

## Newborn RDS Drill

### **Fiction Contract**

Good morning everyone. We from St. Johns Hospital and Karnataka Health Promotion Trust (KHPT) have been coming to your facility to support you with your skills in improving care of a low birth weight baby. One aspect of this will include how we as health care personnel respond to emergency newborn situations. One of the goals of the National Health Mission is to reduce neonatal mortality. Tremendous efforts are being made by Government of India to ensure essential newborn care (ENC) is provided at all delivery points in the public health system.

As part of this, we will be conducting "EMERGENCY DRILLS". These drills are exercises that help us find out how prepared we are for a newborn emergency. For example fire drills are often conducted in big buildings to see how everybody responds to such an emergency if it were to occur. Just like this we will be conducting a newborn emergency drill.

There will be 3 people who will conduct the drill. One is the director, second is the observer and third is the actor. I am the director and will provide you details of the case scenario as you respond to the newborn emergency situation created for the purpose. (Please think I am invisible, with only a VOICE). .....is the observer and would stand by the side and would just observe the whole drill. He/ she might also record the whole process of the drill with your permission. We will have Ms.....acting as the mother whose baby is admitted in the SNCU. But we do not have a baby actor.....we will use this baby neonatalie.

We will consider the number of staff who will normally be functioning at a particular time. Only those will act as providers and will be treating the mother (actress) who comes as if it is a real situation. Others will observe what is happening. You consider this neonatalie as the baby and manage the situation as if you will handle a real baby. This neonatalie is like the one we used in skills training workshop (CNE) that we conducted some months ago. It shows:

- Chest rise when the bag and mask ventilation is done correctly.
- Breathing and umbilical cord pulsations on its own (demonstrate and ask them to place their fingers at umbilicus and feel the pulsations). So you can actually assess breathing and heart rate.
- However if there are other assessments you do on the neonatalie, it might not be visible, then I, the director will inform details as and when you indicate you require this information. For example if you are checking to see for the baby crying, then I will tell you or play the recorder for you to hear the cry.
- Similarly you cannot see change in color or activity on the neonatalie. So if you wish to assess color and activity, you should ask and I, the director will then tell the color and activity. If you want the heart rate, you indicate by showing the action to check heart rate (either using a stethoscope or fingers) and I will then call out the heart rate. If you indicate you are checking the temperature then I will give the temperature.

You can **use materials needed** like oxygen tube, IV fluids, IV cannula, etc. Do not worry. We will replace them for you, if required. However DO NOT perform any invasive procedure such as pricking the baby neonatalie, but you can act like you are doing it. For example if you want to insert an IV cannula, open it, palpate the vein, identify the site and act like you are inserting it and then, fix it on the baby as expected. If you want to check the blood sugar then get the glucometer and strips ready, ONLY act like you are pricking the heel DO NOT prick it in real. I will give the GRBS reading. Do I need to clarify anything further on the neonatalie?

It is important that you do activities as you would do in actual situations, including calling other colleagues/doctors for help if needed, filling up case sheets, talking to families etc. Though we are using the neonatalie and an actress, please act as if this situation is very real. We will also make an effort to act as if this is a real situation.

Please remember that you cannot talk to the drill team. The director will talk ONLY when the neonatalie is not able to show you a physical finding (e.g. colour /activity/HR/ GRBS/Temperature). Do not assume any finding, you must show that you are checking for the same, the director will respond with a value (e.g. GRBS is 50mg/dl; colour of the baby is cyanosed etc.). Except the actress and the neonatalie, do not have to bother about any of us.

This whole process will be videotaped by..... .This recording will be viewed by all at the end. During this process it will help each of us identify the procedures that we did correctly and other procedures that need to be improved upon. Very often there is a gap between what we think we did and what we actually did. The recording will help us to understand what actually happened.

Please understand this is NOT a TEST or an EVALUATION. Do not think you are making mistakes and errors. We are not assessing anyone. This exercise will only help us to understand how we respond to newborn emergencies and will help us recognize areas that we can improve upon in the future.

Please relax. When we underwent training on Drills some of us were so tense that we made mistakes too. Remember being anxious is normal, but not to get too tense when you see us or see the person video recording. Please do as you would do routinely in a similar situation.

The drill and debrief will take approximately 45 minutes. This drill will be in the SNCU. We could have TEA now. Please read this if you would like to and if you have any questions please feel free to ask before we start the drill.

