

## CLINICAL SCENARIO

# CPAP 1A

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

PURPOSE:  Teaching / Practice  
 Test Result: Pass / Fail / Retest

## Scenario Overview

The scenario is set in the labour ward where a premature baby has just been born. Participants should assess the baby, determine the need for any immediate resuscitation, and commence CPAP.

## Reminder to Facilitator

Facilitator team to decide what is essential for participants' understanding; we suggest facilitator team underline or mark these essential items in the **INFORMATION/RESULT** column before beginning the session to ensure these are highlighted in that section.

**ALWAYS REMEMBER THE CANDIDATE SHOULD START WITH THE 4 Ss**

**Safety** of the staff and patient

**Setting** for the environment and patient

**Stimulate** the patient for response

**Shout** for help

## Begin Scenario

**SETTING THE SCENE:** You are called to the labour ward where a teenage mother has delivered a preterm baby. She does not know the date of her last menstrual period. When you arrive you find a small, very premature looking baby boy under the radiant heater. He was born 20 minutes ago. He has been dried and wrapped in a warm cloth. He appears pink and active. **WHAT DO YOU DO?**

| # | ACTION REQUIRED                                                                                                                                                                                     | INFORMATION / RESULT                                                                                                                                                                                                        | COMMENTS: |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1 | Observe baby                                                                                                                                                                                        | Baby is under the radiant heater and obviously preterm. He is moving normally, and his mouth and nose are clear                                                                                                             |           |
| 2 | The setting is alright as he can be kept warm and observed when stimulated                                                                                                                          | The baby makes normal movements in response to gentle stimulation                                                                                                                                                           |           |
| 3 | Call for help                                                                                                                                                                                       | Help is on the way                                                                                                                                                                                                          |           |
| 4 | Open the airway (neutral position) and Look, Listen and Feel for breathing<br>Suction the mouth and nares                                                                                           | <ul style="list-style-type: none"><li>The airway is clear</li><li>The breathing is regular and 65 b/min</li></ul>                                                                                                           |           |
| 5 | Check for other signs of respiratory distress:<br>Head nodding    Crackles<br>Grunting        Nasal flaring<br>Cyanosis        Respiratory rate<br>Pulse oximetry    Indrawing / acidotic breathing | The baby is pink in colour, has mild indrawing but no other signs of respiratory distress. The chest is clear on auscultation: <ul style="list-style-type: none"><li>RR is 65 b/min</li><li>SpO<sub>2</sub> = 93%</li></ul> |           |
| 6 | Check the circulation                                                                                                                                                                               | The baby's colour is good, his hands are warm, the cord is well tied                                                                                                                                                        |           |
| 7 | Disability                                                                                                                                                                                          | The baby is a little floppy but responsive to stimulation                                                                                                                                                                   |           |
| 8 | Full examination and Ballard score                                                                                                                                                                  | Reveals a healthy premature baby of 31 weeks gestation                                                                                                                                                                      |           |

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| #  | ACTION REQUIRED                                   | INFORMATION / RESULT                                                                                                                                                                                                                          | COMMENTS: |
|----|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 9  | Weight<br>What should you now do?                 | <ul style="list-style-type: none"> <li>The baby weighs 1.2 kg</li> <li>Set up and put the baby on CPAP</li> </ul>                                                                                                                             |           |
| 10 | What equipment do you need to set up CPAP?        | <ul style="list-style-type: none"> <li>CPAP machine</li> <li>Power cable</li> <li>Inspiratory tubing</li> <li>Expiratory tubing</li> <li>CPAP prongs</li> <li>Connectors</li> <li>Oxygen tubing</li> <li>Oxygen source</li> </ul>             |           |
| 11 | Please show me how you fill the collection bottle | Fill to 6 cm depth with clean water                                                                                                                                                                                                           |           |
| 12 | Now attach all the tubing to the CPAP machine     | <ul style="list-style-type: none"> <li>Connect the inspiratory tubing to the Patient Port</li> <li>Connect the expiratory tubing to the Bottle Port</li> <li>Connect the CPAP prongs between the inspiratory and expiratory tubing</li> </ul> |           |
| 13 | Then what do you do?                              | <ul style="list-style-type: none"> <li>Turn on the CPAP device</li> <li>Open the oxygen flow meter</li> <li>Connect the oxygen source to the CPAP with oxygen tubing</li> </ul>                                                               |           |
| 14 | How do you test that the system is working?       | Test for bubbling by pinching closed the nasal prongs                                                                                                                                                                                         |           |

