FACILITY BASED CARE OF SICK NEONATE AT REFERRAL HEALTH FACILITY

FACILITATOR GUIDE
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Skill based Training for SCNU Staff (Doctors and Nurses)  
At District Hospital  
**PROGRAM**

**Day 1**

1. **Inauguration & Welcome**  
   Objectives of the workshop and Introduction  
   Of the participants  
   *9.00 – 10.00 am*

2. **Tea**  
   *10.00 – 10.30 am*

3. **Neonatal Resuscitation**  
   *(Interactive sessions with Demonstration on manikin)*  
   - Pretest  
     *10.30 - 10.50 am*  
   - Initial Steps  
     *10.50 – 11.35 am*  
   - Bag & Mask: Equipment & ventilation  
     *11.35 – 12.20 pm*  
   - Chest Compression  
     *12.20 – 12.40 pm*  
   - Endotracheal Intubation  
     *12.40 – 1.20 pm*  
   - Medications  
     *1.20 – 1.40 pm*

4. **LUNCH**  
   *1.40 – 2.25 pm*  
   - Work Stations *(SKILL STATIONS – Hands on)*  
     *2.25 – 4.00 pm*

5. **Post Test**  
   *4.00 – 4.15 pm*

**SELF READING CLASS ROOM SESSIONS**

6. **Communication**  
   With one Role play  
   *4.15 – 4.45 pm*

7. **Emergency Triaging & Management**  
   *4.45 – 5.30 pm*
Day 2

Welcome & Plan of the Day

SELF READING SESSIONS (Class Room)

1. Hypothermia and Thermal control 9.00 – 10.30 am
   With a 13 minute Video on KMC

2. Care at and after birth 10.30 – 11.00 am
   With a Role play

3. Tea 11.00 – 11.30 am

4. Breastfeeding 11.30 – 1.00 pm
   With 1 drill, 1 role play, 8 minute Video and 4 Posters

5. Care of Low birth weight neonate 1.00 – 2.00 pm
   With 1 drill and 4 minute Video

6. LUNCH 2.00 – 2.45 pm

7. Skill Stations (Hospital) 2.45 – 5.45 pm
   (45 minutes each)
   • Thermal Control
   • Breastfeeding / Assisted Feeding
   • Prevention of Infection
   • IV access, Umbilical cannulation, CRT evaluation
Day 3

Welcome and Plan of the Day

SELF READING SESSIONS (Class Room)

1. I/V fluids & management of Hypoglycemia 9.00 – 10.30 am
   Management of shock
   With one drill on Fluid therapy

2. Tea 10.30 – 11.00 am

3. Post asphyxia Management 11.00 -12.00 am

4. Neonatal seizures 12.00 – 12.30 pm
   With one 3 minute video

5. Respiratory distress in Newborn 12.30 – 2.00 pm
   With one Video on respiratory signs

6. LUNCH 2.00 – 2.45 pm

7. Neonatal jaundice 2.45 – 3.30 pm
   One Poster and three drills

8. Equipment Demonstration 3.30 – 5.30 pm
   (Hospital Visit – 30 mins each)
   - Radiant warmer, Weighing scale
   - Phototherapy unit, Suction machine
   - Oxygen concentrators, O2 Source & O2 Delivery systems
   - Pulse oximeter, Infusion pump & Burette sets
Day 4

Welcome and Plan of the Day

**SELF READING SESSIONS (Class Room)**

1. Neonatal sepsis 9.00 - 11.00 am  
   (With one 12 minute Video, 2 Drills and 1 poster)
2. Bleeding neonate 11.00 – 11.30 am
3. Anemia 11.30 – 12.00 noon
4. Neonatal transport 12.30 – 1.30 pm
5. LUNCH 1.30 – 2.15 pm
6. Checklist for Newborn care & NB Case sheet 2.15 – 2.45 pm
7. Case studies 2.45 – 3.45 pm
8. **Hospital Visit** 3.45 - 5.15 pm  
   Clinical Case presentation & discussion 3.45 – 5.15 pm
9. Valedictory 5.15 pm onwards
1. INTRODUCTION TO THIS FACILITATOR GUIDE

1.1 How does this course differ from other training courses?

- The material in the course is not presented by lecture. Instead, each participant is given an instructional booklet, called module for training of health workers, which has the basic information to be learned.
- Information is also provided through demonstrations, and videotapes.
- The module is designed to help each participant develop specific skills necessary for case management of sick neonates in SNCUs.
- After practicing skills in the module and at the skill stations participants are given a demonstration of the same in real clinical setting.
- Since the participants are a mix of physicians and nurses and do not have same level of knowledge/qualification, due care is taken by the facilitator so that each of the participant comprehends the course material and is equally involved in every activity of the workshop.

1.2 Role and responsibilities of a Facilitator

What is a FACILITATOR?

A facilitator is a person who helps the participants to learn the skills presented in the course. The facilitator spends much of his time in discussions with participants, either individually or in small groups. For facilitators to give enough attention to each participant, a ratio of one facilitator to 8 to 10 participants is desired. In your assignment to teach this course, YOU are a facilitator.

As a facilitator, you need to be very familiar with the material being taught. It is your job to give explanations, do demonstrations, answer questions, talk with participants about their answers to exercises, conduct role plays, lead group discussions, organize clinical demonstrations in hospitals and generally give participants any help they need to successfully complete the course. You are not expected to teach the content of the course through formal lectures. (Nor is this a good idea, even if this is the teaching method to which you are most accustomed.)

What, then, DOES a FACILITATOR do?

As a facilitator, you do 3 basic things:

1. You INSTRUCT:

- Make sure that each participant understands how to work through the materials and what he is expected to do in each module and each exercise.
- Lead group activities, such as group discussions, oral drills, video exercises, and drills, to ensure that learning objectives are met.
- Promptly assess each participant's work and give correct answers.
- Discuss with the participant how he obtained his answers in order to identify any weaknesses in the participant's skills or understanding.
- Help the participant to understand how to use skills taught in the course in his own care of the neonate in SNCU
- Model good clinical skills, including communication skills, during clinical demonstration sessions.
2. **You MOTIVATE:**

- Compliment the participant on his correct answers, improvements or progress.

- Make sure that there are no major obstacles to learning (such as too much noise or not enough light).

3. **You DO:**

- Planning ahead and obtain all supplies needed each day, so that they are in the discussion room or taken to the hospital when needed.
- Make sure that movements from discussion room to hospital wards and back are efficient.
- Monitor the progress of each participant.
- Conduct a pre-test and post-test assessment of the participants.
- Send a formal feedback of the workshop to the secretary of NNF.

**How do you do these things?**

- Show enthusiasm for the topics covered in the course and for the work that the participants are doing.
- Be attentive to each participant's questions and needs.
- Watch the participants as they work, and offer individual help if you see a participant looking troubled, staring into space, not writing answers, or not turning pages. These are clues that the participant may need help.
- Promote a friendly, cooperative relationship. Respond positively to questions (by saying, for example, "Yes, I see what you mean," or "That is a good question."). Listen to the questions and try to address the participant's concerns, rather than rapidly giving the "correct" answer.
- Always take enough time with each participant to answer his questions completely (that is, so that both you and the participant are satisfied)
- If there is disparity between the conventional practices and the course guidelines then the facilitator should provide evidence based explanations. At the same time he should be receptive to the opinions of the participants.
- However in situations of disparities where no sufficient evidence is available to favor one practice over the other, facilitator should define the width of acceptable practices.

**What NOT to do.....**

- During times scheduled for course activities, do not work on other projects or discuss matters not related to the course.
- In discussions with participants, avoid using facial expressions or making comments that could cause participants to feel embarrassed
- Do not call on participants one by one as in a traditional classroom, with an awkward silence when a participant does not know the answer. Instead, ask questions during individual feedback.
- Do not lecture about the information that participants are about to read. Give only the introductory explanations that are suggested in the *Facilitator Guide*. If you give too much information too early, it may confuse participants. Let them read it for themselves in the modules.
- Do not review text paragraph by paragraph. (This is boring and suggests that participants cannot read for themselves.) As necessary, review the highlights of the text during individual feedback or group discussions.
- Avoid being too much of a showman. Enthusiasm (and keeping the participants awake) is great, but learning is most important. Keep watching to ensure that participants do understand the material. Difficult points may require you to slow down and work carefully with individuals.
• Do not be condescending. In other words, do not treat participants as if they are children. They are adults.
• Do not talk too much. Encourage the participants to talk.
• Do not be shy, nervous, or worried about what to say. This Facilitator Guide will help you remember what to say. Just use it!

How can this FACILITATOR GUIDE help you?

This Facilitator Guide will help you teach the course module, including the video segments and assist you with clinical, skill and equipment sessions. This Facilitator Guide includes the following:

• A list of the procedures to complete the module, highlighting the type of feedback to be given after each exercise
• Guidelines for the procedures. These guidelines describe:
  - How to do demonstrations, drills, and group discussions,
  - How to conduct the skill stations, the clinical session and the equipment sessions
  - Supplies needed for these activities,
  - How to conduct the video exercises,
  - How to conduct oral drills,
  - Points to make in group discussions or individual feedback.

• Answer sheets (or possible answers) for most exercises
• A place to write down points to make in addition to those listed in the guidelines

To prepare yourself for the module, you should:

• Read the module and work the exercises
• Read in this Facilitator Guide all the information provided about the module
• Plan exactly how to work on the module and what are the major points to be made
• Collect any necessary supplies for exercises in the module, and prepare for any demonstrations or drills
• Think about sections that participants might find difficult and questions they may ask
• Plan ways to help with difficult sections and answer possible questions
• Think about the skills taught in the module and how they can be applied in participants practice
• Ask participants questions that will encourage them to think about using the skills in their practice. Questions are suggested in appropriate places in the Facilitator Guide.
1.3 Checklist of Instructional Materials needed

<table>
<thead>
<tr>
<th>Room</th>
<th>Two rooms in total. With 1 room big enough (&gt;350 sq ft) to accommodate 25 - 30 people and other one big enough to accommodate 12-14 (&gt;200 sq ft) people at a time.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD &amp; Lap top</td>
<td>Two sets</td>
</tr>
<tr>
<td>Set of training module</td>
<td>25-30 sets (1 set for each facilitator and 1 set for each participants)</td>
</tr>
<tr>
<td>Name tag and holder</td>
<td>30</td>
</tr>
<tr>
<td>Note pad</td>
<td>30</td>
</tr>
<tr>
<td>Ball pen and markers</td>
<td>30</td>
</tr>
<tr>
<td>folder or bag</td>
<td>30</td>
</tr>
<tr>
<td>Manikins</td>
<td>03</td>
</tr>
<tr>
<td>Intubation head</td>
<td>01</td>
</tr>
<tr>
<td>Self inflating bag &amp; mask</td>
<td>02</td>
</tr>
<tr>
<td>Linen</td>
<td>4 baby sheets</td>
</tr>
<tr>
<td>Suction catheter</td>
<td>01 of each size 6,8,10,12 &amp; 14 Fr</td>
</tr>
<tr>
<td>Oxygen tubing</td>
<td>01</td>
</tr>
<tr>
<td>Delee’s trap,</td>
<td>02</td>
</tr>
<tr>
<td>Laryngoscope</td>
<td>01</td>
</tr>
<tr>
<td>Endotracheal tubes</td>
<td>Any size- 2.5 to 4.0</td>
</tr>
<tr>
<td>Large size doll for role play</td>
<td>2</td>
</tr>
<tr>
<td>Facilitator Guides</td>
<td>4</td>
</tr>
<tr>
<td>White- boards with white-board markers</td>
<td>2 each</td>
</tr>
<tr>
<td>Neonatal resuscitation Pre test &amp; Post Test</td>
<td>60 copies</td>
</tr>
<tr>
<td>FBNC Pre test &amp; Post test</td>
<td>60 copies</td>
</tr>
</tbody>
</table>

