



Facility Based Newborn Care (FBNC)

Facilitator Guide

2014





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Newborn Care (FBNC)

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भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
निर्माण भवन, नई दिल्ली – 110108
Government of India
Ministry of Health & Family Welfare
Nirman Bhavan, New Delhi - 110108



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FOREWORD

India has made remarkable progress in reducing childhood deaths but neonatal death rates have declined marginally, thereby contributing to a high proportion of total under-five deaths.

In order to standardize the curriculum for Facility Based Newborn Care program, Ministry of Health and Family Welfare developed a participant training manual, a NRP Manual and Operational guidelines for uniform implementation of FBNC training all over the country.

Facilitator's manual, has also been developed as a part of the training package so that all the facilitators conduct the FBNC trainings in a similar manner and uniform style. This manual guides facilitators to encourage and motivate the trainees to acquire the skills and knowledge needed for managing newborns with zeal and enthusiasm.

The unique feature of Facility based Newborn Care training is that the course is not presented in a lecture format. The participants attain knowledge through self-reading and skills are transferred through demonstrations, videotapes, role plays, drills and hands on training so that every participant develops specific skills necessary for taking care of sick and small neonates.

It is hoped that publication and dissemination of FBNC Facilitator's Manual along with the FBNC training manual will help strengthen the quality and uniformity of trainings resulting in optimum outcomes.

(Anuradha Gupta)



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PREFACE

India has witnessed rapid economic growth in the last two decades. Despite this, neonatal mortality rate continues to remain high and contributes to a large proportion of under-five deaths.

Reducing neonatal mortality is amongst the most important goal of the National Rural Health Mission. Large and strategic investments are being made by the Government of India to address this issue by improving the availability of and access to quality health care by people, with a special emphasis on the vulnerable population.

Tremendous efforts are being made under NRHM in ensuring provision of essential new-born care at all delivery points in the public health system. Specialised care to the sick and small new-borns is being provided at Special Newborn Care Units (SNCUs) and Newborn Stabilisation Units (NBSUs). Health care providers at these units require special skills, thus capacity building and skill up-gradation of these providers assumes great importance.

The Facilitator Manual will help the facilitators to guide and encourage the participants to acquire the knowledge and skills required to manage sick and small new-borns.

This manual when adapted by the States will not only improve the quality of the FBNC trainings but also enhance the skills of the service providers.

(Dr. Rakesh Kumar)

Healthy Village, Healthy Nation



एड्स — जानकारी ही बचाव है
Talking about AIDS is taking care of each other



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ACKNOWLEDGEMENT

The Government of India has given the 'call to action' on achieving the goals of reducing maternal, infant and neonatal mortality through the implementation of Reproductive, Maternal, Neonatal, Child and Adolescent health (RMNCH+A) strategy. Keeping these goals in view, training in neonatal resuscitation and facility based newborn care gains great significance. Quality of care at these facilities for newborns will play a key role in the RMNCH+A strategy.

The training manual prepared and being used by the experts of National Neonatology Forum (NNF) for the trainings of doctors and nurses has been adapted and updated by Ministry of Health and Family Welfare for Facility Based Newborn Care training package.

National Collaborative Centre for Facility Based New Care Programme at Kalawati Saran Children's Hospital New Delhi, under the aegis of MoHFW led a group of experts from various institutions along with other organisations namely UNICEF, NNF, UNDP-NIPI, NCHRC and USAID-MCHIP for updating, editing, designing, proofing and printing the manual and giving it the final shape.

The effort of all the experts from different organizations and the National Collaborative Centre for preparing the training manual for doctors and nurses working at the Facility Based Newborn Care (FBNC) units is greatly acknowledged. Capacity building process using this manual will go a long way in saving the lives of the newborns of the country.

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Facility Based Newborn Care Skill Based Training for Doctors and Nurses

Program

Day 1

- | | |
|---|----------------|
| 1. Inauguration and Welcome | 09.00–10.00 am |
| Objectives of the workshop and Introduction of the participants | |
| TEA | 10.00–10.30 am |
| 2. Neonatal Resuscitation
(Interactive sessions with demonstration on manikin) | |
| Pretest | 10.30–10.50 am |
| Initial Steps | 10.50–11.35 am |
| Bag and Mask: Equipment and Ventilation | 11.35–12.20 pm |
| Chest Compression | 12.20–12.40 pm |
| Endotracheal Intubation | 12.40–01.20 pm |
| Medications | 01.20–01.40 pm |
| LUNCH | 01.40–02.20 pm |
| 3. Work Stations (SKILL STATIONS – Hands on) | 02.20–05.00 pm |
| 4. Post Test | 05.00–05.15 pm |

Day 2

Welcome and Plan of the Day

FBNC Pre-test	08.45–09.00 am
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SELF READING SESSIONS (Classroom)

- | | |
|--|----------------|
| 1. Hypothermia and Thermal control
Video on KMC (13 mins) | 09.00–10.15 am |
| 2. Care at and after birth | 10.15–11.00 am |
| TEA | 11.00–11.30 am |
| 3. Breastfeeding
With 1 Drill, 1 role play and 8 mins Video
With a role play | 11.30–12.50 pm |
| 4. Preterm baby | 12.50–01.20 pm |
| 5. Care of Low birth weight neonate,
Drill and Video | 01.20–02.20 pm |
| LUNCH | 02.20–02.50 pm |
| 6. Skill Stations (Hospital)
(45 minutes each) | 02.45–05.45 pm |
| <ul style="list-style-type: none"> • Thermal Control • Breastfeeding/Assisted Feeding • Prevention of Infection • IV access, Umbilical cannulation, CRT evaluation, LP | |

Facility Based Newborn Care Skill Based Training for Doctors and Nurses

Program

Day 3

Welcome and Plan of the Day

SELF READING SESSIONS (Classroom)

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|---|----------------|
| 1. I/V Fluids, Management of Hypoglycemia and Management of Shock
Drill on Fluid Therapy | 09.00–10.55 am |
|---|----------------|

TEA	10.55–11.15 am
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- | | |
|--|----------------|
| 2. Post Asphyxia Management | 11.15–12.00 pm |
| 3. Neonatal Seizures, Video on Neonatal Seizures | 12.00–12.35 pm |
| 4. Respiratory Distress in Newborn, (Video on Respiratory Signs) | 12.35–02.00 pm |