After TEA:

*Do you have any questions?* (Wait for a while). Now I will give you the clinical case:

**Case scenario**

***Ms. Lakshmi, a primi delivered by cesarean section at 9:00 am, a female baby at 29 weeks of gestation at Community health Center, due to non progress of labour and premature rupture of membranes – 2 hours prior to onset of labour. The baby cried soon after birth. The baby's weight was 1475 grams. During the initial examination, the nurse noticed sub costal retractions and rapid breathing. You are in the district hospital on duty when the baby arrived.***

**Script for Drill:**

<b>Baby's mother/ LR Staff</b>	<b>Participants(SNCU Staff on duty)</b>	<b>Director</b>
<p>Staff nurse from CHC calls the DH staff about the baby                      "We have sent the baby and mother in 108 ambulance. They should be there in 45 minutes. Baby is on Oxygen and in an incubator"</p> <p><i>This might not be part of a drill</i></p>	<p><b>Preparation:</b> Staff nurse on duty</p> <ul style="list-style-type: none"> <li>√ Cleans the radiant warmer</li> <li>√ Keeps small sheet on the mattress of the radiant warmer</li> <li>√ Switches on the radiant warmer</li> <li>√ Keeps ready and in working condition                             <ul style="list-style-type: none"> <li>- suction catheters (size 5, 6, 8F)</li> <li>- suction machine or mucus trap</li> <li>- oxygen source</li> <li>- oxygen hood or nasal prongs</li> <li>- bag and mask,</li> <li>- ET tube (Size 2-3mm)</li> <li>- laryngoscope with blades 00, 0 and 1 (if available)</li> <li>- pulse oxymeter</li> <li>- micropore</li> <li>- articles for starting IV line (syringe- 1,2,5 ml, ventflon, splint, paediatric burette set or infusion pump, IV fluid 10% dextrose,</li> <li>- stethoscope</li> <li>- glucometer</li> <li>- Medications (Calcium gluconate, epinephrine (1:10000), Phonebarbitone, dopamine, dobutamine, normal saline)</li> </ul> </li> <li>√ Keeps hand scrub near the radiant warmer</li> <li>√ Cleans the weighing machine.</li> <li>√ Informs the paediatrician about the impending admission.</li> </ul>	<p>Mother and baby arrive at the DH in ambulance 108. It is 10.30am</p>

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<p>Baby is transferred to the SNC</p>	<p><b>First nurse calls the pediatrician and informs the status of the baby.</b></p> <p><b>Second nurse does the following while the doctor arrives</b></p> <ul style="list-style-type: none"> <li>√ <b>Washes hands</b></li> <li>√ Receives the baby in a clean cloth from ambulance staff. Simultaneously feels for warmth of feet, hands and abdomen.</li> <li>√ Checks weight of the baby</li> <li>√ Places baby in radiant warmer</li> <li>√ Checks temperature.</li> <li>√ Places a small rolled sheet under the shoulders to help keep airway patent</li> <li>√ Connects pulse oxymeter.</li> <li>√ Give oxygen with oxygen hood (3-5 L/min) or nasal prongs (0.5-2.0 L/min) to achieve appropriate oxygen saturation.</li> <li>√ Assesses respiration, looks for chest in drawing (says aloud) and grunting</li> <li>√ Checks heart rate</li> <li>√ Checks CFT by pressing on sternum using the index finger or thumb for 5 sec. Looks at blanched area for return of color.</li> </ul>	<ul style="list-style-type: none"> <li>√ Temperature 36.5°C</li> <li>√ Oxygen saturation (95%)</li> <li>√ Respiration 80/minute, chest in drawing and grunting</li> <li>√ HR 140/min</li> <li>√ CFT2sec</li> </ul> <p>Baby has not been fed since birth</p>
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<p>Mother tells you baby has not been fed</p>	<p><b>Second nurse finds history</b></p> <ul style="list-style-type: none"> <li>√ Speaks to mother about labour history (duration of labour, rupture of membranes, any other complications, any medications)</li> <li>√ Gets details of gestational age (Thai card or relative)</li> <li>√ Finds out from SN in CHC whether             <ul style="list-style-type: none"> <li>- Antenatal steroid prophylaxis was given.</li> <li>- Inj. Vit K 1mg was given to the baby</li> </ul> </li> </ul> <p><b>Starts an IV line (second nurse)</b></p> <ul style="list-style-type: none"> <li>√ Takes blood for sepsis screening and blood culture (ruptured membranes for two hours), checks GRBS</li> <li>√ Connects IV line</li> <li>√ Starts IV fluid (10% dextrose ) calculates <math>1.475 \times 80 = 117 \text{ml} / 3 = 39 \text{ml}</math> to be given 8 hourly at 4-5microdrops/min (says aloud total requirement and drop rate)</li> <li>√ Insert an orogastric tube. Says aloud will keep nil orally</li> </ul> <p><b>Investigation:</b></p> <ul style="list-style-type: none"> <li>- Chest X-ray</li> </ul> <p><b>Documentation</b></p> <p><b>Records information of all activities done in the case sheet</b></p> <ul style="list-style-type: none"> <li>√ Temperature-36.5°C</li> <li>√ Respiration=70/min</li> <li>√ Oxygen saturation=95%</li> <li>√ CRT=2.5sec</li> <li>√ HR-140/min</li> <li>√ Grunting and retractions +</li> <li>√ GRBS 75mg%</li> <li>√ IV fluids started with 10% Dex</li> <li>√ Oxygen being given</li> <li>√ Blood sent for sepsis screen</li> <li>√ Chest X-ray request sent</li> </ul>	<p>Membranes ruptured 2 hours before labor pain began. Labour pain for more than 15 hours with no progress. ??? How did she deliver? Not sure of any injection being given</p> <p>No antenatal steroid given</p> <p>GRBS 75mg%</p> <p>RDS score- 5???? No indication of checking</p>
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Doctor orders for antibiotics	<ul style="list-style-type: none"><li>√ Nurse loads antibiotics (Inj. Ampicillin 50mg/kg/dose Q12H = 74mg; Inj. Gentamycin 5mg/kg/dose Q24H=7mg).</li><li>√ Doctor begins thorough physical examination.</li></ul>	
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## Checklist and Guide for Debriefing Session