### YOU COULD ASK ANOTHER PARTICIPANT TO TAKE OVER NOW

|    |                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
|----|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 15 | Please prepare the equipment you need to put the baby on CPAP                                               | <ul style="list-style-type: none"> <li>Gloves</li> <li>Tape</li> <li>Suction catheter</li> <li>Syringe - 2 mL</li> <li>Correctly sized CPAP prongs</li> <li>Hat or length of stockinette (if hat is not available)</li> <li>Orogastric (OG) tube size F5</li> </ul>                                                                                                                                                                                                                  |  |
| 16 | Now what do you do?                                                                                         | Insert an orogastric tube                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| 17 | Please show me how you do this                                                                              | <ul style="list-style-type: none"> <li>Measure from the middle of the mouth to the ear and then to the lower end of the sternum</li> <li>Mark this distance with a small amount of tape</li> <li>Gently insert the OG tube in the mouth to this length</li> <li>Tape the OG tube to the chin to keep in place</li> </ul>                                                                                                                                                             |  |
| 18 | What is the correct size of CPAP prong?                                                                     | Prongs should completely fill the patient's nostrils                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| 19 | Now show me what you need to put the baby on CPAP                                                           | <ul style="list-style-type: none"> <li>Appropriately sized CPAP prongs</li> <li>Hat</li> <li>2 mL syringe filled with normal saline</li> <li>Hat clips OR 2 rubber bands &amp; 4 safety pins</li> </ul>                                                                                                                                                                                                                                                                              |  |
| 20 | What comes next?                                                                                            | <ul style="list-style-type: none"> <li>Turn on the CPAP device and connect oxygen source</li> <li>Place hat on patient</li> <li>Set a starting pressure level of 6 cm water, total flow of 6 L/min, and oxygen concentration (FiO<sub>2</sub>) of 50%</li> </ul>                                                                                                                                                                                                                     |  |
| 21 | How do you decide the oxygen flow to choose?<br>Please connect the tubing and check that it is working well | <ul style="list-style-type: none"> <li>By using FiO<sub>2</sub> and total flow as shown on the oxygen blending table printed on top of the CPAP machine</li> <li>Set total flow of 6 L/min. Set oxygen flow on both oxygen source and CPAP oxygen flowmeter</li> <li>Connect correctly sized CPAP prongs to the inspiratory and expiratory tubing</li> <li>Retest the bubbling by pinching the nasal prongs shut</li> <li>The water within the water bottle should bubble</li> </ul> |  |