LUNCH	02.00–02.45 pm
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|---|----------------|
| 5. Neonatal Jaundice, Drills | 02.45–03.30 pm |
| 6. Equipment Demonstration (Hospital Visit: 30 minutes each) | 03.30–05.30 pm |
| <ul style="list-style-type: none"> • Radiant Warmer, Weighing Scale • Phototherapy Unit, Suction Machine • Oxygen Concentrators, O₂ Source and O₂ Delivery Systems • Pulse Oximeter, Infusion Pump and Burette Sets | |

Day 4

Welcome and Plan of the Day

SELF READING SESSIONS (Classroom)

- | | |
|---|----------------|
| 1. Emergency Triage Assessment and Treatment (ETAT) | 08.45–09.15 am |
| 2. Neonatal Sepsis (Video and Drills) | 09.15–10.45 am |

TEA	10.45–11.00 am
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- | | |
|--|------------------|
| 3. Anemia and Bleeding in Neonate | 11.00–11.30 pm |
| 4. Neonatal Transport with One Role Play | 11.30–12.00 noon |
| 5. Follow up of high risk Newborn | 12.00–12.45 pm |
| 6. Newborn checklist, case sheets recording formats and online software* | 12.45–02.00 pm |

LUNCH	02.00–02.30 pm
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- | | |
|-----------------------|----------------|
| 7. Case Studies | 02.30–03.30 pm |
| Hospital Visit | 03.30–05.15 pm |

- | | |
|--|--|
| 8. Clinical Case Presentation and Discussion | |
|--|--|

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|----------------|------------------|
| 9. Valedictory | 05.15 pm onwards |
|----------------|------------------|

* **Session(1 hour):** Orientation on SNCU case sheets, recording formats and online software

Introduction to this Facilitator Guide

How does this course differ from other training courses?

- The material in the course is not presented as lectures. Instead, each participant is given an instructional booklet, called Participant's Manual for Facility based care of sick neonatal at referral health facility, which has the basic information to be learnt.
- Information is also provided through demonstrations, and videotapes.
- The module is designed to help each participant develop specific skills necessary for management of sick neonates in SNCUs.
- After practicing skills at the skill stations participants are given a demonstration of the same in real clinical setting in an existing neonatal unit.
- 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 to see that each participant comprehends the course material and is equally involved in every activity of the workshop.

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/her 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 six 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 three 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, role plays, video demonstrations, hands on training, clinical skills demonstration and discussion, equipment demonstration and case presentations, to ensure that learning objectives are met.
- Promptly assess each participant's work and give correct answers.
- Discuss with the participant how she/he obtained her 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 and to apply the same in his/her own SNCU for care of the neonate.
- 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 state health department and MoHFW.

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 (so that both you and the participants 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 instructions to complete the module, highlighting the type of feedback to be given after each exercise.
- Guidelines for the instructions. These guidelines describe.
 - How to conduct, 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 demonstrations.
 - 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 questions to the participants that will encourage them to think about using the skills in their practice. Questions are suggested in appropriate places in the Facilitator Guide.

Checklist of instructional materials needed

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

Checklist of supplies needed for classroom sessions

Supplies needed for each person include:			
*	Name tag and holder		
*	Notepad		
*	Ball point pen		
*	Highlighter		
Supplies needed for each group include:			
*	Manikin	1	
*	Self-inflating Bag and Mask	1	
*	Linen (Baby sheets)	2	
*	Suction catheter	1	
*	Oxygen tubing	1	
*	Delee's trap,	1	
*	Laryngoscope	1	
*	Endotracheal tube (any size 2.5 to 4.0)		
*	Large size doll for role play	1	
*	White board and white board markers	4	
*	Laptop with LCD projector and screen	1	

In addition, certain exercises require special supplies such as manikin 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.

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 may not speak voluntarily again.

6. Answer participants' questions willingly, and encourage participants to ask questions when they want to rather than to keep the questions for 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 with 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 that everyone feels included. Be careful not to look always 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. You must be brief, 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 summarise frequently to keep participants focussed. 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 focussed 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 Kamla'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.
- Do not ask the talkative participant any more questions. If he answers all the questions directed to the group, ask for an answer from another individual specifically or from a specific subgroup (For example, ask, "Does anyone on this side of the table have an idea?").

15. Try to identify participants who have difficulty in 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

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 clinical protocols and management guidelines in the SNCU. 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 he/she will rewarm a baby whose temperature is low). Be sure to ask these questions and listen to the participant's answers. This will help participants to think about applying what they are learning.
2. Acknowledge and respond to the concerns of the participants regarding managing neonatal problems.

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 these 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 that you are 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 and ensure that the participant's answers match with the key, if not, provide them the correct answers.
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, 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 role play:

18. Before the role play, 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 role play,

- 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 the role play.
- Give role play participants any props needed, for example a baby doll.
- Give role play participants any background information needed. (There is usually some information for the "mother" which can be photocopied or clipped from this guide.)
- Suggest that role play participants speak loudly.
- Allow preparation time for enacting the role play.

20. When everyone is ready, arrange seating/placement of individuals involved. Have the "mother" and "doctor" stand 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.

27. Ask participants to summarise what they learned from the role play.

Day 1

09.00–10.00 am

Inauguration and 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, SNCU and in postnatal wards.
4. To train all participants in 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.

TEA

10.00-10.30 am

10.30–01.40 pm

Neonatal Resuscitation

(Interactive Sessions with
Demonstration on Manikin)

Pretest	10.30-10.50 am
Initial Steps	10.50-11.35 am

Bag and Mask: Equipment and ventilation	11.35-12.20 pm
Chest Compression	12.20-12.40 pm
Endotracheal Intubation	12.40-01.20 pm
Medications	01.20-01.40 pm

LUNCH

01.40-02.20 pm

02.20–05.00 pm

Work Stations

(SKILL STATIONS – Hands on) [40 mins each]

05.00–05.15 pm

Post-test

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 30 questions and needs to be completed in 20 minutes. Collect the pretest papers.
2. One faculty member starts with the overview and physiology of resuscitation.
3. The other three 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. Session should be conducted, one-by-one till Medications using manikins for demonstration and allowing ample interactions and discussion.