1.4 Checklist of Supplies needed for Classroom Sessions

<table>
<thead>
<tr>
<th>Supplies needed for each person include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Name tag and holder</td>
</tr>
<tr>
<td>* Notepad</td>
</tr>
<tr>
<td>* Ball point pen</td>
</tr>
<tr>
<td>* Highlighter</td>
</tr>
<tr>
<td>Supplies needed for each group include:</td>
</tr>
<tr>
<td>-----------------------------------------</td>
</tr>
<tr>
<td>* Manikin</td>
</tr>
<tr>
<td>* Self inflating Bag &amp; Mask</td>
</tr>
<tr>
<td>* Linen (Baby sheets)</td>
</tr>
<tr>
<td>* Suction catheter</td>
</tr>
<tr>
<td>* Oxygen tubing</td>
</tr>
<tr>
<td>* De lee’s trap,</td>
</tr>
<tr>
<td>* Laryngoscope</td>
</tr>
<tr>
<td>* Endotracheal tube (any size 2.5 to 4.0)</td>
</tr>
<tr>
<td>* Large size doll for role play</td>
</tr>
<tr>
<td>* White board &amp; white board markers</td>
</tr>
<tr>
<td>* Laptop with LCD projector &amp; screen</td>
</tr>
</tbody>
</table>
In addition, certain exercises require special supplies such as manekin or a baby doll (or rolled towel to hold like a baby). These supplies are listed in the guidelines for each activity. Be sure to review the guidelines and collect the supplies needed before these activities.

1.5 Facilitation Techniques

**A. Techniques for Motivating Participants**

Names; It is a good habit to address the participants by their names. Facilitator should try to memorize the names of the participants.

**Encourage Interaction**

1. During the course of the workshop talk individually with each participant several times (for example, during individual feedback). Being friendly and helpful during these initial interactions, helps the participants to (a) overcome their shyness; (b) realize that the facilitator wants to talk with them; and (c) interact with the facilitator more openly and productively throughout the course.

2. Evaluate each participant's work carefully. Check to see if participants are having any problems, even if they do not ask for help. Showing interest and giving each participant undivided attention helps the participants feel more compelled to do the work. Also, if the participants know that someone is interested in what they are doing, they are more likely to ask for help when they need it.

3. Make sure to be available to the participants at all times.

**Keep Participants Involved in Discussions**

4. Frequently ask questions to the participants to check their understanding and to keep them actively thinking and participating. Questions that begin with "what," "why," or "how" require more than just a few words to answer. Avoid questions that can be answered with a simple "yes" or "no." After asking a question, PAUSE. Give participants time to think and volunteer a response. A common mistake is to ask a question and then answer it yourself. If no one answers your question, rephrasing it can help to break the tension of silence. But do not do this repeatedly. Some silence is productive.

5. Acknowledge all participants' responses with a comment, a "thank you" or a definite nod. This will make the participants feel valued and encourage participation. If you think a participant has missed the point, ask for clarification, or ask if another participant has a suggestion. If a participant feels his comment is ridiculed or ignored, he may withdraw from the discussion entirely or not speak voluntarily again.

6. Answer participants' questions willingly, and encourage participants to ask questions when they have them rather than to hold the questions until a later time.

7. Do not feel compelled to answer every question yourself. Depending on the situation, you may turn the question back to the participant or invite other participants to respond. You may need to discuss the question your co-facilitator before answering. Be prepared to say "I don't know but I'll try to find out."

8. Use names when you call on participants to speak, and when you give them credit or thanks. Use the speaker's name when you refer back to a previous comment.

9. Always maintain eye contact with the participants so everyone feels included. Be careful not to always look at the same participant. Looking at a participant for a few seconds will often prompt a reply, even from a shy participant.
Keep the Session Focused and Lively

10. Keep your presentations lively:
   • Present information conversationally rather than read it.
   • Speak clearly. Vary the pitch and speed of your voice.
   • Use examples from your own experience, and ask participants for examples from their experience.

11. Write key ideas on a white-board as they are offered. (This is a good way to acknowledge responses. The speaker will know his suggestion has been heard and will appreciate having it recorded for the entire group to see.)

   While recording ideas on a white-board, use the participant's own words if possible. If you must be briefer, paraphrase the idea and check it with the participant before writing it. You want to be sure the participant feels you understood and recorded his idea accurately. **Do not turn your back to the group for long periods as you write.**

12. At the beginning of a discussion, write the main question on the white-board. This will help participants stay on the subject. When needed, walk to the white-board and point to the question. Paraphrase and summarize frequently to keep participants focused. Ask participants for clarification of statements as needed. Also, encourage other participants to ask a speaker to repeat or clarify his statement.

   Restate the original question to the group to get them focused on the main issue again. If you feel someone will resist getting back on track, first pause to get the group's attention, tell them they have gone astray, and then restate the original question.

   Do not let several participants talk at once. When this occurs, stop the talkers and assign an order for speaking. (For example, say "Let's hear Madhu's comment first, then Satish's, then Kamlal's.") People usually will not interrupt if they know they will have a turn to talk.

   Thank participants whose comments are brief and to the point.

13. Try to encourage quieter participants to talk. Ask to hear from a participant in the group who has not spoken before, or walk toward someone to focus attention on him and make him feel he is being asked to talk.

Manage any Problems

14. Some participants may talk too much. Here are some suggestions on how to handle an overly talkative participant:
   • Do not call on this person first after asking a question

   • After a participant has gone on for some time say, "You have had an opportunity to express your views. Let's hear what some of the other participants have to say on this point." Then rephrase the question and invite other participants to respond, or call on someone else immediately by saying, "Champa, you had your hand up a few minutes ago."

   • When the participant pauses, break in quickly and ask to hear from another member of the group or ask a question of the group, such as, "What do the rest of you think about this point?"

   • Record the participant's main idea on the white-board. As he continues to talk about the idea, point to it on the flipchart and say, "Thank you, we have already covered your suggestion." Then ask the group for another idea.
15. Try to identify participants who have difficulty understanding or speaking the course language. Speak slowly and distinctly so you can be more easily understood and encourage the participant in his efforts to communicate.

Discuss with the Course Director any language problems which seriously impair the ability of a participant to understand the written material or the discussions. It may be possible to arrange help for the participant.

Discuss disruptive participants with your co-facilitator or with the Course Director. (The Course Director may be able to discuss matters privately with the disruptive individual.)

**Reinforce Participants' Efforts**

16. As a facilitator, you will have your own style of interacting with participants. However, a few techniques for reinforcing participants' efforts include:

- Avoiding use of facial expressions or comments that could cause participants to feel embarrassed,
- Sitting or bending down to be on the same level as the participant when talking to him
- Answering questions thoughtfully, rather than hurriedly,
- Encouraging participants to speak to you by allowing them time,
- Appearing interested, saying "That's a good question/suggestion."

17. Reinforce participants who:

- Try hard
- Ask for an explanation of a confusing point
- Do a good job on an exercise
- Participate in group discussions
- Help other participants (without distracting them by talking at length about irrelevant matters).

**B. Techniques for Relating information given in the Modules to Participants' Jobs**

1. Discuss the use of the case management guidelines in the SCNU. The guidelines for giving feedback on certain exercises suggest specific questions to ask. (For example, in **ETAT**, ask when the participant will categorize a neonate as an “Emergency case”; ask how will they rewarm a baby whose temperature is 32°C? and another baby whose temperature is 35°C? and so on) Be sure to ask these questions and listen to the participant's answers. This will help participants begin to think about how to apply what they are learning.

2. Reinforce participants who discuss or ask questions about using the case management procedures by acknowledging and responding to their concerns.

**C. Techniques for facilitating learning from the module**

**When Participants are working:**

1. Look available, interested and ready to help.
2. Watch the participants as they work, and offer individual help if you see a participant looking troubled, staring into space or not turning pages. These are clues that the participant may need help.

3. Encourage participants to ask you questions whenever they would like some help.

4. If important issues or questions arise when you are talking with an individual, make note of them to discuss later with the entire group.

5. If a question arises, which you feel you cannot answer adequately, obtain assistance as soon as possible from your co-facilitator or the Course Director.

6. Review the points in this Facilitator Guide so you will be prepared to discuss the next exercise with the participants.

    **When Providing Individual Feedback:**

7. Before giving individual feedback, refer to the appropriate notes in this guide to remind yourself of the major points to make.

8. Compare the participant's answers to the answer sheet provided. If the answer sheet is labeled "Possible Answers", the participant's answers do not need to match exactly, but should be reasonable. If “exact answers” are provided, be sure the participant's answers match.

9. If the participant's answer to any exercise is incorrect or is unreasonable, ask questions to the participant to determine why the error was made. There may be many reasons for an incorrect answer. For example, a participant may not understand the question, may not understand certain terms used in the exercise, may use different procedures at his clinic, may have overlooked some information about a case, or may not understand a basic process being taught.

10. Once you have identified the reason(s) for the incorrect answer to the exercise, help the participant correct the problem. For example, you may only need to clarify the instructions. On the other hand, if the participant has difficulty understanding the process itself, you might try using a specific case example to make him understand. After the participant understands the process that was difficult, ask him to work the exercise or part of the exercise again.

11. Always reinforce the participant for good work by (for example):

   - Commenting on his understanding,
   - Showing enthusiasm for ideas for application of the skill in his work,
   - Telling the participant that you enjoy discussing exercises with him,
   - Letting the participant know that his hard work is appreciated.

    **When Leading a Group Discussion:**

12. Plan to conduct the group discussion at a time when you are sure that all participants will have completed the preceding work. Wait to announce this time until most participants are ready, so that others will not hurry.
13. Before beginning the discussion, refer to the appropriate notes in this guide to remind yourself of the purpose of the discussion and the major points to make.

14. Always begin the group discussion by telling the participants the purpose of the discussion.

15. Often there is no single correct answer that needs to be agreed on in a discussion. Just be sure the conclusions of the group are reasonable and that all participants understand how the conclusions were reached.

16. Try to get most of the group members involved in the discussion. Record key ideas on a white-board as they are offered. Keep your participation to a minimum, but ask questions to keep the discussion active and on track.