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| #  | ACTION REQUIRED                                                                                                                                                                                                                                                              | INFORMATION / RESULT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | COMMENTS: |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 22 | Please show me how you insert the prongs and how deep they should be?                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Place a drop of saline within each nostril using the syringe filled with saline</li> <li>Gently insert prongs into the nostrils with the writing on the prongs facing upwards</li> <li>Insert until the line on the nasal prongs is just visible. This will leave 1 mm of space between the prongs and the nasal septum</li> </ul>                                                                                                                                                               |           |
| 23 | Please connect the tubing to the hat                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>Insert two safety pins on each side of the head in the brim of the hat</li> <li>Pins should open away from the baby's face and should go only through the folded brim of the hat; pins should never touch the patient's skin</li> <li>Hold the inspiratory tubing in place between the two safety pins</li> <li>Wrap the rubber bands around the safety pins on either side of the tubing to secure</li> <li>Repeat for the expiratory tubing on the other side of the patient's face</li> </ul> |           |
| 24 | What 2 quick checks should you now do?                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>That the prongs are still within the nose and at the correct distance from the nasal septum</li> <li>That the water in the bottle bubbles</li> </ul>                                                                                                                                                                                                                                                                                                                                             |           |
| 25 | The water does not bubble. Now what should you do?                                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>Check the tubing for leaks or kinks</li> <li>Check prongs are correct size</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                            |           |
| 26 | Well done! The baby is now settled on CPAP and the water is bubbling nicely. When is the next check you will do and what will you check?                                                                                                                                     | <ul style="list-style-type: none"> <li>After 15 minutes</li> <li>Vital signs – RR, HR, O<sub>2</sub> sats, Temperature</li> <li>Work of breathing (indrawing, colour, restlessness, grunting)</li> <li>Nasal blockages</li> <li>Abdominal distension</li> </ul>                                                                                                                                                                                                                                                                         |           |
| 27 | The baby is sleeping, HR 155 bpm, RR 60 b/min, SpO <sub>2</sub> 95%, T = 36.8 °C. There is no indrawing, no grunting, and the baby is pink in colour. The water in the bottle is bubbling nicely and the baby's abdomen is flat.<br><br>When will you review the baby again? | Monitor the patient every 4 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |

### THANK YOU

#### **i** REMIND PARTICIPANTS:

- Premature babies benefit from CPAP as it helps to treat or prevent Respiratory Distress Syndrome (RDS).
- How CPAP works:** CPAP devices use a pump to provide air or a mixture of air and oxygen at a continuous positive pressure. This pressure keeps airway spaces open and increases alveolar recruitment throughout respiration in a spontaneously breathing infant. This improves oxygenation and reduces work of breathing.

#### **!** INFECTION PREVENTION AND CONTROL

Be sure to wash your hands thoroughly and to put on gloves before handling the baby or any equipment. After every use, remember to disinfect all consumables and equipment before using them again.

**Scenario end**

# CPAP 1B

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

PURPOSE:  Teaching / Practice  
 Test Result: Pass / Fail / Retest

## Scenario Overview

The scenario is set in the labour ward where a premature baby has just been born. Participants should assess the baby, determine the need for any immediate resuscitation, and commence CPAP.

### Reminder to Facilitator

Facilitator team to decide what is essential for participants' understanding; we suggest facilitator team underline or mark these essential items in the **INFORMATION/RESULT** column before beginning the session to ensure these are highlighted in that section.

**ALWAYS REMEMBER THE CANDIDATE SHOULD START WITH THE 4 Ss**

**Safety** of the staff and patient

**Setting** for the environment and patient

**Stimulate** the patient for response

**Shout** for help

### Begin Scenario

**SETTING THE SCENE:** The same baby who was put on CPAP 3 hours ago is now doing well. (Note: this scene is continued from the end of scenario 1A.) **WHAT DO YOU DO NEXT?**

| # | ACTION REQUIRED                                                                                                                                                                    | INFORMATION / RESULT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | COMMENTS: |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1 | Observe baby                                                                                                                                                                       | 4 hourly monitoring to include: <ul style="list-style-type: none"> <li>Vital signs – RR, HR, O<sub>2</sub> sats, Temperature</li> <li>Work of breathing (indrawing, colour restlessness, grunting)</li> <li>Nasal blockages</li> <li>Abdominal distension</li> </ul>                                                                                                                                                                                                                                                         |           |
| 2 | What else should you do and check now?                                                                                                                                             | Check prongs, tubing, and hat: <ul style="list-style-type: none"> <li>Check that prongs are not against nasal septum and check for skin compromise</li> <li>Check that tubing is not kinked or misplaced</li> <li>Check that hat is not loose; if it is loose, replace with new hat</li> <li>Put a drop of saline to each nostril</li> </ul> Check water level: <ul style="list-style-type: none"> <li>If water level is below decided treatment level, add water into bottle cap hole using a syringe or OG tube</li> </ul> |           |
| 3 | When you check the baby after about 12 hours on CPAP the SpO <sub>2</sub> = 89%, the RR = 70 b/min, HR = 170 bpm. The baby has more indrawing of the chest.<br><br>What do you do? | <ul style="list-style-type: none"> <li>Check tubing for any kinking or leaks</li> <li>Check prongs are well fitted and properly placed</li> <li>Check water level in bottle is correct and bubbling</li> </ul>                                                                                                                                                                                                                                                                                                               |           |
| 4 | These are all fine. Are there any complications to exclude?                                                                                                                        | Listen to the chest to make sure there is no pneumothorax                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |

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| # | ACTION REQUIRED                                                                                                                                                                                                                | INFORMATION / RESULT                                                                                                                                                                                                                                                        | COMMENTS: |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 5 | Now what do you do?                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>Increase the flow by 0.5 L/min and the pressure by 1 cm of water increments with a review 15 minutes after each adjustment</li> <li>Both total and oxygen flow may need to be adjusted depending on the clinical response</li> </ul> |           |
| 6 | <p>After making 2 increases in flow and pressure (flow is now 7 L/min and pressure is 8 cm, the baby settles and vital signs return to normal. The SpO<sub>2</sub> = 93%).</p> <p>How long will you keep the baby on CPAP?</p> | 12 hours                                                                                                                                                                                                                                                                    |           |
| 7 | <p>All the vital signs at every 4 hourly monitoring have been normal for 12 hours</p> <p>Now what do you do?</p>                                                                                                               | Reduce the O <sub>2</sub> flow by 0.5 L/min but maintain the pressure and review after 15 minutes                                                                                                                                                                           |           |

#### INSTRUCTIONS FOR FACILITATOR:

Look at TRY algorithm together and ask participant to explain it to you.

#### DIRECTIONS FOR CANDIDATE :

Please show me on the TRY algorithm wall chart what you are doing.

|   |                                                                                                                   |                                                                                                                                                                                                                                                                |  |
|---|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 8 | <p>Now pressure is down to 5 cm and flow is 0.5 L/min</p> <p>Please show me how you remove the baby from CPAP</p> | <ul style="list-style-type: none"> <li>Gently pull the prongs out of the nose and remove the hat, prongs, and inspiratory and expiratory tubing</li> <li>Turn off CPAP and dispose of water within pressure regulating water bottle</li> </ul>                 |  |
| 9 | What do you clean and how?                                                                                        | <ul style="list-style-type: none"> <li>Follow protocols for cleaning tubing, if reusing, prongs, and inspiratory and expiratory tubing</li> <li>Using a cotton swab or gauze soaked in 70% alcohol, disinfect the oxygen flowmeter regulator valves</li> </ul> |  |

#### THANK YOU

#### INFECTION PREVENTION AND CONTROL

Be sure to wash your hands thoroughly and to put on gloves before handling the baby or any equipment. After every use, remember to disinfect all consumables and equipment before using them again.

**Scenario end**

## CLINICAL SCENARIO

# CPAP 2

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

PURPOSE:  Teaching / Practice  
 Test Result: Pass / Fail / Retest

## Scenario Overview

A 2 day old, 2 kg baby has fast breathing. The participant should assess the baby, give oxygen, and when this is inadequate, commence CPAP. The baby needs to be monitored and the device should be checked before weaning from CPAP and the equipment is cleaned.

## Reminder to Facilitator

Facilitator team to decide what is essential for participants' understanding; we suggest facilitator team underline or mark these essential items in the **INFORMATION/RESULT** column before beginning the session to ensure these are highlighted in that section.