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

6. Each station is managed by one faculty member.
7. First station is on Initial steps.
8. Supplies required for each station have to be collected by the respective facilitator responsible for that station during the lunch time.
9. Second station is on Bag and Mask ventilation.
10. Third station is on chest compression.
11. Fourth station is on endotracheal intubation.
12. Each participant batch rotates through each of the stations. At one station they spend 40 minutes and it should be ensured that each participant is able to PRACTICE the skill after demonstration by the facilitator.

13. The first three of these stations should have a complete manikin 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 along with bag and mask ventilation

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

14. At the end of the four skill stations, participants reassemble in the classroom and an open house is done to clarify any queries. This should then be followed by post-test for 15 minutes.
15. Collect the answer sheets and evaluate them in the evening after the day's schedule is over.
16. Prepare the cumulative percentile scores of pretest and post-test and compare them. Discuss with the group. Demonstrate to them the progress from the pre-test to the post-test. Compliment them. Take care not to disclose individual score of pre-test and post-test of any participant.



Assessment

Pre-test/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 Mention the four questions of initial assessment which must be performed on all newborns.

Q.4 When deciding which babies with meconium stained amniotic fluid need tracheal suctioning, the term "vigorous" is defined by which three characteristics?

Q.5 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.6 List the two indications for positive pressure ventilation.

Q.7 List in order, the three signs on which an infant's condition is primarily evaluated.

- Q.8** When a suction catheter is used to clear the oropharynx of meconium before inserting and endotracheal tube, the appropriate size is _____ F to _____ F.
- Q.9** Free flow oxygen can be delivered reliably only with a _____ bag.
- Q.10** When selecting a face mask, make sure that the rim covers the tip of the _____ the _____ and the _____, but does not cover the eyes.
- Q.11** What is the purpose of using an oxygen reservoir with a self inflating bag?
_____.
- Q.12** State the rate at which a neonate should be ventilated using bag valve mask device.
_____ per minute.
- Q.13** What is the maximum permissible suction pressure while suctioning the airway?
_____.
- Q.14** When using bag and mask in neonatal resuscitation what should be the maximum volume of the bag?
_____.
- Q.15** You must hold the resuscitation bag so that you can see the newborn's _____ and _____.
- Q.16** At what pressure should the safety pop-off valve give way in bag and mask ventilation.
_____.
- Q.17** 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.18** The correct depth of chest compression is approximately _____ of the anterior-posterior diameter of the chest.
- Q.19** The ratio of compression to ventilation is _____ to _____.
- Q.20** At what heart rate should chest compressions be discontinued? _____ per minute.
- Q.21** Chest compressions should be accompanied by _____.
- Q.22** The following is the 6 second count of H.R. obtained on an infant. What is the Heart Rate per minute?

6 Second H.R.	H.R. per minute
---------------	-----------------

6	_____
---	-------

9	_____
---	-------

12	_____
----	-------

14	_____
----	-------

Q.23 Indicate the correct ET tube size for infants with the following weights.

Weight	Tube size
--------	-----------

800 gm	_____
--------	-------

3400 gm	_____
---------	-------

1200 gm	_____
---------	-------

2500 gm	_____
---------	-------

Q.24 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.25 Ninety seconds into resuscitation, the baby's heart rate is less than 60 beats per minute. You should now give _____ by the most quickly accessible route while continuing chest compressions and _____.

Q.26 During endotracheal intubation what is the maximum permissible time for successfully carrying out endotracheal intubation? _____.

Q.27 If you have not completed endotracheal intubation in the prescribed time limit, what should you do? _____.

Q.28 The blade of a laryngoscope for preterm newborns should be _____. The blade for term newborns should be _____.

Q.29 During Positive Pressure Ventilation with chest compressions, the rate of "events" per minute should be _____ "events" per minute.

Q.30 What concentration of epinephrine is recommended for neonatal resuscitation?
_____.

Day 2

08.45–09.00 am

FBNC Pre-test

Self reading classroom sessions

The group is divided into two, 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. All the activities of this session have been mocked and so have been pre-timed. The facilitators are, therefore, requested to strictly adhere to the prescribed time limit lest they should miss sessions at end of the day or stretch the day which is uncomfortable for both the participants and the facilitators.

09:00–10:15 am

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.
3. Reading session 1.....10 min.
 - a. Reading of
 - Mechanism of heat loss
 - Warm chain
 - Assessment of temperature and grading of hypothermia
 - Temperature recording and clinical signs and symptoms

4. Group Discussion 1.....10 min.
5. Reading session 2.....15 min.
 - a. Reading of
 - Prevention and Management of hypothermia
 - Fever
6. Group discussion 2.....10 min.
 - 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. Discuss the evaluation questions given at end of the chapter.....5 min.
8. Show 13 min. video on Kangaroo Mother Care and conduct discussion.....25 min.
9. Discuss temperature ranges for Grading and Management.
10. Make one participant read Learning objectives and ask the group whether the objectives were met or not

Answers:

- ★ Place the baby under a warmer and attach the thermister probe to get the temperature.
- ★ The baby is in moderate hypothermia. This can be treated by placing the baby under a radiant warmer set at 36.5° C. Provide oxygen, attach pulse oximeter, do a blood sugar and treat if low, give inj. Vitamin K if not given earlier.
- ★ Kangaroo Mother Care.

10.15–11.00 am

Care at and after birth

Facilitator has the 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.
5. Reading session 1.....15 min.
 - a. Reading of
 - Care at birth
 - Identification of 'At Risk neonates' needing hospitalization in SNCU
 - Postnatal Care
6. Group Discussion 1.....5 min.
 - 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 elsewhere.
 - b. Immunization to be done before discharge of the newborn should be discussed. However detailed discussion on immunization should be avoided due to time constraint.
7. Reading session 2.....15 min.
 - a. Reading of
 - Care beyond birth
 - Developmental variations and Physiological conditions
 - Normal phenomena in newborn
 - Immunization schedule
 - Danger signs
 - Checklist before discharge
8. Group discussion 2.....5 min.
 - a. In discussion with regard to normal development variations if desired by facilitator both reading and discussion can be done together.
9. Discuss the evaluation questions given at end of the chapter.....5 min.