17. Reinforce the participants for their good work by (for example):

- Praising them for the list they compiled,
- Commenting on their understanding of the exercise,
- Commenting on their creative or useful suggestions for using the skills on the job,
- Praising them for their ability to work together as a group.

**When Coordinating a Drill:**

18. Before the drill, refer to the appropriate notes in this guide to remind yourself of the purpose of the role play, roles to be assigned, background information, and major points to make in the group discussion afterwards.

19. As participants come to you for instructions before the drill,

- Assign roles. At first, select individuals who are outgoing rather than shy, perhaps by asking for volunteers. If necessary, a facilitator may be a model for the group by acting in a drill.
- Give drill participants any props needed, for example a baby doll.
- Give drill participants any background information needed. (There is usually some information for the "mother" which can be photocopied or clipped from this guide.)
- Suggest that drill participants speak loudly.
- Allow preparation time for drill to the participants. (eg Tea break or lunch hour)

20. When everyone is ready, arrange seating/placement of individuals involved. Have the "mother" and "doctor" stands or sit apart from the rest of the group, where everyone can see them.

21. Begin by introducing the players in their roles and stating the purpose or situation. For example, you may need to describe the age of the child, assessment results, and any treatment already given.

22. Interrupt if the players are having tremendous difficulty or have strayed from the purpose of the role play.

23. When the drill is finished, thank the players. Ensure that feedback offered by the rest of the group is supportive. First discuss things done well. Then discuss things that could be improved.

24. Try to get all group members involved in discussion after the drill. In many cases, there are questions given in the module to help structure the discussion.

25. Ask participants to summarize what they learned from the drill.
**Day 1**

1. **Inauguration & Welcome….**
   
   Objectives of the workshop and Introduction of the participants

   Objectives of the workshop

   1. Orient participants to the need for newborn care in community and facility
   2. Inform participants about the Facility Based Newborn Care initiative
   3. Educate and prepare the participants for care of newborns in labor room, SCNU and in postnatal wards.
   4. To train all participants the knowledge and skills of neonatal resuscitation
   5. To empower participants for inpatient neonatal care in terms of management of small and sick neonates.
   6. To obtain feedback from the audience with regard to workshop and the problems faced in the day to day care of newborns

2. **Tea**

3. **Neonatal Resuscitation**

   This is a session where interactive participatory learning methodology with skill demonstration on the manikins is undertaken to impart knowledge and skills related to Neonatal resuscitation. You are required to take the session on this day as per the pre planned division of sessions amongst the facilitators.

   The steps to follow will be:

   1. Run the pretest which is available in the training material. It has 40 questions and needs to be completed in twenty minutes. Collect the pretest papers.
   2. One faculty member starts with the overview and physiology of resuscitation.
   3. The other 3 facilitators should start checking the answer sheets.
   4. During the session if the facilitator conducting the session requires any supplies for demonstration, one of the facilitators should help out.
   5. One by one session should be conducted till Medications using manikins for demonstration and allowing ample interactions and discussion.

**Pretest**

*10.30 - 1.40 pm*

**Initial Steps**

*10.30 - 1.40 pm*

**Bag & Mask: Equipment & ventilation**

*10.30 - 1.40 pm*

**Chest Compression**

*10.30 - 1.40 pm*
Endotracheal Intubation       12.40 - 1.20 pm
Medications       1.20 - 1.40 pm

4. LUNCH       1.40 - 2.25 pm

Work Stations (SKILL STATIONS – Hands on)       2.25 - 4.00 pm
Post Test       4.00 - 4.15 pm

6. After lunch the group is divided into 4 batches which rotate through 4 skill stations which should preferably be arranged in 4 different rooms.

7. Each station is managed by one faculty member.

8. First station is on Initial steps.

9. Supplies required for each station have to be collected by the respective facilitator responsible for that station during the lunch time.

10. Second station is on Bag & Mask ventilation.

11. Third station is on chest compression.

12. Fourth station is on endotracheal intubation.

13. Each participant batch rotates through each of the stations. At one station they spend 25-30 minutes and it should be ensured that each participant is able to PRACTICE the skill after demonstration by the facilitator.

14. The first 3 of these stations should have a complete mannequin and the fourth one should have a dummy head for intubation practice.

Station One – Participants practice Initial steps

Station two- Participants practice bag and mask ventilation

Station three – participants practice chest compressions with bag and mask ventilation

Station four – participants practice intubation and discuss use of medications.

15. At the end of the four skill stations, participants reassemble in the classroom and an open house is done for 20 minutes to clarify any queries. This should then be followed by post test for 20 minutes.

16. Collect the answer sheets and evaluate them in the evening after the day’s schedule is over.

17. Prepare the cumulative percentile scores of pretest and posttest and compare them. Discuss with the group. Demonstrate to them the progress from the pretest to the posttest. Compliment them. Take care not to disclose individual score of pretest and posttest of any participant.
ASSESSMENT

Pretest / Post-test

NEONATAL RESUSCITATION

Time 20 minutes

Name: ________________________ Date: ________________

Q.1 If a baby does not begin breathing in response to stimulation, you should assume he is in __________ apnea and you should provide ____________________________.

Q.2 At birth, a baby’s strong breathing causes ______________ to be absorbed from the lungs and replaced with __________.

Q.3 When deciding which babies with meconium stained amniotic fluid need tracheal suctioning, the term "vigorous" is defined by what three characteristics.

__________________________________
__________________________________
__________________________________

Q.4 Which of the following are recommended ways of providing tactile stimulations in an attempt to initiate respirations?

__________________________________ A. Squeeze the rib cage
__________________________________ B. Slapping or flicking the soles of feet
__________________________________ C. Rubbing the back
__________________________________ D. Force things onto abdomen
__________________________________ E. Apply a cold compress

Q.5 List in order, the three signs on which an infant's condition is primarily evaluated.

__________________________________
__________________________________
__________________________________

Q.6 List the two indications for positive pressure ventilation.

__________________________________
__________________________________
Q.7 Mention the five points of initial assessment which must be performed on all newborns.
__________________________________
__________________________________
__________________________________
__________________________________

Q.8 When a suction catheter is used to clear the oropharynx of meconium before inserting an endotracheal tube, the appropriate size is ________ F to ________ F.

Q.9 If you need to give oxygen for longer than a few minutes, the oxygen should be ____________ and ____________.

Q.10 Free flow oxygen can be delivered reliably only with a _________________ bag.

Q.11 When selecting a face mask, make sure that the rim covers the tip of the _______________ and the _______________, but does not cover the eyes.

Q.12 What is the purpose of using an oxygen reservoir with a self inflating bag?
__________________________________

Q.13 State the rate at which a neonate should ventilated using bag valve mask device.
___________________ per minute.

Q.14 What is the maximum permissible suction pressure while suctioning the airway?
_______________________________

Q.15 When using bag and mask in neonatal resuscitation what should be the maximum volume of the bag.
_______________________________

Q.16 You must hold the resuscitation bag so that you can see the newborn's ___________ and ______________.

Q.17 At what pressure should the safety pop off valve give way in bag and mask ventilation.
_______________________________

Q.18 After placing the mask in position and ventilating, you do not observe any appropriate rise of the chest. What could be the three reasons?
__________________________________
__________________________________

Q.19 The correct depth of chest compression is approximately ________________ of the anterior-posterior diameter of the chest.

Q.20 The ratio of compression to ventilation is _______ to ________.

Q.21 Chest compression should be performed in a neonate at the rate of ______ per minute.
Q.22 At what heart rate should chest compressions be discontinued?
_____________ per minute.

Q.23 Chest compressions should be accompanied by ________________.

Q.24 The following is the 6 second count of H.R. obtained on an infant. What is the Heart Rate per minute.

<table>
<thead>
<tr>
<th>6 Second H.R.</th>
<th>H.R. per minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

Q.25 Indicate the correct ET tube size for infants with the following weights.

<table>
<thead>
<tr>
<th>Weight</th>
<th>Tube size</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 gm</td>
<td></td>
</tr>
<tr>
<td>3400 gm</td>
<td></td>
</tr>
<tr>
<td>1200 gm</td>
<td></td>
</tr>
<tr>
<td>2500 gm</td>
<td></td>
</tr>
</tbody>
</table>

Q.26 If the baby is pale, there is evidence of blood loss, and resuscitation is not resulting in improvement, you should consider giving __________ ml/kg of __________ by ________________.

Q.27 Tick mark the drugs which are of no use for neonatal resuscitation.

Sodium bicarbonate _____________________________
Atropine _____________________________
Nikethamide _____________________________
Dexamethasone _____________________________

Q.28 Ninety seconds into resuscitation, the baby's heart rate is less than 60 beats per minute. You should how give ________________ by the most quickly accessible route while continuing chest compressions and ________________.

Q.29 During endotracheal intubation what is the maximum permissible time for successfully carrying out endotracheal intubation.
______________.

Q.30 For a baby weighing 2 kg what will be the depth of insertion of the endotracheal tube from the tip of the upper lip.
______________.
Q.31 If you have not completed endotracheal intubation in the prescribed time limit, what should you do?
__________________________.

Q. 32 The blade of a laryngoscope for preterm newborns should be No. _________. The blade for term newborns should be _________.

Q. 33 Both right and left handed people should hold the laryngoscope in their ________ hand.

Q. 34 During Positive Pressure Ventilation with chest compressions, the rate of “events” per minute should be ________ “events” per minute.

Q.35 You should suspect a congenital diaphragmatic hernia if the abdomen is _________. Such babies should not be resuscitated with ____________.

Q.36 A history of maternal narcotic administration with the past 4 hours would require the administration of ________ to the newborn.

Q.37 What concentration of epinephrine is recommended for neonatal resuscitation?
__________________________.

Q. 38 Babies who do not have spontaneous respirations and whose mothers have been given narcotics should first receive _______________________ and then may be given _________.

Q. 39 Choanal Atresia can be ruled out by what procedure?
______________________.

Q. 40 If a meconium stained baby has been resuscitated and then develops acute deterioration, a ___________________ should be suspected.
5. Communication Skills

Facilitator discusses good Communication skills using a Role play on Referral.

The script is given to the mother and the doctor.

SCRIPT: A 3 weeks baby with fever and seizures along with lethargy is brought to the FRU and the doctor after assessing decides to refer the baby as he is suspecting Meningitis.

Mother : A timid and concerned but determined mother who is unwilling to go to the higher centre at SCNU. Her elder child (3yrs) is alone at home and is running fever. Mother in law is old and unable to cope up with daily chores. Husband is away for work and she does not have money as well as has never travelled alone out of the village.

Conduct Demonstration Role Play to stress the Basic Steps of Communication when Counseling the Mother.