## Drill for Respiratory Distress

## A. How to conduct a debriefing session?

MOMEN		STATEMENTS AND QUESTIONS
<b>Initial environment</b>	Brief moment to explore initial feelings about the drill	<i>“How did you feel during the drill?”</i>
<b>Video watching</b>	Invite participants to watch the video	<i>“There is always a gap between what we Actually did and what we remember we did. How about if we watch the video and see what happened?”</i>
<b>Starting analysis</b>	Initial question	<p><i>“How did you see yourselves in the video?”</i></p> <p><i>Can you identify procedures that you think you did well?</i></p> <p><i>Can you also identify procedures where you think some improvements are required?</i></p> <p>Depending on the answers reinforce positive attitudes. Do debriefing using the checklist step by step</p> <p>Note: If procedures are observed being done incorrectly, check</p>
<b>Analysis by topic</b>	Please see below	
<b>Closure</b>	Take home message	<i>“What is your take home message after this</i>

**B. ANALYSIS BY TOPIC.....PLEASE CHOOSE THE TOPIC THAT THE PARTICIPANTS BRING OUT DURING THE OPENING DISCUSSION.**

- 1. COMMUNICATION AMONG THE TEAM MEMBERS** (Ask the providers to see themselves in a similar situation wherein same level of care was provided. What could have been improved in this scenario?)

TRAINERS' OBSERVATIONS AFTER THE DRILL	YES	NO	EXAMPLES OF KEY QUESTIONS AND CONCLUSIONS
Team members are called by their name if they are given any instruction (Example: Hema, please connect the oxygen)			How did you see yourselves regarding the communication among the team?
Close the communication loop (Example: Hema replies to "Yes, oxygen 1L/min is started through nasal prong".			What would you change of this video regarding the communication among team members if you would change something?
Clarity when giving instructions between team members			<p><b>Possible Conclusion:</b></p> <p>There has been a good communication among the team regarding the information given to the provider that arrived later to the scene. However, as we could see in the video, there were some instructions that were not clear to whom they were given. In this kind of situations that we are not used to, it is important to be very clear when given instructions. Instructions should be directed to a specific person and if a drug is indicated, then the exact dose should be specified aloud. It is very important to close the communication loop in order to check if all the instructions were properly followed.</p>
<b>Other positive actions/Comments</b>			
<b>Other negative actions/Comments</b>			