Answers:

- ★ Provide routine care. Note time of birth, Place on mother's abdomen, position head, clean mouth and nose with clean cloth, dry with a clean sheet, clamp and cut umbilical cord, apply clamp/sterile tie, cover mother and baby with sheet/blanket, cover baby's head, place label on baby, give Inj. Vitamin K, initiate breastfeeding.
- ★ Reassurance and inform her about transitional stools.
- ★ Reassurance and inform her about withdrawal bleeding.
- ★ Advise regarding the importance of early breastfeeding, colostrum and disadvantages of prelacteal feeds. Tell her to follow the custom in a modified way.
- ★ Teach her the progression of jaundice and how to look for jaundice. Tell her to come back after 48 hours or earlier if the palms and soles are yellow.
- ★ Make one participant read Learning objectives and ask the group whether the objectives were met or not.

TEA

11.00-11.30 am

11.30–12.50 pm

Breastfeeding

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 breastfeeding.
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.....10 min.
 - a. Reading of
 - Advantages of Breast feeding
 - Anatomy and physiology
 8. Group Discussion1 (and posters).....5 min.
Reading session 2.....5 min.
 - a. Reading of
 - Breast feeding technique
 9. Group discussion 2 and drill5 min.
 - a. Facilitator with a help of a doll or dummy and a volunteer demonstrates the correct positioning for proper attachment of baby during breastfeeding.
 10. Video session15 min.
- 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
 - Breast conditions
 - Problems in breastfeeding
 12. Group discussion 3 and Role play (refer to the guide below).....25 min.
 13. Discuss evaluation questions given at the end of the chapter.....5 min.

Answers:

- ★ Greet and praise her for looking after the baby well and breastfeeding her baby. Ask mother to breastfeed the baby if not fed in the last one hour. Check positioning and attachment during the breastfeeding

session. Identify and correct any problems and reassure.

- ★ Greet and praise her for looking after the baby well and breastfeeding her baby. Ask mother to breastfeed the baby if not fed in the last one hour. Check attachment and take corrective measures, advise her to apply hind milk after feed and to continue breastfeeding.
- ★ Tell her to express breast milk in the morning and keep in the fridge to be fed later by caretaker with paladai/spoon. Advise her to breastfeed the baby before she leaves and she can also express breast milk in the office to be used the next day (if kept in the fridge) and instruct her regarding the correct method of rewarming cold breast milk. Ask her if there is a crèche at her place of work and if it is possible to take the baby with her.

Role play guide

COMMUNICATION IN NEWBORN CARE

Discuss chapter 18 here.

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 selective 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.

- 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.

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 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 reassess the responses in light of whether ALPAC was followed or not.
13. Facilitator discusses the importance of ALPAC.

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 breastfeeds 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.

Advise

Babies at this age should be given breastfeeds at least 8 times in the day and night.

Ask, listen

Why are you not breastfeeding 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 breastfeeds 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 breastfeed him more often.

Praise

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

Ask, listen

Health worker: Do you give anything else to Manu besides breast milk?

Mother: Yes, Manu is given some water and some tea in between breastfeeds. This way Manu is not hungry.

Advise

Health Worker: Giving other things at this age spoils all the protection that breastfeeds provides. 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, listen

Health worker: 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.

Summarise 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.

Feeding problems, which should be summarised in this role play, are:

- Low frequency of breastfeeding.
- Water and tea given to the baby.
- The baby not getting breastfeed when the mother goes out to work.

Baby refusing to breastfeed:

- Baby is ill (baby is having pain, fever, oral thrush, vomiting, nose blockage, etc.)
- Faulty breastfeeding technique (Position and attachment)
- Changes in care of the baby.
- Uneasy environment (crowded, noisy, uncomfortable-hot or cold, etc.).
- If mother is tense, uncomfortable or under pain.

Excessive crying

- Hungry (not getting enough milk, increasing demand).
- Higher expectations by the baby-some babies expect more milk. They want to be on the arms and moving around.

You can also look for the following and Advise appropriately

Breastfeeding	Mother
<ul style="list-style-type: none"> • Delayed initiation of breastfeeding • Fixed time feeding • Infrequent feeding • No night feeds • Shorter duration of feeds • Poor positioning and/or poor attachment • Use of bottles, pacifiers • Offering other liquids (water, tea) 	<ul style="list-style-type: none"> • Lack of confidence and support • Worried and/or Stressed • Tiredness • Unwilling to feed because of Illness/Pain/Cracked nipple • Breast problem • Smoking
	Baby: Illness

12.50–01.20 pm

Preterm baby

The participant after completing this module should be able to:

1. Define and categorize preterm babies.
2. Enumerate risk factors for preterm delivery.
3. Identify problems of prematurity and their management.
4. Reading session 1..... 15 min.

Reading of entire chapter

5. Group discussion 110 min.
6. Discuss the problems of prematurity and what causes them.
7. Discuss the evaluation questions given at end of the chapter.....5 min.

Answers:

- ★ Preterm is defined as a baby born alive before 37 completed weeks of pregnancy
- ★ History of a previous premature birth:
 - Mother's age – < 18 yrs and > 35 yrs of age
 - Being underweight or overweight before and/or during pregnancy
 - Multiple pregnancy
 - Uterine, cervical or placental abnormalities

3. Hypothermia
 - Respiratory distress
 - Feeding difficulties
 - Jaundice
 - Infections
4. Antenatal care
 - Antenatal steroids
 - Institutional delivery

01.20–02.20 pm

Care of low birth weight neonate

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

The participant after completing this module should be able to:

1. Define and classify 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.
5. Enumerate modes of feeding for a LBW.
6. Enumerate nutritional supplements needed for LBW babies.
7. Monitor the nutrition and growth of LBW babies.
8. Reading session 1.....15 min.
 - a. Reading of
 - Types of LBW
 - How to recognize preterm and SGA infants (photos)
 - Problems of preterm and SGA neonates
 - Delivery management of LBW
 - Keeping LBW warm
9. Group Discussion 1.....10 min.