Objective

The objective of the role play is to learn the different steps of communication which include the following:

- **Asking** the mother important questions and listening to her response.
- **Identifying** what she is doing right and where she is making mistakes
- **Praising** her when appropriate
- **Advising** the mother using simple language and giving relevant advice
- **Solving** her problems
- **Check mothers understanding** by asking selected questions

Actions:

1. Introduce the role play script.
2. Call a participant to become the mother and give her the slip which describes mother’s role.
3. Choose one participant to serve as the doctor
4. Make the two comfortably seated in front, facing the group
5. Ask all other participants to quietly observe the role play as they will be asked their responses once the role play is over.
6. Ask the participants doing the role play to do it as realistically as possible.
7. The facilitator too watches the role play and does not interrupt till the role play is over unless it has to be interrupted for non adherence of script or tangential direction of the play.
8. At the end of the role play, thank the two participants.
9. The facilitator now stands next to the white board and begins asking for responses from each of the participants as regards what was done well in the role play and what could have been better.
10. The facilitator records the responses of the participants who were observers, in two broad columns namely what was done well and what could have been improved.
11. Instructs participants to begin with positive aspects and not the negative ones.
12. After recording each of the responses, the facilitator discusses the participant’s responses and introduces the ALPAC objective. Now, he asks the participants to reassesses the responses in light of whether ALPAC was followed or not.
13. Facilitator discusses the importance of ALPAC.

14. Winds up by asking the opinion of the rest of the group whether this mother is convinced about referral and will this referral materialize or no.

If time permits discuss ETAT today or take it to the subsequent day.

SELF READING CLASS ROOM SESSIONS
Day 2

The group is divided into two halves, taking care that there is uniform division as regards the pediatricians, physicians and the nurses. From now on the classroom sessions are conducted in two groups with two facilitators in each group. Conduct the FBNC pretest, collect papers and evaluate later.

Session 1. – 9:00- 10:30

❖ This session is conducted in 2 groups.
❖ All the activities of this session have been mocked and so have been pre-timed. So the facilitators are requested to strictly adhere to the prescribed time limit lest they should miss upon sessions at end of the day or stretch the day which is uncomfortable both the participants and the facilitators.

Hypothermia and thermal control

1. Introduce the topic.

2. Make one participant read out the Learning Objectives and then instruct them to read the initial 2 pages on their own. 10 min.

3. Reading session 1. .................................................................10 min.
   a. Reading of
      i. Mechanism of heat loss
      ii. Warm chain
      iii. Assessment of temperature and grading of hypothermia

4. Group Discussion 1. .............................................................15min.

5. Reading session 2. ...............................................................10min.
   a. Reading of
      i. Prevention and Management of hypothermia
      ii. Fever

6. Group discussion 2. .............................................................15min.
   a. Demonstrate using a doll or Manikin, how to dry wrap baby, including head covering, in the labor room.
   b. Emphasis on KMC after delivery, postnatal wards and in neonatal transport.

7. Discussion the evaluation questions given at end of the chapter..........10 min.

8. Show 13 min. video on Kangroo Mother care and conduct discussion.................................20min.

9. Make one participant read Learning objectives and ask the group whether the objectives were met or not.
Care at and after birth

Facilitator has following objectives to achieve by end of this session.

1. The participant should be made conversant with the basic needs of a newborn after birth.
2. The participant learns to identify at risk neonates
3. The participant becomes conversant with the post natal care of normal babies
4. Further he should learn about minor physical peculiarities and problems

1. Reading session 1.................................................................20min.
   a. Reading of
      i. Care at birth
      ii. Identification of ‘At Risk neonates’ needing hospitalization in SCNU :
      iii. Postnatal Care

2. Group Discussion1………………………………………………………15min.
   a. Facilitator should avoid spending much time on the Hypothermia and breastfeeding as one has been dealt with in detail and the other will be dealt in detail else where.
   b. Immunization to be done before discharge of the newborn should be discussed. However detailed discussion on immunization should be avoided due to time constrains.

3. Reading session 2.................................................................20min.
   a. Reading of
      i. Developmental variations & Physiological conditions

4. Group discussion 2.................................................................15min.
   a. In discussion with regard to normal development variations if desired by facilitator both reading and discussion can be done together.

5. Discuss the evaluation questions given at end of the chapter………10min.

6. Make one participant read Learning objectives and ask the group whether the objectives were met or not.

Breast Feeding

Facilitator has following objectives to achieve by end of this session.

The participant after completing this module should be able to:-

1. Enumerate advantages of breast feeding.
2. Understand and help mother(s) with the correct technique of breastfeeding
3. Understand the physiology of lactation
4. Identify factors enhancing lactation
5. Describe difficulties associated with breast feeding and their solutions
6. Learn skills related to expression of breast milk
7. Reading session 1...... ..........................................................15 min.
   a. Reading of
      i. Advantages of Breast feeding
      ii. Anatomy physiology
8. Group Discussion1 (and posters)..............................................10 min.
9. Reading session 2……………………………………………………………5 min.
a. Reading of
   i. Breast feeding technique

10. Group discussion 2 and drill .......................................................10 min.
a. Facilitator with a help of a doll or dummy and a volunteer facilitator demonstrates the correct positioning for proper attachment of baby during breastfeeding.
   At this stage facilitator identifies 2 probable participants who will enact the role play and informs them privately so that they are mentally prepared by end of 3rd reading session.

11. Reading session 3…………………………………………………………10 min.
a. Reading of
   i. Problems in breastfeeding
   ii. Breast milk expression

12. Group discussion 3 and Role play (refer to the guide below )…………..20 min.
13. 8 min Video session and discussion .............................................. 15 min.
14. Evaluation ...................................................... 5 min.

ROLE PLAY GUIDE

   a. The role of mother can be played by one participant. Facilitator should ensure that the decorum during the role play is appropriately maintained.
   b. One of the role players becomes the Doctor and other the mother

Conduct Demonstration Role Play to stress the Basic Steps of Communication when Counseling the Mother.

Objective
The objective of the role play is to learn the different steps of communication which include the following:

- Asking the mother important questions and listening to her response.
- Identifying what she is doing right and where she is making mistakes
- Praising her when appropriate
- Advising the mother using simple language and giving relevant advice
- Solving her problems
- Check mothers understanding by asking selected questions

Description for the mother
This is a scripted role play about Manu, a 25 day old baby who is being breast-fed but whose mother feels that the breast milk is not enough. She is giving some water and tea to Manu since she feels that the baby should get used to foods and fluids other than breast milk.

Description for the Health Worker
The facilitator should inform the role of the Health Worker to the group
It is necessary to read the script carefully and, as much as possible, learn of it before the role play.

**Use a baby doll as a prop.**

**Actions:**
1. Introduce the role play script.
2. Call a participant to become the mother and give her the slip which describes mother’s role.
3. Choose one participant to serve as the doctor
4. Make the two comfortably seated in front, facing the group
5. Ask all other participants to quietly observe the role play as they will be asked their responses once the role play is over.
6. Ask the participants doing the role play to do it as realistically as possible.
7. The facilitator too watches the role play and does not interrupt till the role play is over unless it has to be interrupted for non adherence of script or tangential direction of the play.
8. At the end of the role play, thank the two participants.
9. The facilitator now stands next to the white board and begins asking for responses from each of the participants as regards
   a) The feeding problems identified by the role play participants and
   b) What was done well in the role play and what could have been better.
10. The facilitator records the responses of the participants who were observers, in two parts first being the feeding problems and second regarding what was done well and what could have been improved.
11. Instructs participants to begin with positive aspects and not the negative ones.
12. After recording each of the responses, the facilitator discusses the participant’s responses and introduces the ALPAC objective. Now, he asks the participants to reassesses the responses in light of whether ALPAC was followed or not.
13. Facilitator discusses the importance of ALPAC.

**Feeding problems, which should be summarized in this role play, are:**
- low frequency of breast feeding;
- water and tea given to the baby; and,
- the baby not getting breast-feed when the mother goes out to work.

**Summarize the role play**

Emphasize at this stage that participants need not worry about the technical aspects of counseling but they should be convinced that talking to mothers is important and they should become familiar with the steps of communication.

While summarizing the role play, stress that it is important to **ask** the mother questions, **and listen** to her response, **praise** her for what she is doing right, then **advise** her on important aspects. She may have some **problems** which **must be solved**, and finally, it is necessary to **ask** some **checking questions** to be sure that she has understood and is willing to follow the advice.

**SCRIPT FOR DEMONSTRATION ROLE PLAY**

Health Worker: I will like to know about Manu’s feeding. What do you feed Manu?

*Ask, listen*

Mother: I give him breast-feeds about **4-5 times** per day.
Praise
Health Worker: It is very nice that you are breast-feeding Manu. Breastfeeding is the best food for the baby at this age. However,

Advise
Babies at this age should be given breast-feeds at least 8 times in the day and night.

Ask, listen
Why are you not breast-feeding Manu more often?
Mother: I would like to feed him more often but I am working outside the home for about 6-7 hours per day and my breast milk does not seem to be sufficient.

Advise Health Worker: One reason why breast milk is not enough is that the baby does not get the breast-feed at frequent intervals, that is whenever the baby wants it. If you feed the baby at more frequent intervals (whenever the baby wants to feed), your milk supply will be better.

Ask, listen
Is it possible for you to take Manu with you so that you are able to feed the baby whenever he is hungry?
Mother: I think it is a good idea to take Manu along to work. I will try to follow your suggestions, and see if I can breast-feed him more often.

Praise
Health Worker: I am very happy that you will be able to take Manu along to work.

Ask, listen
Do you give anything else to Manu besides breast milk?
Mother: Yes, Manu is given some water and some tea in between breast feeds. This way Manu is not hungry.

Advise
Health Worker: Giving other things at this age spoils all the protection that breast-feeds provide. If you give other things, then the supply of breast milk becomes less. Therefore, you should not give water or tea or any other food. I suggest that as soon as you are able to feed Manu breast milk more often, you can stop tea and water.
Ask.

So, how many times will you breast-feed Manu?

Mother: I will give him breast-feeds at least 8 times during the day and night.

Praise

Health Worker: That is very good.

Advise

You should breast-feed Manu during the day as well as at night.

Ask, listen

How often will you put Manu to breast?

Mother: I will feed him whenever he appears hungry at least 8 times during the day and night.

Praise

Health Worker: That is very good. I request you to come back if you find any difficulty in breast-feeding Manu.
Low Birth Weight

Facilitator has following objectives to achieve by end of this session.

The participant after completing this module should be able to:-

1) Define LBW.
2) Should be able to differentiate between a preterm and term LBW.
3) Enumerate problems of LBW.
4) Chart fluid and feed requirements for a LBW.

Reading session 1………………………………………………………10 min.

Reading of
i. Types of LBW
ii. How to recognize preterm and sga infants
iii. Problems of preterm and Sga neonates
iv. Delivery management of LBW
v. Keeping LBW warm

Group Discussion 1………………………………………………………10min.

Ensure that each participant records atleast one reading in the IUGR charts.

Reading session 2………………………………………………………10 min.

Reading of
vi. Nutrition and fluids

Group discussion 2 and …………………………………………………….10min.

a. Stress importance of EBM over any other feeds
b. Facilitator takes the participants through different case scenarios stressing the role of aggressive enteral feeding in LBW.
c. Stress importance of early introduction of gavage feeds in LBW babies and discourage routine pre-feed aspirates.
d. Reinforce the use of abdominal girth over pre-feeds.