**ALWAYS REMEMBER THE CANDIDATE SHOULD START WITH THE 4 Ss**

**Safety** of the staff and patient

**Setting** for the environment and patient

**Stimulate** the patient for response

**Shout** for help

## Begin Scenario

**SETTING THE SCENE:** A 2 kg baby aged 2 days is in the nursery and mother is worried because the baby is breathing fast and is rather listless **WHAT DO YOU DO?**

| # | ACTION REQUIRED                                                                                                                                                                                                                       | INFORMATION / RESULT                                                                                                                                                                                                                                                                         | COMMENTS: |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1 | Observe baby                                                                                                                                                                                                                          | Baby looks small in size, is lethargic and not very active                                                                                                                                                                                                                                   |           |
| 2 | Place baby under a radiant heater (setting) where they can be kept warm and observe responsiveness (stimulate)                                                                                                                        | The baby makes some movements in response to gentle stimulation                                                                                                                                                                                                                              |           |
| 3 | Call for help                                                                                                                                                                                                                         | Help is on the way                                                                                                                                                                                                                                                                           |           |
| 4 | Open the airway (neutral position) and Look, Listen, and Feel for breathing<br><br>Suction the mouth and nose                                                                                                                         | <ul style="list-style-type: none"><li>The mouth and nose are full of watery secretions</li><li>The baby is breathing fast</li></ul>                                                                                                                                                          |           |
| 5 | Check for other signs of respiratory distress:<br><br>Head nodding    Crackles<br>Grunting        Nasal flaring<br>Cyanosis        Respiratory rate<br>Pulse oximetry    Indrawing / acidotic breathing<br><br>What will you do next? | The baby has marked chest indrawing and its colour is grey. It is difficult to make out breath sounds but there may be some fine crepitations: <ul style="list-style-type: none"><li>RR is 75 b/min</li><li>SpO<sub>2</sub> = 87%</li></ul> Put baby on oxygen 1 L/min while setting up CPAP |           |
| 6 | The baby does not improve, and you decide to put the baby on CPAP<br><br>What equipment do you need to set up CPAP?                                                                                                                   | <ul style="list-style-type: none"><li>CPAP machine</li><li>Power cable</li><li>Inspiratory tubing</li><li>Expiratory tubing</li><li>CPAP prongs</li><li>Connectors</li><li>Oxygen tubing</li><li>Oxygen source</li></ul>                                                                     |           |
| 7 | Please show me how you fill the collection bottle                                                                                                                                                                                     | Fill to 6 cm depth with clean water                                                                                                                                                                                                                                                          |           |

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| #  | ACTION REQUIRED                               | INFORMATION / RESULT                                                                                                                                                                                                                          | COMMENTS: |
|----|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 8  | Now attach all the tubing to the CPAP machine | <ul style="list-style-type: none"> <li>Connect the inspiratory tubing to the Patient Port</li> <li>Connect the expiratory tubing to the Bottle Port</li> <li>Connect the CPAP prongs between the inspiratory and expiratory tubing</li> </ul> |           |
| 9  | Then what do you do?                          | <ul style="list-style-type: none"> <li>Turn on the CPAP device</li> <li>Open the oxygen flow meter</li> <li>Connect the oxygen source to the CPAP with oxygen tubing</li> </ul>                                                               |           |
| 10 | How do you test that the system is working?   | Test for bubbling by pinching closed the nasal prongs                                                                                                                                                                                         |           |