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

10. Reading session 2.....15 min.

- a. Reading of
 - Nutrition and fluids
 - Discharge planning of LBW babies

11. Group discussion 210 min.

- 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-feed aspirates.

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

Answers:

- ★ 135ml/kg = 202.5 ml i.e. 200 ml in 24 hours
- ★ EBM with paladai/katori spoon
- ★ Supplements required would be:
 - a. Vitamin D 400 IU/day till 6 months
 - b. Calcium and phosphorus (Ostocalcium) 10ml/kg/day till 40 weeks post menstrual age (PMA)
 - c. Iron drops 2mgs/kg/day for 1 year
 - d. MV drops 0.3ml/day from 2 weeks of age till 40 weeks PMA
- ★ Advice given should include the following: Keeping the baby warm (KMC/adequate clothing), exclusive breastfeeds, continuing supplements, immunization as per schedule, information regarding danger signs, hand hygiene and attending follow up clinic.

LUNCH

02:20-02:45 pm

02.45–05.45 pm

Skill stations

There will be 4 clinical skill stations of 45 minutes each. The participants will rotate from station 1 through station 4.

I. Temperature recording and thermal control

Objective: Upon completion of this session each participant should:

1. Develop a habit of washing and drying hands before proceeding for any procedure.
2. Be able to record axillary temperature in a newborn.
3. Be able to clinically assess hypothermia, cold stress and normal temperature.
4. Be well versed with ways to achieve thermal control during domiciliary care, institutional care and transport.

Rationale: Temperature recording is a simple bedside tool to assess the baby's temperature and ascertain the degree of hypothermia.

Equipment and Other Requirements:

1. Soap and water
2. Autoclaved newspaper for hand drying
3. Low reading/Normal thermometer
4. A manikin/newborn
5. Cotton Swabs
6. Cotton sheet
7. A wrist watch
8. Mother or other caregiver to demonstrate kangaroo care

Skills:

1. Drying
2. Wrapping and covering the baby
3. Recording temperature

4. Tactile assessment of temperature (Cold stress assessment)
5. Kangaroo care

Facilitator should demonstrate these skills to the participants:

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 right corner of the sheet, 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
 - a. Switch on the Digital thermometer.
 - b. Place the baby supine or on the side.
 - c. Ensure dry arm pit.
 - d. Place the bulb of the thermometer pointing towards the apex of the axilla.
 - e. Hold arm in adduction at shoulder and flexion at the elbow till the thermometer beeps. Take out the thermometer and note the temperature.
4. Tactile assessment
 - a. Touch the baby's soles with the dorsum of hand
 - b. Next touch the baby's torso (chest and/or abdomen)

- c. Interpret as follows:
 - Normal temperature – if both are warm
 - Cold stress – if periphery cold and chest warm
 - Hypothermic baby – if both are cold

5. Kangaroo care
 - a. Facilitator should ensure that he/she has one mother baby duo per batch to demonstrate KMC. In front of the participants ask mother if she is willing to learn and practice KMC. Make the environment socially acceptable to the mother for providing Kangaroo Care.
 - b. Counsel the mother regarding KMC and request her to sit or recline comfortably.
 - c. Counseling should include information benefits of KMC and its procedure.
 - d. Place the baby between the breasts of the mother in skin-to-skin contact in upright position.
 - e. Turn the head to one side to prevent airway obstruction. Slight extended position of the head facilitates eye contact with the mother.
 - f. Ensure that the abdomen of the baby is in close proximity to the epigastrium of the mother. Regular respiratory movements of mother prevent the occurrence of apnea.
 - g. The hips should be flexed and the bottom of the baby should be supported, in this way the baby clings to the mother in a frog like position.
 - h. Tie a belt or string at the belt level if required to prevent the baby from slipping down.
 - i. Encourage frequent breastfeeding.

II. Breastfeeding/assisted feeding

Objective: Upon completion of this session each participant

1. Should be able to advise mother on manual expression of breast milk.

2. Should be able to provide gavage feeds to the baby.
3. Should be able to provide katori spoon feeding to the baby.
4. Should be able to advise mother regarding therapy for retracted nipples.
5. Should be able to allay all fears and anxiety of a lactating mother regarding adequacy and superiority of breast milk.

Rationale: Advantages of breast milk are many fold and this mode of feeding is ideal for all neonates.

Equipment and Other Requirements:

1. Lactating mother
2. Katori/cup
3. Spoon/paladai
4. 6 Fr and 8 Fr feeding tubes
5. 10 ml and 5 ml syringes
6. Adhesive tape
7. Manikin
8. Blade

Skills:

1. Manual expression of breast milk
2. Gavage feeding
3. Katori spoon feeding
4. Treatment for retracted nipples

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

- a. Stress that good communication goes a long way in ensuring efficient management. It is well known that mothers voice their concerns and problems only when they have confidence that the health care providers have patience and are sympathetic.
- 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 the participants regarding Listening and Learning skills.

➤ Verbal Skills

- Ask open questions
- Use responses and gestures which show interest
- Reflect back on 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

☉ **Manual expression of breast milk**

1. Facilitator makes the environment socially acceptable to the mother.
2. Ensures that the mother has washed her hands and is sitting in a comfortable position with her breast well supported.
3. Uses a clean bowl for collection of expressed breast milk.
4. Demonstrates correct positioning of the thumb and the forefinger around areola. Positions mother's thumb and forefinger at the margin of areola on both sides and asks the mother to press the breast tissue into the rib case. At this stage asks mother to approximate the forefinger and thumb rather than sliding them over the breast towards the nipple. Asks mother to repeat the same three-four times till the milk starts flowing.

☉ **Gavage feeding**

Tube insertion:

1. Based on the weight and gestation of the baby select a 6 Fr or 8 Fr feeding tube.
2. Measure and mark length of the tube to be inserted.
3. Insert the tube from mouth.
4. Check position using a syringe and a stethoscope to auscultate the gush of air.
5. Tape the tube and close outer end after removing the syringe.