2. Discussion the evaluation questions given at end of the chapter…….10min.

3. 4 min. video…………………………………………………………….….5min.
Day 2 post lunch

SKILL STATIONS

I. TEMPERATURE RECORDING & THERMAL CONTROL

OBJECTIVE: Upon completion of this session each participant

i. Develops habit of washing and drying hands before proceeding for any procedure.
ii. Should be able to record axillary temperature in a newborn
iii. Should be able to clinically assess hypothermia, cold stress and normal temperature.
iv. Should be well versed with ways to achieve thermal control during domiciliary care, institutional care & transport.

RATIONALE: Temperature recording is a simple bedside tool to assess the baby’s temperature and ascertain the degree of hypothermia

EQUIPMENT & OTHER REQUIREMENTS:

i) Soap and water
ii) Autoclaved newspaper for hand drying
iii) Low reading/Normal thermometer
iv) A mankin/newborn
v) Cotton Swabs
vi) Cotton sheet
vii) A wrist watch
viii) Mother or other caregiver to demonstrate kangaroo care

SKILLS:

i) Drying
ii) Wrapping & covering the baby
iii) Recording temperature
iv) Tactile assessment of temperature (Cold stress assessment)
v) Kangaroo care

(Procedure only should be part of participant module)

Facilitator should make the following observations when the participants demonstrate these skills.

1. Drying – Demonstrate drying from head to toe
2. Wrapping and covering the baby – Demonstrate wrapping a baby and ask participants to practice it.
   a. Place baby in the centre of a square sheet with his head pointing to one corner/angle of the square.
   b. Fold a part of this corner and place baby’s head well inside on this folded corner.
c. Wrap this folded corner around his head in the form of a cap.

d. Bring the corner to the right of baby, across and over the baby’s torso and going over to the other side and tucking his left arm.

e. Now bring the lower corner over the baby’s lower limbs and torso and tuck it beneath his chin.

f. Finally get the left corner over the left side of the baby across his torso and tuck it over the right arm.

3. Record temperature

   i) Ensures that the thermometer is zeroed by jerking the mercury down (not applicable if digital thermometer is used.)
   ii) Places the baby supine or on the side
   iii) Ensures dry arm pit.
   iv) Places the bulb of the thermometer pointing towards the apex of the axilla
   v) Holds arm in adduction at shoulder & flexion at the elbow for three minutes.

4. Tactile assessment

   i) Touches the baby’s soles & palms with the dorsum of the hands
   ii) Now touch the baby’s chest.
   iii) Interprets as follows:
       a. Cold stress – if periphery cold and chest warm
       b. Hypothermic baby – if both are cold

5) Kangaroo Care

   1. Makes the environment socially acceptable to the mother or care giver for providing Kangaroo Care.
   2. Ensures skin to skin contact b/w baby & care taker
   3. Ties a belt or string at the belt level to prevent the baby from slipping down
   4. Encourages frequent breast feeding.

II. BREAST FEEDING/ASSISTED FEEDING:

OBJECTIVE : Upon completion of this session each participant

   i) Should be able to advise mother on manual expression of breast milk.
   ii) Should be able to provide gavage feeds to the baby
   iii) Should be able to provide katori spoon feeding to the baby
   iv) Should be able to advise mother regarding therapy for retracted nipples.
   v) Should be able to allay all fears & anxiety of a lactating mother regarding adequacy & superiority of breast milk.

RATIONALE: Advantages of breast milk are many fold and this mode of feeding is ideal for all neonates.
EQUIPMENT & OTHER REQUIREMENTS:

i) Lactating mother
ii) Katori/cup
iii) Spoon/paladay
iv) 6 fr & 8 fr feeding tubes
v) 10 ml 7 5 ml syringes
vi) Adhesive tape
vii) Manikin
viii) Blade

SKILLS:

i) Manual Expression of breast milk
ii) Gavage feeding
iii) Katori spoon feeding
iv) Treatment for retracted nipples

Before going to demonstrate specific skills with regard to breast feeding, facilitator should highlight and pre-tune the participants on the following points:

A. Stress that good communication goes a long way in better management of cases as mothers come out with the problems only when they open up.
B. Highlight that both verbal and non verbal communication skills need to be practiced for better proficiency.
C. Ask participants to contribute a point as to how should one behave while talking with mothers and make a list for use during the clinical practice and role-plays.
D. Brief about Listening and Learning skills

➢ VERBAL SKILLS
   • Ask open questions
   • Use responses and gestures which show interest
   • Reflect back what the mother says
   • Empathize: show that you understand how she feels
   • Avoids words which sound judging

➢ NON-VERBAL SKILLS
   • Pay attention
   • Keep your head level
   • Remove barriers
   • Take time
   • Touch appropriately
Further, facilitator should make the following observations when the participants demonstrate these skills

1. **Manual expression of Breast Milk**
   i) Makes the environment socially acceptable to the mother &/or care giver
   ii) Makes a comfortable sitting position for the mother with support for the breast over a bowl
   iii) Demonstrates correct positioning of the thumb and the forefinger around areola
   iv) Demonstrates correctly about technique of milking the breast (ensures that mother understands how milking differs from squeezing breast or merely pinching/pulling on nipples)

2. **Gavage feeding**
   **Tube insertion:**
   i) Based on the weight and gestation of the baby selects a 6 fr or 8 fr feeding tube
   ii) Measures and Marks length of the tube to be inserted.
   iii) Inserts the tube from mouth
   iv) Checks position using a syringe & a stethoscope to auscultate the gush of air
   v) Tapes the tube & close outer end after removing the syringe

   **Gavage Feeding:**
   i) Checks the abdominal girth and compares with the previous reading.
   ii) If no increase or increase upto 2 cm, gives feed.
   iii) If increase more than 2 cm, checks residue and analyses the amount and content of the residue
   iv) If milky and amount >50% - Omit feed for 24 hrs
   v) If milky and amount 30-50% - continue feed and no further increment for next 24 hrs
   vi) If milky and amount < 30% - continue feed.
   vii) If altered colour/ hemorrhagic - Omit feed for 48 hrs
   viii) Continue to evaluate abdominal girth prefeed if feeding, 4 hrly if feeds stopped
   ix) While instilling the feed-uses a 10 ml syringe barrel without the plunger and allows the feed to trickle under gravity and doesn’t push the feed
   x) Checks abd girth at next feeding session & proceed to feed
   xi) Indwelling feeding tube should be changed q 24 hrly.

3. **Katori spoon feeding**
   i) Takes baby in the lap, holds the baby semi upright with head well supported.
   ii) Stimulates the angle of the mouth and rests the spoon with 1-2 ml milk at the angle of the mouth
   iii) Watches for swallowing as the milk is poured slowly
   iv) Strokes gently behind the ear or on the sole.
   v) Burps the baby.
   vi) Places baby in left lateral position with head supported a little higher than the rest of the body.

4. **Treatment of Retracted nipples**
   i) Counsels mother and explains how to use a cut 10 ml syringe to pull out the retracted nipples as described in text in Chapter 4, breastfeeding.
III. INFECTION PREVENTION

OBJECTIVE: Upon completion of this session each participant

i) Should be able to demonstrate steps of hand washing
ii) Should be able to wear gloves with an aseptic technique before any invasive procedure
iii) Should be aware about the choice of disinfectants for different equipments
iv) Should be able to provide routine eyes & cord care and be able to advise mother regarding maternal & baby hygiene.

RATIONALE: Prevention of infection in newborns is easily achievable by simple measure like hand-washing and keeping baby’s environment clean. Prevention is much more rewarding as therapy for neonatal sepsis is not always successful.

EQUIPMENT & OTHER REQUIREMENTS:

i) Soap
ii) Running water
iii) Hand washing chart
iv) Disposable delivery kit
v) Cord tie
vi) Cord stump
vii) Spirit
viii) Sterile Cotton
ix) Sterile blade
x) Manikin
xi) Disinfectant solution
xii) Newborn care equipments
   - Bag & mask
   - Laryngoscope
   - Thermometer
   - Oxygen hood
   - Skin probe
   - Cots/mattresses
   - Sheet
   - Suction machine

SKILLS: i) Hand Washing
ii) Equipment disinfection
iii) Eye & cord care

PROCEDURES:

Facilitator should make the following observations when the participants demonstrate these skills

1. Hand washing
   i. Check Rubbing sequence, first palms & fingers → Back of hand → Thumbs and finally rubs finger tips in the palms & lastly wrists
ii. Keeps elbows dependent & wash in the same order.

2. Wearing of gloves

3. Equipment disinfection

i) Resuscitation bag & mask
   - Disinfect daily & after each use with detergent.
   - Sterilize weekly with 2% Gluteraldehyde
  ⠀  ❖ Resuscitation bag
       - Check that each participant is able to dismantle and then re-assemble the bag

ii) Laryngoscope
   - Check that each participant is able to lock and unlock the blade without any fumbling/hit-trial.
   - Wipe blade with 70% isopropyl alcohol after use.

iii) Thermometer
    - Highlight the importance of having a separate one for each baby and check the following:
        - Wipes with alcohol after use
        - Stores in bottle containing dry cotton

iv) Oxygen hood
    - Clean every day or after use each use with detergent

v) Costs and mattresses
    - Clean everyday with 3% phenol or 5% Lysol
    - Replace mattresses whenever surface covering is broken

vi) Suction apparatus
    - Suction bottle should contain 3% phenol or 5% Lysol
    - Suction bottle should be cleaned with detergent and changed daily
    - Change tube connected to bottle daily. Flush with water and dry
    - Soak for disinfection in 2% gluteraldehyde
    - Ideally catheter for suction should be for single use

vii) Feeding utensils
    - Cup, spoon and paladai should be boiled for at least for 15 min before use.
    - Feeding tubes should be preferably disposable.
4. Care of Cord & eyes

Cord - Keep cord dry
Do not apply anything

Eyes
- Check direction of cleaning- Medial to lateral side
- Check that a separate sterile saline soaked cotton swab is used for each eye.

IV. ASSESSING CRT & VENOUS ACCESS

OBJECTIVE: Upon completion of this session each participant

i) Should be able to assess perfusion by using CRT method
ii) Should be able to catheterize the umbilical vein
iii) Should be able to demonstrate peripheral venous access on an improvised model.

RATIONALE
Facilitator should emphasize on the importance of CRT and umbilical access

i) CRT-CRT is simple sign to assess perfusion (BP) of a baby.
ii) A CRT of >3 seconds denotes poor peripheral perfusion.
iii) This can also be prolonged in hypothermia due to peripheral vasoconstriction.
iv) If the baby is hypothermic, first warm the baby and then reassess CRT after temperature improvement.
v) Umbilical venous access – It is a quick IV access for infusing volume expanders & drugs during resuscitation.
vi) IV access: To provide parental fluids & medications

EQUIPMENT & OTHER REQUIREMENTS:

i) Stop watch/wrist watch
ii) Umbilical cord 1 ft
iii) Blade
iv) Forceps
v) Normal saline
vi) 2ml/5ml syringe
vii) 5fr. Feeding tube or umb. venous canula.
viii) Straw, Splint, Tongue depressor
ix) Polythene sheet
x) Spirit
xi) Iodine
xii) Gloves
xiii) Soap & Water
xiv) Sticking tape
xv) Splint
SKILLS

i) CRT assessment
ii) Umbilical Venous cannulation on a cord stump.
iii) Peripheral IV access on an improvised model.

