
Prompt: intial conf midwife	**if Poor Management**
DRS ABC	Does not Check resuscitaire Does not do ABC appropriately
HR absent if no or poor IPPV, (↑110/min 5' after IPPV started)	Or Resuscitates in 0xygen Start CPR if HR drops
RR initially apneic	HR dec to 0-50/min if does not Start IPPV or poor technique/no CPR
Saturation not picking up if no IPPV, ↑ to 88% 5' after IPPV started	Calls Paediatric code blue Continues IPPV until paed reg arrives **Prompt if not calling code blue**
Non- invasive BP – upper limb 60/40 if measured	Handover to paediatric reg Reassess ABC Takes over IPPV , continue CPR, consider intubation/ adrenaline (fellow and NICU nurse late to arrive)
Pupils small	hands over to fellow & NICU nurse
Continue bradycardia if no resuscitation **U nurse/NeoFellow to prompt poor perfusion & palor-allow reg to come up with decisions**	Fellow discusses plan of management Consider intubation if not improving (may improve if resuscitated appropriately, or allow to intubate, depends on experience) Communicate with Mother Give Vitamin K CALL NETS/NICU

Scenario finishes after 15 minutes, or after hypertension and seizures have been managed, basic & advanced neonatal life support is given appropriately

Resources:
RWH Clinical Practice Guidelines:
Eclamptic Seizure Guideline
Acute Hypertension in Labour Guideline
2010 ARC guidelines-Basic and advanced Neonatal Life Support