Gavage feeding:

1. Check the abdominal girth and compare with the previous reading.
2. If no increase or increase up to 2 cm, give feed.
3. If increase more than 2 cm, check residue and analyse the amount and content of the residue.
4. If milky and amount >50% – Omit feed for 24 hrs.
5. If milky and amount 30-50% – continue feed and no further increment for next 24 hrs.
6. If milky and amount < 30% – continue feed.
7. If altered color/hemorrhagic – Omit feed for 48 hrs.
8. Continue to evaluate abdominal girth prefeed if feeding, 4 hrly if feeds stopped.
9. While instilling the feed-use a 10 ml syringe barrel without the plunger and allow feed to trickle under gravity and do not push the feed.
10. Check abd girth at next feeding session and proceed to feed.
11. Indwelling feeding tube should be changed 24 hrly.

☉ **Katori spoon feeding**

1. Take baby in the lap, holds the baby semi upright with head well supported.
2. Stimulate the angle of the mouth and rests the spoon with 1-2 ml milk at the angle of the mouth.

3. Watch for swallowing as the milk is poured slowly.
4. Stroke gently behind the ear or on the sole.
5. Burp the baby.
6. Place baby in left lateral position with head supported a little higher than the rest of the body.

☉ **Treatment of retracted nipples**

1. Counsel mother and explain 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

1. Should be able to demonstrate steps of hand washing
2. Should be able to wear gloves with an aseptic technique before any invasive procedure
3. Should be aware about the choice of disinfectants for different equipment
4. Should be able to provide routine eyes and cord care and be able to advise mother regarding maternal and baby hygiene.

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

Equipment and other requirements:

1. Soap
2. Running water
3. Hand washing chart
4. Disposable delivery kit
5. Cord tie
6. Cord stump
7. Spirit
8. Sterile cotton
9. Sterile blade

10. Manikin
11. Disinfectant solution
12. Newborn care equipment

- Bag and mask
- Laryngoscope
- Thermometer
- Oxygen hood
- Skin probe
- Cots/mattresses
- Sheet
- Suction machine

Skills:

1. Hand Washing
2. Equipment disinfection
3. Eye and cord care

Procedures:

Facilitator should demonstrate the skills first and then make the following observations when the participants demonstrate these skills

1. Hand washing
 - a. Check Rubbing sequence, first palms and fingers, then back of hand, followed by thumbs, knuckles and finally rubs finger tips in the palms and lastly wrists.
 - b. Keeps elbows dependent and wash in the same order.
2. Wearing of gloves
3. Equipment disinfection
 - a. Resuscitation bag and mask
 - Disinfect daily and 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
 - b. 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
- c. 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.
 - d. Oxygen hood
 - Clean every day or after each use with detergent.
 - e. Cots and mattresses
 - Clean everyday with 3% phenol or 5% Lysol.
 - Replace mattresses whenever surface covering is broken.
 - f. 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.
 - g. Feeding utensils
 - Cup, spoon and paladai should be boiled for at least 15 min before use.
 - Feeding tubes should be preferably disposable.

4. Care of cord and eyes

Cord

- Keep cord dry
- Do not apply anything

Eyes

- No routine eye care is required. Do not use *kajal/surma*.

IV. Assessing CRT and Venous Access

Objective: Upon completion of this session each participant

1. Should be able to assess perfusion by using CRT method
2. Should be able to catheterize the umbilical vein
3. Should be able to demonstrate peripheral venous access on an improvised model.

Rationale:

Facilitator should emphasize on the importance of CRT and umbilical access

CRT:

1. CRT is a simple sign to assess perfusion (BP) of a baby.
2. A CRT of >3 seconds denotes poor peripheral perfusion.
3. This can also be prolonged in hypothermia due to peripheral vasoconstriction.
4. If the baby is hypothermic, first warm the baby and then reassess CRT after temperature improvement.

Umbilical Venous Access:

1. It is a quick IV access for infusing volume expanders and drugs during resuscitation.

Peripheral Venous Access:

2. IV access to provide parental fluids and medications

Equipment and Other Requirements:

1. Stop watch/wrist watch
2. Umbilical cord 1 ft.
3. Blade
4. Forceps
5. Normal saline
6. 2ml/5ml syringe
7. 5 Fr. Feeding tube or Umbilical Venous cannulation venous cannula
8. Straw, Splint, Tongue depressor

9. Polythene sheet
10. Spirit
11. Iodine
12. Gloves
13. Soap and Water
14. Sticking tape
15. Splint

Skills:

1. CRT assessment.
2. Umbilical Venous cannulation on a cord stump
3. Peripheral IV access on an improvised model
4. Performing lumbar puncture

Procedure:

1. 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

2. **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 Cannulation on the Stump Provided:

- Washes hands and 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 and 1 vein (is aware that vein is thin walled, patulous and has a large opening and arteries are thick walled and 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 umbilical vein.
- Pinches the catheter while removing after the requisite drug or fluid has been given.
- Presses the cord stump to prevent bleeding.

3. Intravenous 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.
- Ensures free flow, threads the needle further up.

- Secures in a way that would not displace with ease.
- Uses a splint if a joint needs to be stabilised.
- Check distal limb for adequacy of circulation and any venous congestion (participant has to appreciate any change in color after cannulation in real situations).

4. Lumbar Puncture and CSF Examination

Equipment needed:

- 22 to 24G spinal needle or 24G/26G needle, sterile bottles/tubes (at least 3 for collecting CSF), spirit swabs, povidone-iodine swabs, and dry cotton

Precautions:

- Obtain the specimen under strict aseptic precautions

Steps:

- Wear sterile gloves prior to the procedure
- Place the neonate in the lateral decubitus position or in the sitting position with legs straightened. One assistant should hold the infant firmly at the shoulders and buttocks. AVOID neck flexion while holding the baby
- Prepare the skin over the puncture site by cleansing the area:
 - i) First with a spirit (70% alcohol) swab; let it dry
 - ii) Clean with 10% Povidone iodine swab; let it dry
 - iii) Clean again with a fresh spirit (70% alcohol) swab

Note: Cleanse the area in vertical motion from above towards the anus.

Cover the cleaned area with sterile towels.

Insert the needle in the midline between the fourth (L4) and fifth (L5) lumbar spinous processes.

Use preferably a spinal needle; if not available use ordinary percutaneous needle

Gradually advance the needle in the direction of the umbilicus; withdraw the stylet (if using spinal needle) to detect the presence of spinal fluid

Collect CSF in three sterile bottles/tubes; if it is slightly blood stained, collect in one more bottle and discard the first sample; if grossly traumatic (blood-stained), abandon the procedure and repeat after 48 hours.