### YOU COULD ASK ANOTHER PARTICIPANT TO TAKE OVER NOW

|    |                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
|----|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 11 | Please prepare the equipment you need to put the baby on CPAP                                               | <ul style="list-style-type: none"> <li>Gloves</li> <li>Tape</li> <li>Suction catheter</li> <li>Syringe - 2 mL</li> <li>Correctly sized CPAP prongs</li> <li>Hat or length of stockinette (if hat is not available)</li> <li>Orogastric (OG) tube size F5</li> </ul>                                                                                                                                                                                                                  |  |
| 12 | Now what do you do?                                                                                         | Insert an orogastric tube                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| 13 | Please show me how you do this                                                                              | <ul style="list-style-type: none"> <li>Measure from the middle of the mouth to the ear and then to the lower end of the sternum</li> <li>Mark this distance with a small amount of tape</li> <li>Gently insert the OG tube in the mouth to this length</li> <li>Tape the OG tube to the chin to keep in place</li> </ul>                                                                                                                                                             |  |
| 14 | What is the correct size of CPAP prong?                                                                     | Prongs should completely fill the patient's nostrils                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| 15 | Now show me what you need to put the baby on CPAP                                                           | <ul style="list-style-type: none"> <li>Appropriately sized CPAP prongs</li> <li>Hat</li> <li>2 mL syringe filled with normal saline</li> <li>Hat clips OR 2 rubber bands &amp; 4 safety pins</li> </ul>                                                                                                                                                                                                                                                                              |  |
| 16 | What comes next?                                                                                            | <ul style="list-style-type: none"> <li>Turn on the CPAP device and connect oxygen source</li> <li>Place hat on patient</li> <li>Set a starting pressure level of 6 cm water, total flow of 6 L/min, and oxygen concentration (FiO<sub>2</sub>) of 50%</li> </ul>                                                                                                                                                                                                                     |  |
| 17 | How do you decide the oxygen flow to choose?<br>Please connect the tubing and check that it is working well | <ul style="list-style-type: none"> <li>By using FiO<sub>2</sub> and total flow as shown on the oxygen blending table printed on top of the CPAP machine</li> <li>Set total flow of 6 L/min. Set oxygen flow on both oxygen source and CPAP oxygen flowmeter</li> <li>Connect correctly sized CPAP prongs to the inspiratory and expiratory tubing</li> <li>Retest the bubbling by pinching the nasal prongs shut</li> <li>The water within the water bottle should bubble</li> </ul> |  |
| 18 | Please show me how you insert the prongs and how deep they should be                                        | <ul style="list-style-type: none"> <li>Place a drop of saline within each nostril using the syringe filled with saline</li> <li>Gently insert prongs into the nostrils with the writing on the prongs facing upwards</li> <li>Insert until the line on the nasal prongs is just visible. This will leave 1 mm of space between the prongs and the nasal septum</li> </ul>                                                                                                            |  |

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| #  | ACTION REQUIRED                                                                                                                                                                                                            | INFORMATION / RESULT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | COMMENTS: |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 19 | Please connect the tubing to the hat                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>Insert two safety pins on each side of the head in the brim of the hat</li> <li>Pins should open away from the baby's face and should go only through the folded brim of the hat; pins should never touch the patient's skin</li> <li>Hold the inspiratory tubing in place between the two safety pins</li> <li>Wrap the rubber bands around the safety pins on either side of the tubing to secure</li> <li>Repeat for the expiratory tubing on the other side of the patient's face</li> </ul> |           |
| 20 | What 2 quick checks should you do now?                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>That the prongs are still within the nose and at the correct distance from the nasal septum</li> <li>That the water in the bottle bubbles</li> </ul>                                                                                                                                                                                                                                                                                                                                             |           |
| 21 | The water does not bubble. Now what should you do?                                                                                                                                                                         | <ul style="list-style-type: none"> <li>Check the tubing for leaks or kinks</li> <li>Check prongs are correct size</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                            |           |
| 22 | Well done! The baby is now settled on CPAP and the water is bubbling nicely. When is the next check you will do and what will you check?                                                                                   | <ul style="list-style-type: none"> <li>After 15 minutes</li> <li>Vital signs – RR, HR, O<sub>2</sub> sats, Temperature</li> <li>Work of breathing (indrawing, colour, restlessness, grunting)</li> <li>Nasal blockages</li> <li>Abdominal distension</li> </ul>                                                                                                                                                                                                                                                                         |           |
| 23 | The baby is restless, HR 185 b/min, RR 80 b/min, SpO <sub>2</sub> 89%, T = 38.7°C. There is indrawing and grunting and the baby remains grey in colour. The baby's abdomen is flat.<br><br>What do you do?                 | <ul style="list-style-type: none"> <li>Check that the water in the bottle is bubbling and at the correct height</li> <li>Check that no tubing is kinked, and the nostrils are not blocked</li> </ul>                                                                                                                                                                                                                                                                                                                                    |           |
| 24 | These are all fine. Are there any complications to exclude?                                                                                                                                                                | Listen to the chest to make sure there is no pneumothorax                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |
| 25 | Now what do you do?                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Increase the flow by 0.5 L/min and the pressure by 1 cm of water increments with a review 15 minutes after each adjustment</li> <li>Both total and oxygen flow may need to be adjusted depending on the clinical response</li> </ul>                                                                                                                                                                                                                                                             |           |
| 26 | After making 2 increases in flow and pressure (flow is now 6.5 L/min and pressure is 7 cm, the baby settles and vital signs return to normal. The SpO <sub>2</sub> = 93%).<br><br>How long will you keep the baby on CPAP? | 12 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |
| 27 | How often will you monitor this baby?<br><br>What will you check?                                                                                                                                                          | <p>4 hourly monitoring to include:</p> <ul style="list-style-type: none"> <li>Vital signs – RR, HR, O<sub>2</sub> sats, Temperature</li> <li>Work of breathing (indrawing, colour, restlessness, grunting)</li> <li>Nasal blockages</li> <li>Abdominal distension</li> </ul>                                                                                                                                                                                                                                                            |           |

