

NeolmPACTS Scenario Title:

Preterm Delivery occurring in either Emergency Department (ED) or Labor and Delivery (L&D)

General Information	
Clinical Diagnosis	Precipitous delivery of a preterm infant at ~26-27 weeks gestation
Patient Details & Setting	Delivery of a preterm infant in a rural hospital L and D setting / ED
Target Learners	Providers who attend deliveries in ED or L&D
Location	L & D unit or ED department
Anticipated Duration	
Scenario Time:	10 minutes
Debriefing Time:	30 minutes

Learning Objectives:
Objective 1: Team will recognize and communicate a preterm infant in distress (Cognitive)
Objective 2: Care for the preterm patient according to the NRP algorithm (Technical)
Objective 3: Identify a team leader and assign roles to team members (Cognitive)
Objective 4: Demonstrate the elements of team dynamics and crisis resource management (Behavioral)

Educational Rationale
Learner will effectively perform neonatal resuscitation on a preterm infant with bradycardia and no respiratory effort
Scenario Synopsis
Delivery room team (either L & D or ED) responds to calls of incoming patient at ~26-27 weeks gestation in active labor. On arrival she is found to be 10 cm dilated and delivery is imminent. Care team must perform basic NRP interventions of a premature infant.

Scenario Setup

Scenario Description		
Location & Setting	Hospital	
	Unit/Room	L and D or ED department
	Debriefing Rm	
Mannequin Set up	Mannequin	26-27 week preterm mannequin (such as Laerdal's Premature Anne)
	Wardrobe	Naked
	Monitor	Available if needed
	Moulage	None
	Access	None
	Other Details	
Embedded Person Roles		Nurse Plant if required
Room Staging		
Medications		None
Equipment for scenario		<ul style="list-style-type: none"> ● Premature mannequin ● Radiant warmer (preferably pre-heated) ● Towels ● Polyethylene bag or wrap (any plastic bag) and a thermal mattress (if available). Thermal mattress needs to be activated about 5 minutes before baby is born and placed under a towel on the radiant warmer ● Neonatal ECG leads and pulse ox ● Hat ● Stethoscope ● Bulb syringe and 10 or 12F suction catheter ● Device to deliver PPV such as a self inflating bag with preterm masks ● Oxygen blender set to 30% oxygen ● Laryngoscope (miller size 00 and 0), size 2.5 ET tubes and stylet ● Co2 detector ● Tape to secure ET tube
Medical Chart Information	EHR	N/A
	Lab Results	N/A
	Imaging	N/A

Learner information to be given prior to start of scenario

A 33 year old pregnant woman (G1) at 26-27 weeks gestation arrives on L and D / ED in active labor. She has had good prenatal care with an uncomplicated pregnancy up until this point. Her membranes are intact. She is 10 cm dilated and delivery is imminent. You have a few minutes to set up the room and prepare for the delivery of a preterm infant at 26-27 weeks gestation.

Pre-Sim Checklist

- Video recording enabled (If applicable)
- Debriefing location identified
- COVID precautions for institution
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Expected Participants

Name & Role:

1. Team leader (pediatric hospitalist / ED provider)
2. Pediatric nurses/nurses
3. Respiratory therapist

Scenario Logistics

Vital Signs & Events:

Event/Trigger: Baseline-Room Set Up

Vital Signs	Patient & Actor Actions	Expected Learner Actions	Triggers to Move to Next State
Transition time:	Mannequin State:		Delivery of infant

HR: BP: Rhythm: Sat: RR:	Actors: Handoff once room is set up: Preterm infant at 26-27 weeks gestation	Room Set up for delivery by RN. Radiant warmer set up and turned on.	
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Vital Signs & Events:			
Event/Trigger: Assessment of Infant			
Vital Signs	Patient & Actor Actions	Expected Learner Actions	Triggers to Move to Next State
Transition time: 30 Sec HR: BP: Not checked Sat: RR: 0	Mannequin State: Limp and apneic Actors:	Assess, place infant in polyethylene bag and apply hat, apply cardiac leads and pulse ox to right wrist. Stimulate, re-position and suction	Initial steps performed, infant with no response
Time to stay at vitals: 30 seconds			