CSF examination:

Inspect the CSF for turbidity and color; it should normally be clear without any turbidity.

Use one of these tubes for examination under microscope; the other two samples are sent to the laboratory.

Parameter	Minimum volume needed	Procedure
Cell count - total and Differential	0.5 mL	Mix equal amount of CSF and red cell lysing fluid; load one drop of this fluid onto the Neubauer chamber; count the number of cells in the 4 WBC counting chambers. Multiply the number of cells to give the estimated number per mm ³
Glucose and protein	1.0 mL	Send the second sample to the laboratory for glucose and protein estimation. REMEMBER the samples have to be analyzed immediately
Culture	1-2* mL	Send the third tube to the Microbiology laboratory

Day 3

09.00–10.55 am

IV fluids, management of hypoglycemia and management of shock

- This session is conducted in 2 groups similar to Day 2.
- 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 sessions at end of the day.

Recap:

- At end of each chapter there is an evaluation. This is revision of the topics covered on day 2. This should be conducted as follows:
 - Limited time should be spent on this by facilitator as these topics were discussed in detail in the discussion sessions.
 - The idea of the evaluation is to reiterate the core message of the module to the participants especially for slow learners.
 - It also provides opportunity for the facilitator to evaluate informally the effectiveness of the teaching exercise.
 - Facilitator asks questions from the evaluation section one by one to the participants and discusses the answers.
 - 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:

- Identify babies who need IV fluids
- Calculate daily fluid intake
- Administer IV fluids with measured volume set/ infusion pump
- Monitor babies receiving IV fluids
- Adjust IV fluids with enteral feeding

1. Reading session 1.....10 min
 - a. Reading of
 - Babies requiring IV fluid therapy
 - Choice of fluids
 - Administration of IV fluid
 - Volume of IV fluids to be given
2. Group Discussion 1.....10 min
 - a. During the discussion make a group revision of all the values and numbers regarding fluid calculations with special emphasis on calculation of drop rate.
 - b. Highlight why fluid requirements of a preterm differ from a term, tell about extra water losses in a preterm, about different body water/kg in preterm
 - c. Stress on checking for presence of any particulate matter in the fluids.
 - d. Stress on errors while putting KCL. chances of over dosage and possible consequences.
3. Reading session 2.....10 min.

- a. Reading of
 - Monitoring of babies receiving IV fluids
 - Adjusting IV fluids with enteral feeding
4. Group discussion5 min.
 - a. Stress on Checking the IV site frequently.
 - b. Stress on daily weight record
 - c. Stress on urine output as guide to titrate the fluids
 - d. Watch for signs of over hydration
 - e. Should discuss when to stop IV fluids
5. Facilitator should conduct a Drill taking vivid case scenarios involving babies of different weight and different days of life (examples given in the module should be used)
6. Discussion of the evaluation questions at the end of the chapter10 min.

Answers:

Preterm neonate weighing 1.4 kg with breathing difficulty is brought to SNCU. 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)

Q2. 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 5 ml 2 hrly feeds of EBM. How will you adjust the IV fluid?

Day 4→125 ml/kg/d = 175 ml total fluid.

Feed = 5ml X 12 feeds = 60 ml

Iv fluids= total- feeds,→175-60 = 115 ml, given as ISO P @4.7 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 day 6 of life baby is receiving 12 ml of EBM every 2 hours. How will you adjust IV fluids?

Day 7→150 ml/kg/d = 210 ml total fluid.

Feed = 12ml X 12 feeds = 144 ml Baby is receiving 100ml/kg of enteral so I/V fluids can be stopped

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 BABY TOLERATES 12 ML 2 HRLY FEEDS.

B. Hypoglycemia

Learning objectives:

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

1. Identify babies at risk for hypoglycemia
2. Perform blood glucose estimation using dextrostix or glucometer (why 45 is taken as cut off)
3. Screen babies for hypoglycemia
4. Manage hypoglycemia (why glucose is checked after 30 mins of IV and 1 hr after feeds)
5. Reading session 1.....10 min.
 - a. Neonates at risk of Hypoglycemia
 - b. Technique of estimation of Blood sugar
 - c. Up to the end
6. Group Discussion 1.....5 min.
 - a. 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.

- b. Instead more time should be spent on enlisting the predisposing conditions and practical management of hypoglycemia.
 - c. Facilitator should highlight the significance of the ready reckoner charts given in the module.
 - d. 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.
7. Facilitator should conduct a Drill taking case scenarios involving babies of different weight and day of life and requirement of different GIR (examples given in the module should be used)
 8. Discussion of the evaluation questions at the end of the chapter10 min.

Answers

Q.1. A 2-day old weighing 2.0 kg is brought to SNCU with refusal to feed and hypothermia. His blood sugar by glucometer is 20 mg/dl. How will you manage this baby?

- ★ 4 ml 10 % dextrose IV (give through feeding tube if delay in iv access)
- ★ Start maintenance 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)
- ★ Check next sugar after 30 mt. if <45mgms% increase GIR to 8mgms/kg/min and repeat blood sugar after 30 mins, if > 45 mgms% ct GIR at 6mgms/kg/min and repeat blood sugar after one hr.
- ★ Try breastfeeds/spoon feeds
- ★ Maintain warmth
- ★ Monitor urine output

Q.2. After 2 hours baby's blood sugar is 36 mg/dl, how will you proceed?

- ★ Increase GIR by 2mgms/kg/min i.e. at 8mgms/kg/min Total fluid for day = 150ml (75 ml/kg/d) prepared as 49 ml/kg/d of 10 D and 26 ml/kg/d of 25 D {refer to charts}
- ★ Check next sugar after 30 mts if < 45mgms% increase GIR to 10 mg/kg/min, if >45mgms% ct at 10mgms/kg/min and repeat blood sugar after one hr.
- ★ Maintain warmth
- ★ Monitor urine output
- ★ Check weight daily

Q.3. After 12 hours baby's blood sugar is 56 mg/dl, baby is active with normal body temperature. How will you proceed?