**2. TEAM WORK: ORGANISATION AND LEADER SHIP**

TRAINERS' OBSERVATIONS AFTER THE DRILL	YES	NO	EXAMPLES OF KEY QUESTIONS AND CONCLUSIONS
Was there good distribution of tasks? (Overlap, someone who has no concrete work to do, etc.)			<input type="checkbox"/> How did you see yourselves in the team organization? <input type="checkbox"/> How did you see the leadership?
Did they work in an organized manner?			
Was any person identified as the SNCU in charge during each shift?  (Explain the importance of having a leader in SNCU)			<p><b>Possible conclusion</b>                      When we run a SNCU with limited resources (man, material, money, time) the leader is the person who organizes and coordinates the actions. This person observes the whole picture from a distance and verifies that all the instructions are being done. This, person is not necessarily a doctor. We use the music band example to show the role of the leader. All the musicians are experts and good in their skills, leader helps them to organize and coordinate the</p>
<b>Other positive actions/Comments</b>			
<b>Other negative actions/Comments</b>			

**3. CALL FOR HELP**

<b>TRAINERS' OBSERVATIONS AFTER THE DRILL</b>	<b>YES</b>	<b>NO</b>	<b>EXAMPLES OF KEY QUESTIONS AND CONCLUSIONS</b>
Did professionals call for help? Example: Doctor, nurse			<ul style="list-style-type: none"> <li>• How did you see yourselves regarding the call for help?</li> </ul> <p><b>Possible Conclusion:</b>                      Can we find a way that can be followed to rapidly call the staff in case of an emergency?</p>
Was the call for help timely?			
<b>Other positive actions/Comments</b>			
<b>Other negative actions/Comments</b>			

## 4. DIAGNOSIS AND TREATMENT

TRAINERS' OBSERVATIONS AFTER THE DRILL	YES	NO	EXAMPLES OF KEY QUESTIONS AND CONCLUSIONS
<b>General Management</b> Appropriate history taking			❓ How did you see yourselves regarding management of RDS?
Initial assessment was done <ul style="list-style-type: none"> <li>• Checking temperature, respiration, retractions, oxygen saturation, HR,</li> </ul>			
Investigation was ordered <ul style="list-style-type: none"> <li>• Chest X-ray</li> <li>• Sepsis screening and blood culture</li> </ul>			
<b>Specific management:-</b> <ul style="list-style-type: none"> <li>• Whether temperature maintained</li> </ul>			❓ Do you'll know the protocol for management of RDS after this emergency
<ul style="list-style-type: none"> <li>• Whether oxygen saturation maintained – position, oxygen administration.</li> </ul>			
<ul style="list-style-type: none"> <li>• Whether IV fluids started</li> </ul>			
<ul style="list-style-type: none"> <li>• Whether blood glucose monitored</li> </ul>			
<ul style="list-style-type: none"> <li>• Given appropriate drug and whether thorough about the dose.</li> </ul>			
<ul style="list-style-type: none"> <li>• Whether screening for sepsis and chest X-ray done</li> </ul>			
<ul style="list-style-type: none"> <li>• Was orogastric tube inserted to empty the stomach?</li> </ul>			

5. RESOURCES

TRAINERS' OBSERVATIONS AFTER THE DRILL	YES	NO	EXAMPLES OF KEY QUESTIONS AND CONCLUSIONS
<p><b>Human resources</b> Whether sufficient staff nurses were present?</p>			
<p><b>Supplies</b> Were all the needed supplies/ articles available? If not what was missing</p>			<p>☐ How do you think these supplies can be arranged if it is not available?</p>
<p><b>Skills</b> Do staffs demonstrate confidence in performing basic skills?</p>			<p><b>Do you have concerns about the following</b></p> <ul style="list-style-type: none"> <li>• Oxygen administration</li> <li>• Assessing respiration, chest retractions, CRT, temperature</li> <li>• RDS score?</li> <li>• Checking oxygen saturation of the newborn using pulse oximeter</li> <li>• Starting IV line.</li> <li>• IV fluid calculation.</li> <li>• Collecting blood samples for screening and culture.</li> <li>• Antibiotic administration</li> <li>• GRBS monitoring</li> <li>• NG tube insertion.</li> </ul>
<p><b>Referral</b> Did the staff follow protocol for referral?</p>			<ul style="list-style-type: none"> <li>• How did you see referral taking place (if it took place in the drill)?</li> <li>• How do referrals occur here? Do you have a referral directory? When do you make a decision to refer? What situations do you refer? Do you follow up on the outcome of the patient?</li> <li>• How could you make referrals more effective? (Referral directory? Networking with 108 staff? Following up with facility or with patient?)</li> </ul>

6. List gaps and solutions identified

S. No	GAPS IDENTIFIED	SOLUTIONS PROPOSED
	<b>Knowledge</b>	
	<b>Skills</b>	
	<b>Communication</b>	
	<b>System-supplies</b>	

We will review these during our next visit to your facility after 1 month.

Thank you for your time.