Vital Signs & Events:			
Event/Trigger: Assessment of Infant			
Vital Signs	Patient & Actor Actions	Expected Learner Actions	Triggers to Move to Next State
<p>Transition time: 30 sec- 1 minute</p> <p>HR: 80</p> <p>BP: Not checked</p> <p>Sat: Not picking up</p> <p>RR: 0</p> <p>Time to stay at vitals: 30 seconds</p>	<p>Mannequin State: Limp and apneic, only display HR on monitor when cardiac leads placed</p> <p>Actors:</p>	<p>Participants should provide PPV via Neopuff 20/6, Fio2 to start at about 0.3. Auscultate heart rate</p>	<p>Starting PPV, no response from infant</p>

Vital Signs & Events:			
Event/Trigger: Assessment of Infant			
Vital Signs	Patient & Actor Actions	Expected Learner Actions	Triggers to Move to Next State
<p>Transition time: 1 min-1.5 minute</p> <p>HR: 75</p> <p>BP: Not checked</p> <p>Sat: Not picking up</p> <p>RR: 0</p> <p>Time to stay at vitals: 30 seconds</p>	<p>Mannequin State: Limp and apneic, PPV being provided, poor chest rise</p> <p>Actors:</p>	<p>Participants should go through MRSOPA, (mask adjustment, reposition airway, suction mouth and nose, open mouth, increase PIP from 20-25), oxygen can be increased (to around 40-60%).</p>	<p>MRSOPA performed (apart from alternate airway), FiO2 increased about 20%, improved chest rise</p>

Vital Signs & Events:			
Event/Trigger: Assessment of Infant			
Vital Signs	Patient & Actor Actions	Expected Learner Actions	Triggers to Move to Next State
<p>Transition time: 1.5-3 minutes</p> <p>HR: 80 and rising</p> <p>BP: Not checked</p> <p>Sat: 66% by 2 minutes</p> <p>RR: Irregular, not consistent</p> <p>Time to stay at vitals: 1.5 minutes</p>	<p>Mannequin State: Intermittent irregular breathing</p> <p>Actors:</p>	<p>PPV provided, titrate FiO2 based on target oxygen saturation table, titrating oxygen by 10-20% at a time</p>	<p>Continuing PPV</p>

Vital Signs & Events:			
Event/Trigger: Assessment of Infant			
Vital Signs	Patient & Actor Actions	Expected Learner Actions	Triggers to Move to Next State
<p>Transition time: 3-4 minutes</p> <p>HR: 90</p> <p>BP: Not checked</p> <p>Sat: 70% at 3 minutes</p> <p>RR: Infant with intermittent respiratory effort</p> <p>Time to stay at vitals: 1 minute</p>	<p>Mannequin State: Infant with intermittent respiratory effort, good chest rise with PPV</p> <p>Actors:</p>	<p>Continue PPV, titrate FiO2 based on target oxygen saturation table, titrating oxygen by 10-20% at at time, prepare to intubate</p>	<p>Preparing to Intubate</p>

Vital Signs & Events:			
Event/Trigger: Assessment of Infant			
Vital Signs	Patient & Actor Actions	Expected Learner Actions	Triggers to Move to Next State
<p>Transition time: 4-7 minutes</p> <p>HR: 160</p> <p>BP: Not checked</p> <p>Sat: 85% at 4 minutes</p> <p>RR: Intermittent respiratory effort</p> <p>Time to stay at vitals: 3 minutes</p>	<p>Mannequin State: Good chest rise with PPV, intermittent respiratory effort</p> <p>Actors:</p>	<p>Infant intubated with a size 2.5 ET tube by about 5-6 minutes of age. Equal and bilateral chest rise and breath sounds. CO2 detector with positive color change. ET tube secured in place with tape.</p>	<p>Infant intubated, ET tube secured</p>

Scenario Endpoints
Definitive care and (verbalize need to call to NICU attending at transferring facility)

ImPACTS

IMPROVING PEDIATRIC ACUTE CARE THROUGH SIMULATION

Debriefing Points

Debriefing Points Following Learning Objectives	
Technical	Assembling equipment, performing intubation,
Cognitive	Roles clearly defined, good communication with team, following NRP algorithm, correcting ineffective PPV and not starting chest compressions when HR under 60
Behavioral/Interpersonal	Delegation of roles, clear communication with respect
Other	

Scenario Support Materials, Pre and Post Tests, Evaluations

- Reference List:
- [https://downloads.aap.org/AAP/PDF/NRP%208th%20Edition%20Busy%20People%20Update%20\(1\).pdf](https://downloads.aap.org/AAP/PDF/NRP%208th%20Edition%20Busy%20People%20Update%20(1).pdf)