PROCEDURE:

i) CRT assessment- Check the following as the participants perform-
   - Washes and dries hands.
   - Check that participant first assesses the temperature by tactile method and comprehends that CRT assessment can be fallacious in cases of hypothermia
   - Presses on the forehead or sternum using index finger/thumb for 5 sec, releases and looks at the blanched area for return of color
   - Notes the time taken for return of color.

ii) Umbilical Venous Cannulation: Facilitator demonstrates and then ensures that each participant performs this activity and acquires the skill (depending on availability of cord stump).

Check the following as the participants perform umbilical venous canulation on the stump provided-
   - Washes hands & dries.
   - Wears gloves with an aseptic technique
   - Drapes the area with a sterile cloth/drape
   - Before cannulating connects syringe to the catheter, flushes the catheter with saline and ensures that there is no air in the assembly
   - Cuts the umbilical cord transversely
   - Ensures that blade/blunt scissors used to cut cord is sterile.
   - Is able to demonstrate 2 arteries & 1 vein (is aware that vein is thin walled, patulous & has a large opening and arteries are thick walled & smaller in caliber.
   - Is also aware about the normal position of the vessels-- Umb. Vein is at 11-12 ‘O’ clock position.
   - Inserts the saline filled catheter gently into the vein and checks for the back flow of the blood (Actually, the back flow of blood can be appreciated in a live baby)
   - Is aware that in real situations, the length of the catheter to be inserted is usually 3-4 cm below the skin till there is a free flow of blood.
   - Is aware of the consequences of pushing a rapid bolus in umblical vein
   - Pinches the catheter while removing after the requisite drug or fluid has been given
   - Presses the cord stump to prevent bleeding.

iii) IV ACCESS:
   The training for gaining an intravenous access shall be done on a model which is provided. Each participant shall carry out this skill on this given model.

Check the following as participants demonstrate the skill-
- Washes hands with proper technique
- Wears gloves with the aseptic technique
- **During skin preparation, allows to** dry between applications of spirit and betadine
- Gives adequate instructions to restrain the limb/baby and to make the vein prominent
- Pierces skin distal to the intended site of entry into vein.
- Ensure free flow, thread the needle further up
- Secures in a way that would not displace with ease
- Uses a splint if a joint needs to be stabilized-
- Check distal limb for adequacy of circulation and any venous congestion (participant has to appreciate any change in color after canulation- in real situations).
Day 3

Session 1. – I/V fluids & management of Hypoglycemia, Management of shock

............................................................................................................ 9:00-10:30 AM

❖ This session is conducted in 2 groups similar to D2.

❖ All the activities of this session have been mocked and so have been pre-timed. So the facilitators are
  requested to strictly adhere to the prescribed time limit lest they should miss upon sessions at end of the day.

RECAP:

❖ At end of each chapter there is an evaluation. This is revision of the topics covered on D2. This should be
  conducted as follows

  o Limited time should be spent on this by facilitator as these topics were discussed in detail in the
  discussion sessions.
  o The idea of the evaluation is to reiterate the core message of the module to the participants especially
  for slow learners.
  o It also provides opportunity for the facilitator to evaluate informally the effectiveness of the teaching
  exercise.
  o Facilitator asks questions from the evaluation section one by one to the participants and discusses the
  answers.
  o Facilitator should try to encourage participation of the more shy candidate(s) during this revision
  period.

A. FLUID MANAGEMENT

After completion of this module the participant should be able to-

1. Identify babies who need IV fluids
2. Calculate daily fluid intake
3. Administer IV fluids with measured volume set / infusion pump
4. Monitor babies receiving IV fluids
5. Adjust IV fluids with enteral feeding
6. Reading session 1 .........................................................................................10 min.
   a. Reading of
      i. Babies requiring IV fluid therapy
      ii. Choice of fluids
      iii. Administration of IV fluid
      iv. Volume of IV fluids to be given
7. Group Discussion 1 ......................................................................................10 min.
   b. During the discussion make a group revision of all the values and numbers regarding fluid calculations
      with special emphasis on calculating of drop rate.
   c. Highlight why fluid requirements of a pre term differ from a term, tell about extra water losses in a pre
      term, about different body water / kg in preterms
d. Stress on checking for presence of any particulate matter in the fluids.
e. Stress on errors while putting KCL. Chances of over dosage and possible consequences.

8. Reading session 2………………………………………………………….10 min.
f. Reading of
   i. Monitoring of babies receiving IV fluids
   ii. Adjusting IV fluids with enteral feeding

9. Group discussion ………………………………………………………5 min.
g. Stress on Checking the IV site frequently.
h. Stress on daily wt record
   i. Stress on urine output as guide to titrate the fluids
   j. Watch for signs of overhydration
   k. Should discuss when to stop IV fluids

10. Facilitator should conduct a Drill taking vivid case scenarios involving babies of different wt and different
days of life ( examples given in the module should be used )
11. Discussion of the Evaluation ……………………………..10 min.

EVALUATION
Preterm neonate weighing 1.4 kg with breathing difficulty is brought to SCNU. The
health care provider has decided to provide IV fluids along with other supportive treatment.

Q1. What IV fluid you would start? How much volume of IV fluid is needed and at what rate?

10 % dext ---- 112 ml/day-- @ 4.6 ml/hr(80 ml/kg/d)

2. After 48 hours this baby still needs IV fluids. What changes in IV fluids are required?

ISO P 154 ml/day -- @ 6.4 ml hr( 110 ml/kg/day)

Q3. Baby’s respiratory distress settled on day 3 and he was started on minimal feeds.
Today on day 4 he is on 3 ml 2 hrly feeds of EBM. How will you adjust the IV fluid?

Day 4 → 125 ml/kg/d = 175 ml total fluid.
Feed = 3ml X 12 feeds = 36 ml
IV fluids= total- feeds, →175-36= 139 ml, given as ISO P @5.8 ml/hr

Q4. What are the steps of monitoring this baby who is on IV fluids?

SELF LEARNING FOR REVISION OF THE PARTICIPANTS ONLY, SO
DISCUSS ONLY IF NO TIME CONSTRAINT, REFER to Module

Q5. On D 7 of life baby is receiving 9 ml of EBM every 2 hours. How will you adjust IV fluids?

Day 7 →150 ml/kg/d = 210 ml total fluid.
Feed = 9ml X 12 feeds = 108 ml
IV fluids= total- feeds, →210-108= 102 ml, given as ISO P @4.3 ml/hr
Q6. When will you stop IV fluids in this baby?

Total fluid required = 210. Stop iv fluids when tolerating at least 2/3 of required fluid
2/3 of 210 = 140 ml.
140 ml feeds means 11.6 ml 2 hrly.
SO STOP IV ONCE TOLERATES 12 ML 2 HRLY FEEDS.

B. HYPOGLYCEMIA

Learning objectives

After completion of this module the participant should be able to-

- Identify babies at risk for hypoglycemia
- Perform blood glucose estimation using dextrostix or glucometer
- Manage hypoglycemia

12. Reading session 1…………………………………………………………10 min.
   i. Neonates at risk of Hypoglycemia
   ii. Technique of estimation of Blood sugar
   iii. Upto the End

13. Group Discussion 1…………………………………………………………5 min.
   l. As most conditions in sick neonates can lead to hypoglycemia, facilitator should avoid going into
depths of each of them. This may be out of scope of current module.
m. Instead more time should be spent on enlisting the predisposing conditions and practical management
of hypoglycemia.
n. Facilitator should highlight the significance of the ready reckoner charts given in the module.
o. Participants should be given practical hints. Like increasing fluid rate by 20ml/kg/day from the
current rate in order to increase the GIR, will avoid recalculation and re-preparation of fluid
frequently. This may be useful at times when staffing is low.

14. Facilitator should conduct a Drill taking case scenarios involving babies of different wt of life and
requirement of different GIR (examples given in the module should be used)
15. Discussion of the Evaluation ………………………….10 min.

EVALUATION:

Q1. Define hypoglycemia and list the babies who are at risk for hypoglycemia?

SELF LEARNING FOR REVISION OF THE PARTICIPANTS ONLY, SO
DISCUSS ONLY IF NO TIME CONSTRAINT, REFER to Module
Q2. A 2 day old weighing 2.0 kg is brought to SNCU with refusal to feed and hypothermia. His blood sugar by dextrostix is 20 mg/dl. How will you manage this baby?

1. 4 ml 10 % dextrose IV (give through feeding tube if delay in iv accesss)
2. Start maintainance infusion so as to achieve a GIR of 6 mg/kg/min.
   Total fluid for day = 150ml(75 ml/kg/d) prepared as 68 ml/kg/d of 10 D and 8 ml/kg/d of 25 D {refer to charts}
   Write orders as:
   136 ml 10 d + 16 ml 25 D @ 6.3 ml/hr (6 micro drop/min)
3. Check next sugar after 30 mts and inform to increase GIR to 8 mg/kg/d else keep on monitoring Dx every 4 hrs.
4. Try breast feeds/spoon feeds.
5. Maintain warmth

Q3. After 12 hours baby’s blood sugar is above 45 mg/dl, baby is active with normal body temperature. How will you proceed?

1. Try feeds – Breast or katori/spoon/palade
2. Continue dextrose monitoring 12 hrly
3. Taper dextrose infusion over next 24-48 hrs
4. Maintain warmth
5. Monitor urine output
6. Check weight daily

Q4. How will you monitor this baby whose blood sugars have returned to normal?

1. Continue feeds and promote BF
2. Continue dextrose monitoring 12 hrly
3. Taper dextrose infusion over 48 hrs
4. Discharge planning with feeding advice

C. Shock

Learning objectives

After completion of this module the participant should be able to-

- Identify shock
- Elicit CFT assessment
- Enumerate the different causes of shock in neonates
- Perform fluid resuscitation
- Use vasopressors and be able to calculate their doses

- Reading session 1…………………………………………………………………………………………..5 min.
  - Whole chapter except how to give dopamine

- Group Discussion 1…………………………………………………………………………………………5 min.
  - Stress upon CFT and tachycardia as early signs of hypotension / shock
  - Discuss a case scenario which takes through
    - the steps of evaluation,
    - fluid resuscitation
    - response to fluid resuscitation,
    - when to initiate vassopressers / steroids
    - end points in treatment

- Reading session 2…………………………………………………………………………………………..5 min.
  - How to give Dopamine

- Group Discussion 2…………………………………………………………………………………………5 min.
  - Exercise on dose calculation of dopamine

- Discussion of the Evaluation ……………………………………….10 min.