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| #  | ACTION REQUIRED                        | INFORMATION / RESULT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | COMMENTS: |
|----|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 28 | What else should you do and check now? | Check prongs, tubing, and hat: <ul style="list-style-type: none"> <li>• Check that prongs are not against nasal septum and check for skin compromise</li> <li>• Check that tubing is not kinked or misplaced</li> <li>• Check that hat is not loose; if it is loose, replace with new hat</li> <li>• Put a drop of saline to each nostril</li> </ul> Check water level: <ul style="list-style-type: none"> <li>• If water level is below decided treatment level, add water into bottle cap hole using a syringe or OG tube</li> </ul> |           |

**THE BABY WHO WAS PUT ON CPAP 24 HRS AGO IS DOING WELL.  
HOW DO YOU DECIDE WHAT TO DO NEXT?**

|    |                                                                                                           |                                                                                                   |  |
|----|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|
| 29 | All the vital signs at every 4 hourly monitoring have been normal for 24 hours<br><br>Now what do you do? | Reduce the O <sub>2</sub> flow by 0.5 L/min but maintain the pressure and review after 15 minutes |  |
|----|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|

**INSTRUCTIONS FOR FACILITATOR:**

Look at TRY algorithm together and ask participant to explain it to you

**DIRECTIONS FOR CANDIDATE :**

Please show me on the TRY algorithm wall chart what you are doing

|    |                                                                                                            |                                                                                                                                                                                                                                                                    |  |
|----|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 30 | Now pressure is down to 5 cm and flow is 0.5 L/min<br><br>Please show me how you remove the baby from CPAP | <ul style="list-style-type: none"> <li>• Gently pull the prongs out of the nose and remove the hat, prongs, and inspiratory and expiratory tubing</li> <li>• Turn off CPAP and dispose of water within pressure regulating water bottle</li> </ul>                 |  |
| 31 | What do you clean and how?                                                                                 | <ul style="list-style-type: none"> <li>• Follow protocols for cleaning tubing, if reusing, prongs, and inspiratory and expiratory tubing</li> <li>• Using a cotton swab or gauze soaked in 70% alcohol, disinfect the oxygen flowmeter regulator valves</li> </ul> |  |

**THANK YOU**

**i REMIND PARTICIPANTS:**

- Premature babies benefit from CPAP as it helps to treat or prevent Respiratory Distress Syndrome (RDS).
- **How CPAP works:** CPAP devices use a pump to provide air or a mixture of air and oxygen at a continuous positive pressure. This pressure keeps airway spaces open and increases alveolar recruitment throughout respiration in a spontaneously breathing infant. This improves oxygenation and reduces work of breathing.

**! INFECTION PREVENTION AND CONTROL**

Be sure to wash your hands thoroughly and to put on gloves before handling the baby or any equipment. After every use, remember to disinfect all consumables and equipment before using them again.

**Scenario end**

# Disclaimer

Newborn Essential Solutions and Technologies–Education Clinical Scenarios: CPAP

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