A 7 days old baby weighing 2 kg is admitted with refusal of feeds, fast breathing with mottling of skin, cold extremities, poor peripheral pulses and a CRT of 5 seconds.

Q1. What is your provisional diagnosis?

SHOCK

Q2. How do you assess the CRT and how do you interpret the capillary refill time?

Press for 3-5 sec on sternum and then count from 1-5 and look for return of color.

Q3. What are the steps of initial management of a neonate with shock?

1. Oxygen
2. Airway and breathing
3. Take baseline vitals- HR and CFT especially
4. IV access and check sugar –give 10  D bolus if sugar < 45.
5. Start infusion of 20 ml NS over 20 mts and reaccess HR and CFT
6. If no improvement repeat the same and reaccess
7. Obtain a sepsis screen
8. Monitor urine out put
9. Do a dextrose charting 4- 6 hrly
10. Maintain warmth
Q4. After giving 2 fluid challenges, CRT is still 4 seconds with HR of 170 bpm. How will you proceed?

1. Start Dopamine @ 10 mcg/kg/mt
   Calculate as 10mcg X 2kg x 60mt x 24 = 28,800 mcg- 28.8 mg in 24 hrs
   Write orders as :
   28.8 mg (0.72 ml)dopamine {1 ml = 40 mg)( in 24 ml NS and start @ 1 ml/hr
2. continue to monitor HR and CFT along with other monitoring as before
3. Start maintainance IV fluids
4. Start Empirical Antibiotics(will be discussed in other sessions)
5. Escalate Dopamine to 20 mcg/k/hr and if needed add Dobutamine as discussed in module.

Facilitator to discuss use of Vasopressors

1. Should emphasize that addition of vasopresors alone without fluid replacement just like installing a strong pump on a dried well and expecting to see water rising.

   In other words no clinical response can be expected by vasopressors alone if adequate intravascular fluids have been replenished.

2. Should also caution about dangers of extravasations of Dopamine into tissue spaces if IV access is faulty, so IV site should be inspected more frequently

Day 3 Session 2: Neonatal seizures

Learning objectives:

The participants after completing this module should be able to:

1. Identify neonatal seizures and differentiate them from jitters and titanic spasms
2. Enumerate causes of neonatal seizures
3. Manage neonatal seizures

- Reading session 1………………………………………………………………………………………………………10 min.
  - Common types of neonatal seizures
  - Features of spasms due to tetanus
  - Diagnostic approach and treatment
• Group Discussion 1………………………………………………………..5 min.
  o Elaborate upon how neonatal seizures differ from titanic spasms and jitteriness.

• Reading session 2………………………………………………………..5 min.
  o Pharmacotherapy for neonatal seizures

• Group discussion 2 …………………………………………………………..5 min
  o Revise all the drug doses of ACTs
  o Go through the steps of the flow diagram foe management of neonate with seizures.
  o Emphasize on the importance of Hypocalcemia as a cause of seizures in neonates.

• Discussion of the Evaluation ………………………………….5 min.
• 3 min. VIDEO ON NEONATAL SEIZURES……………………..5 min.

Day 3 Session 3: Post asphyxia Management

Learning objectives
After completion of this module the participant should be able to -
• He should be able to list the anticipated problems in a case of asphyxiated neonate
• Recognize poor prognostic factors in asphyxia

• Reading session 1………………………………………………………..15min.
  o Clinical presentation
  o Initial stabilization and management

• Group Discussion 1………………………………………………………..15 min.
  o Emphasis on special needs of asphyxiated babies
• Reading session 2………………………………………………………..10min.
  o Monitoring
  o Poor prognostic factors
  o Preventive of asphyxia

• Group Discussion and Evaluation ………………………….20min.

Day 3 Session 4 : Respiratory distress in Newborn

Learning objectives
After completion of this module the participant should be able to-

a. Diagnose common causes of respiratory distress in Term and Preterm newborns
b. Identify babies with respiratory distress and assess severity of respiratory distress
c. Deliver oxygen and manage babies with respiratory distress
d. Monitor babies on oxygen therapy

• Reading session 1………………………………………………………..15min.
  o Common causes of respiratory distress
  o Approach to respiratory distress
o Assessment of severity of respiratory distress
o Initial stabilization and management

• Group Discussion 1…………………………………………………………………………20 min.
  o Clarify on terms like Respiratory distress syndrome vs Respiratory distress per se vs TTNB and different scenarios of each of them
  o Highlight the importance of scoring systems – to remove subjective biases in assessment and to have a uniform protocol management of cases in different SNCUs.

• Reading session 2…………………………………………………………………………10 min.
  o Investigations
  o Management

• Group Discussion 2…………………………………………………………..               10min.
  o Highlight that a CXR may not show any findings in all cases of respiratory distress.
  o Emphasize general care including that of fluids, hypoglycemia and hypoglycemia prevention in all cases of respiratory distress.
  o Emphasis should be laid on frequent monitoring till the child is oxygen dependent
  o It may suggested that out of the three modalities to give oxygen ( Hood, prongs nasal catheter) participants should start with Hood and move on the other modalities if response is inadequate. This may be the easiest and practical approach as sometimes user are confused which modality to start with.
  o Although nasal prongs / catheter can deliver some CPAP, the module has not discussed CPAP concept hence discussion on this should be avoided.
  o Facilitator should clearly spell out the criteria of starting and stop oxygen.

• Evaluation…………………………………………………………………………………………15 min.

• Video Demonstration…………………………………………………………………………10 min.
Day 3: Session 5

NEONATAL JAUNDICE

Learning objectives:

The participant after completing this module should be able to:-

1) Enumerate the characteristics of physiological jaundice.
2) Enumerate the alert signs in neonatal jaundice.
3) Assess the severity of jaundice based on the clinical estimation.
4) Institute phototherapy based on recommended guidelines.
5) Assess a neonate with conjugated hyperbilirubinemia.

• Reading session 1………………………………………………………………………10 min.
  o Physiological jaundice
  o Causes of jaundice
  o Approach to a jaundiced baby
  o ……… upto drill on use of charts.

• Group Discussion 1………………………………………………………………………10 min.
  o Facilitator should emphasize on participants understanding the difference between physiological and pathological jaundice
  o Facilitator should clearly bring out the start and stop points for phototherapy

• Reading session 2………………………………………………………………………10 min.
  o Rest of Module

• Group Discussion and Drill on how to use the table…………………………………..10 min.
  o He should discuss the normal things that happen when a baby is put under phototherapy.
  o He should make participants learn how to plot the hour specific charts

• Evaluation……………………………………………………………………………………10 min.

Day 3 Session 6 Equipment Demonstration (Hospital Visit)

Equipment Demonstration

The facilitator should take the participants in groups to the SCNU for demonstration of the equipment.

Following equipment should be demonstrated

• Radiant warmer,
  a. Discuss the importance of keeping the probe attached to baby

• Weighing scale,
  a. Discuss the importance of zeroing the machine
• Phototherapy unit,
• Suction machine
  a. Importance of limiting the highest pressure to 100 mm Hg
• O2 Source & O2 Delivery systems
• Pulse oximeter,
• Infusion pump
• Burette sets

(Refer to module for details on Equipment Demonstration)
Day 4

Sessions during day 4 cover wide range of topics which are individually covered in various modules. The motive behind this session is to inculcate a systemic approach to handling, evaluation and management of neonatal patients during transport.

Session 1 : Neonatal sepsis

Learning objectives:

The participant after completing this module should be able to:-
1) Enumerate the etiological organisms of neonatal sepsis.
2) Identify clinical features of neonatal sepsis.
3) Describe methods to diagnose neonatal sepsis.
4) Interpret the ‘sepsis screen’.
5) Enumerate the steps of supportive care of septicemic neonates.
6) Chart antibiotic therapy for a septic neonate.

- Reading session 1………………………………………………………………………15min.
  - Etiology, Early & Late onset sepsis
  - Clinical features
  - Diagnosis

- Group Discussion 1………………………………………………………………………20 min.
  - Emphasize regarding early onset sepsis – Risk factors in whose presence, one should suspect and work up for probable sepsis.
  - Emphasize regarding Late onset sepsis – role of external factors and need to exercise strict aseptic techniques in order to avoid LOS.
  - Further emphasize regarding signs of sepsis – overlap with signs of hypothermia / hypoglycemia / shock / RDS or HMD.
  - Emphasize on sending of blood cultures before the first dose of empirical antimicrobial therapy is started.
  - Bring out clearly, the indirect criteria which may be used to suspect sepsis when cultures are not available.
  - Read aloud difference in interpretation of normal CSF of a term and a pre term neonate

- Reading session 2………………………………………………………………………15min.
  - Treatment
  - Supportive care
  - Antibiotic therapy
  - Prevention of infections

- Group Discussion 2………………………………………………………………………20 min.
  - Emphasize more on the components of supportive care in management of sepsis and that they can be at times more crucial in reducing mortality or decreasing the SNCU stay of the baby.
  - While aquainting the participants with the recos for empirical antibiotic therapy, it should also be emphasized that in case of suspected nosocomial infections, antibiotic therapy should be guided by known sensitivity patterns for a particular unit.
Clearly bring out the indications of discontinuation of the antibiotics and appropriate durations in various infections
Lastly, do stress on measures to prevent the infections

- DRILLS: ……………………………………………………………………………………………….20 mt

- The facilitator should carry out the following drills:
  - DRILL ON DISINFECTION OF COMMON NEWBORN CARE ARTICLES
  - DRILL ON WASTE DISPOSAL IN A NEONATAL UNIT
    Following questions can be raised and participants should asked in turns, trying to promote more shy ones to answer-
    - What should be used to clean walls and sinks → 3% phenol or 5% Lysol.
    - How frequently walls to be disinfected → at least once a day
    - How frequently should we do wet mopping of the room → at least 3 times a day
  - How to manage spills and splashed → 10 gm of bleach in 1 ltr of water. Cover the area with solution for at least 20 minutes and mop
  - How to disinfect Cup, spoon and palada → boil for at least 15 min before use
  - How to disinfect Feeding tubes → should be disposable only. DO NOT RE USE.
  - What is the difference between Disinfection & Sterilisation. →
    - Disinfection is killing of the live micro-organism and this can be achieved by 20 minutes contact period with 2% gluteraldehyde.
    - Sterilization is killing of live micro-organism along with spore. This can be done by 4 hour contact period with 2% gluteraldehyde.
  - How long does 2% gluteraldehyde once prepared is active? → for 14 days.

- EVALUATION Discussion of the Evaluation ……………………………………….15min.

1) What are the common pathogens causing sepsis in neonates?

SELF LEARNING FOR REVISION OF THE PARTICIPANTS ONLY, SO DISCUSS ONLY IF NO TIME CONSTRAINT

2) Enumerate the common clinical features of neonatal sepsis.

SELF LEARNING FOR REVISION OF THE PARTICIPANTS ONLY, SO DISCUSS ONLY IF NO TIME CONSTRAINT

3) Interpret the following Sepsis screen(s) as positive or negative –

   a. TLC -3800/cu mm, CRP Positive, ANC 2020, IT ratio NA, uESR 12 mm → +ve
   b. TLC -9900/cu mm, CRP Positive, ANC 2020, IT ratio NA, uESR 12 mm → -ve
   c. TLC -9200/cu mm, CRP Negative, ANC 1270, IT ratio NA, uESR 18 mm → +ve
   d. TLC -8800/cu mm, CRP Positive, ANC 1920, IT ratio 0.02, uESR 14 mm → -ve

4) Write treatment orders for a 2000 gm 9 days old baby diagnosed to have sepsis today.

   1. Provide warmth
   2. Estb IV access – take samples for sepsis screen and check dextrose
   3. Give 4 ml 10D if rbs <45
   4. Inj Vit K 1 mg im single dose
5. Maintainance Iso-p 300 ml/24 hr → @ 12.5 ml/hr (12-13 microdrop/mt) {feeds if hemodynamically stable}
6. Inj Ampicillin 100 mg iv 8hrly
7. Inj Gentamicin 10 mg iv 24 hrly
8. Monitor vitals 2 hrly (RR, HR, CFT, SO2, temp)
9. Monitor urine output
10. Monitor dextrose 4 hrly
11. Watch for respi distress/ cyanosis
12. Send the sepsis screen

5) Describe measures to prevent infection.

SELF LEARNING FOR REVISION OF THE PARTICIPANTS ONLY, SO DISCUSS ONLY IF NO TIME CONSTRAINT

- 12 MINUTE VIDEO……………………………………………………………………………...20 min
EMERGENCY TRIAGE ASSESSMENT AND TREATMENT

After completion of this module the participant should be able to-

- Triage neonates at health facility for appropriate management
- Assess temperature and manage temperature instability
- Assess airway and breathing and manage the same
- Assess circulation and manage shock
- Assess for convulsions and coma and manage the same

1. Reading session 1……………………………………………………………..10min.
   a. Reading of
      i. From start of module
      ii. Upto ( including) Assessment of emergency and priority signs

2. Group Discussion 1……………………………………………………………..5 min.

3. Reading session 2………………………………………………………………5 min.
   a. Reading of
      i. From….Chart 2: Flow diagram for Triaging Sick Neonates
      ii. Till end of the module ( Leaving the evaluation)

4. Discussion and evaluation questions given at end of the chapter……………………………………………………………..10min.

Day 4 session 4Neonatal Transport

Learning Objectives

After completion of this module the participant should be able to-

- Identify babies who need referral
- Provide counseling and family support
- Prepare and organize referral
- Provide pre-referral stabilization and enroute advice

5. Reading session 1………………………………………………………………10min.
   a. Reading of
      i. Indications of transfer from community to SCNU………
      ii. ………. Up to Communication

6. Group Discussion 1………………………………………………………………15min.
   a. Facilitator should stress on the need for the good communication and rapport with the family. For the same the care giver should acquaint himself with the educational status, economic status and the family support.
b. Care giver should counsel the family for the following
   i. Reason for need of transfer – non-availability of higher facilities in scnu
   ii. What are the likely events if the treatment is continued at the SNCU
   iii. What is the likely events during transport
   iv. What are the available means of transport
   v. What is the approximate of transport costs
   vi. What is the approximate time taken transport
   vii. What care or treatment is likely to be instituted at tertiary level
   viii. What is the likely management after going to tertiary level

7. Reading session 2…………………………………………………………10min.
   a. Reading of
      i. Assessment and stabilization
      ii. ............up to (inclusive of) Oxygenation.

8. Group discussion 2…………………………………………………….15min.
   a. Highlight the importance of KMC during the transport
   b. Importance of educating the primary care giver towards the needs of infant during transport.

9. Discussion the evaluation questions given at end of the chapter…………….10min.

10. Role Play
    a. Counsel regarding transport of a 1.5 kg deeply jaundiced 5 days old neonate. Neonate has already
       received intensive phototherapy for one and still the jaundice is increasing. Care giver (doctor) feels
       that infant requires exchange transfusion for which facility is not available at SNCU.
    b. Facilitator should moderate such that following points are covered by the counselor during the role
       play.
       i. Counselor should try to bring in all the responsible family members together in one session. However, this should not delay the communication
       ii. Acquaints himself with all the members and should identify the person who can best comprehend the problem and in turn is able to explain to other responsible members who are in a decision making capacity but may not comprehend that well.
       iii. Highlights all the concerns of the baby like prematurity, LBW, jaundice
       iv. Then informs the attendants about the care being given at your SCNU like feeding/iv fluids/phototherapy/antibiotics.
       v. Does tell about any positive developments in baby if any before you elaborate on complications eg. Maintenance of blood sugar, temperature, feed tolerance, passage of urine and stools, etc.
       vi. Now explains about the problems like increasing jaundice and try to explain in a lay man’s language what all damage jaundice can do and what are the long term problems if it is not taken care of now.
       vii. Having educated the family members about these, now emphasizes the need of an exchange transfusion for this baby and for which you advise them to transport to a higher centre.
       viii. Informs the family about any communication, (if any has been done) with the centre where the baby is being transferred and best if gives contact no. of the key person at the higher centre.
       ix. Also explains about the nature of treatment that would be instituted
       x. Pre inform them about issues like - need for blood donors for exchange transfusion.
       xi. Advises them to take mother along as she will be needed for a blood cross match and will also ensure breast milk for the baby.
       xii. In case mother is not fit to travel, then ensures that relatives do remember to carry a sample of mother’s blood.
xiii. Also explains that a detailed record of all the t/t will be given to them.

xiv. Tells that he will be in touch with the doctors there regarding the t/t of this baby and may give his contact no. – These things give a lot of moral support to the family and preserve their faith in your SNCU and also ensure a good follow up at the same time.

**LUNCH**

Post Lunch Sessions

New Born Check List

Facilitator discusses the newborn check list with the participants. He tries to make a two way discussion. The stress is laid on the pattern to be followed ie TABC FM FM CF. The idea of this rigid pattern is to prevent any vital steps being missed.

Newborn Case sheet

Facilitator should promote the use of these objective case sheets in place of free notes. This will help to capture more complete information and serve as a reminder for the care giver. SNC units are going to be equipped with computers, where they will be required to fill data in customized form. These case sheets will help them to enter the data in retrospect.

……………………………………………………………………………………………………30min.

Case studies

Based on the checklist for newborn care, the facilitator now discusses the following cases on the principle of TABC FMFMCF

Case Study – 1

1. A 5 days old baby is brought to the casualty in the hospital with respiratory distress. The child has a temperature of 36 degree C. The respiratory rate is 72/min. The CFT is > 3 secs. Proceed to triage this neonate.

2. How would you manage this neonate.

Key:-

Triage assessment- Emergency case ( resp rate > 70, CFT > 3sec )

Action required:- Needs emergency treatment

T – provide warmth
A –
B – provide oxygen
C – assess CFT
F – 10 ml / kg of NS and then reassess CFT if < 3 Start fluids at 150 ml / kg isolyte – p, if > 3 repeat the above step
M – do blood sugar and septic screen and Start Amox and gentamycin
F – with hold feeds till more stable
M – Temperature, respiratory score, oxygen saturation
Case Study – 2

A 7 day old newborn is brought in with complaints of fast breathing and inability to feed at the breast. The weight today is 2250 gm as against 2450 at birth. The temperature is 36 degree C respiratory rate is 80/min with moderate retractions and grunt but no cyanosis.

What is your diagnosis?

Diagnosis: respiratory infection

How will you manage the baby?

T – provide warmth
A –
B – provide oxygen
C – assess CFT
F – 10 ml / kg of NS and then reassess CFT if < 3 Start fluids at 150 ml / kg isolyte – p, if > 3 repeat the above step
M – do blood sugar and septic screen and Start Amox and gentamycin
F – with hold feeds till more stable
M – Temperature, respiratory score, oxygen saturation
C – communicate the infants condition to parents from time to time and discuss referral if need for mechanical ventilation arises
F – not applicable
Case Study – 3

A, 35 weeks gestation baby was feeding well at the breast and on day 5 developed discharge from the umbilicus followed the refusal of feeds and lethargy the next day. He vomited twice, had a feeble cry and on way to the hospital had a convulsion.

At the hospital-
- Weight was 2400 gm
- Temperature was 37 degree C
- Drowsy
- RR-56/min, no retractions, no grunt
- CFT-5 secs.
- Abdominal distention and poor bowel sound with a normal fontanelle.

What is your diagnosis?
How will you manage this baby?

Diagnosis: septicemia with probably meningitis with shock

T – provide warmth
A –
B – provide oxygen
C – assess CFT
F – 10 ml/kg of NS and then reassess CFT if < 3 Start fluids at 150 ml/kg isolyte – p, if > 3 repeat the above step
M – Do blood sugar and septic screen and lumbar puncture and Start cefotaxime and gentamycin, Load with phenobarbione.
F – with hold feeds till more stable
M – Temperature, respiratory score, oxygen saturation
C – communicate the infants condition to parents from time to time and discuss referral if need for mechanical ventilation/uncontrolled convulsions arises
F – Give follow up advise.
Facility based newborn care - Pretest /Posttest

Q 1. Which are the babies who need referral to a tertiary care centre?
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Q 2. What are the common pathogens causing sepsis in neonates?
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Q 3. What is the level of jaundice if the baby has yellow palms and soles.
_____________________________________________________________________

Q 4. Enumerate the characteristics of physiological jaundice.
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Q 5. Write management of seizures in an asphyxiated neonate
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Q 6. How do you assess the CRT and how do you interpret the capillary refill time?
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Q 7. What are the steps of initial management of a neonate with shock?
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
Q 8. On D 7 of life, a baby weighing 2 Kg is receiving 9 ml of EBM every 2 hours. How will you adjust IV fluids?
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Q 9. Define Low birth weight. What proportion of babies are LBW in our country?
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Q 10. Enumerate 4 physical features that can help differentiate a preterm from a term LBW.
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Q 11. Mention the fluid requirement of a 1500 gm baby on D 6 of life?
_____________________________________________________________________

Q 12. Enumerate factors enhancing Oxytocin reflex.
_____________________________________________________________________
_____________________________________________________________________

Q 13. Describe the four points of good attachment of the baby at the breast.
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Q 14. Enumerate the reflexes necessary in the mother and baby for successful breastfeeding.
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Q 15. Define Low birth weight. What proportion of babies are LBW in our country?
Q 15. 1. Enumerate mechanisms of heat loss in neonates.

a) 

b) 

c) 

d) 

Valedictory:

Facilitator takes this opportunity to thank the participants for their attention and interest. He hopes that the workshop will do good for the attending medical and paramedical staff. He requests them to share the information learnt during the workshop with their colleagues and encourage them to participate in future workshops. He encourages them to become local champions for this cause of improving newborn care services at district levels. He thanks the organizers the unicef state staff, CMO, and other faculty of who have directly or indirectly contributed to the success of the workshop.