- ★ Try feeds – Breast or katori/spoon/paladai
- ★ Continue dextrose monitoring 12 hrly
- ★ Taper dextrose infusion over next 24-48 hrs in steps of 2mgms/kg/min
- ★ Maintain warmth
- ★ Monitor urine output
- ★ Check weight daily

Q.4. How will you monitor this baby whose blood sugar has returned to normal ?

- ★ Continue feeds and promote BF's
- ★ Taper IV infusion over 48 hrs
- ★ Check sugar 12 hrly till baby is on IV fluids
- ★ When baby is off IV check blood sugar every 12 hours for 24 hrs
- ★ Discharge planning with feeding advice

C. Shock

Learning objectives:

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

1. Identify shock
2. Elicit CFT assessment
3. Enumerate the different causes of shock in neonates

4. Perform fluid resuscitation
5. Use vasopressors and be able to calculate their doses
6. Reading session 1..... 10 min.
 - Whole chapter except how to give Dopamine
7. 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 vasopressors/steroids
 - end points in treatment
8. Reading session 2.....5 min.
 - How to give Dopamine
9. Group Discussion 2.....10 min.
 - Exercise on dose calculation of dopamine
10. Discussion of the Evaluation10 min.

Answers:

A 7 days old baby Nazira 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?

- ★ Maintain Temperature
- ★ Maintain airway and Provide Oxygen
- ★ Take baseline vitals- especially HR and CFT

- ★ IV access and check sugar –give 10 D bolus if sugar < 45.
- ★ Start infusion of 20 ml NS over 20 mts and reassess HR and CFT
- ★ If no improvement repeat the same and reassess
- ★ Obtain a sepsis screen
- ★ Monitor urine out put
- ★ Do a dextrose charting 4-6 hrly

Q4. After giving 2 fluid challenges, CRT is still 4 seconds with HR of 170 bpm. How will you proceed?

- ★ Start Dopamine @ 10 mcg/kg/mt
- ★ Calculate as $10\text{mcg} \times 2\text{kg} \times 60\text{mt} \times 24 = 28,800\text{ mcg} = 28.8\text{ mg}$ 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)
- ★ Continue to monitor HR and CFT along with other parameters as before
- ★ Start maintenance IV fluids
- ★ Start Empirical Antibiotics (will be discussed in other sessions)
- ★ If needed, escalate Dopamine to 20 mcg/kg/hr and add Dobutamine if required as discussed in module.

Facilitator to discuss use of Vasopressors....5 min

1. Should emphasize that addition of vasopressors alone without fluid replacement is 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 not 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
3. Discuss Dobutamine, its action and dose
4. Discuss Adrenaline

11.15 am–12.00 noon

Post-asphyxia management

Learning objectives:

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

1. List and manage the anticipated problems in a case of asphyxiated neonate
2. Recognize poor prognostic factors in asphyxia
3. Reading session 1.....15 min.
 - Clinical presentation
 - Initial stabilization and management
4. Group Discussion 1.....15 min.
 - Emphasis on special needs of asphyxiated babies
5. Reading session 2.....10 min.
 - Monitoring
 - Poor prognostic factors
 - Prevention of asphyxia
6. Evaluation 5 min.

Stress that there is no role of steroids, frusemide or mannitol in managing asphyxiated neonates as these drugs impair further brain development and cause serious fluid and electrolyte imbalance. Sodium bicarbonate is of no use in management of asphyxiated neonate, moreover the acid base disturbance caused by its use can lead to hypocalcemia, hypokalemia and hypoxia increasing the brain damage.

Answers

- ★ Baby has suffered severe birth asphyxia, so initial stabilization will require maintaining TABC which will be in the form of warmer care, positioning the airway and keeping it clear, oxygen by head box to maintain a SpO₂ between 90-94%, I/V fluids 10% dextrose 60ml/kg in 24 hrs. Do a blood glucose and serum calcium and treat if low. Give Vit. K. Monitor the baby for vitals, B.P urine output etc. (monitoring chart). Treat seizures SOS.

- ★ If there is no abdominal distension and the baby has passed meconium and bowel sounds are present start oral feeds EBM 30ml/kg/hr by OG tube or if sucking is good by paladai.
- ★ Since the baby suffered SBA and was in HIE grade 2, the parents should be counselled about the effect this could have on the baby's brain and other organs and the importance of follow up for monitoring growth and development.

12.00–12.35 pm

Neonatal seizures

Learning objectives:

The participants after completing this module should be able to:

1. Identify neonatal seizures and differentiate them from jitters and tetanic spasms
2. Enumerate causes of neonatal seizures
3. Manage neonatal seizures
4. Wean ACDs and plan a Follow-up
5. Reading session 1.....10 min.
 - Common types of neonatal seizures
 - Features of spasms due to tetanus
 - Diagnostic approach and treatment
6. Group Discussion 1.....5 min.
 - Elaborate upon how neonatal seizures differ from tetanic spasms and jitteriness
7. Reading session 2.....5 min.
 - Step wise treatment of neonatal seizures
8. Group discussion 25 min

Revise all the drug doses of ACTs

Go through the steps of the flow diagram for management of a neonate with seizures.

Emphasize the importance of Hypocalcemia as a cause of seizures in neonates.

9. Discussion of the Evaluation5 min.

Answers:

- ★ Probable cause can be hypoglycemia/ meningitis Maintain TABC, do a blood sugar
- ★ Give a bolus of 6 ml of 10% dextrose and start a drip of glucose @ 6mgs/kg/min. if the convulsions stop, repeat a blood dextrose reading after 1/2 hour.
- ★ Inj. Phenobarb 60mgs diluted as an infusion with an infusion pump over 20mins @1mg/kg/min
- ★ STOP Phenobarb and observe the baby. No maintenance required
 - Video on Neonatal Seizures.....3 min.
 - Demo of Inj. Phenobarb and Phenytoin.

12.35–2:00 pm

Respiratory distress in newborn

Learning objectives

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

1. Diagnose common causes of respiratory distress in Term and Preterm newborns
2. Identify babies with respiratory distress and assess severity of respiratory distress
3. Deliver oxygen and manage babies with respiratory distress
4. Monitor babies on oxygen therapy
5. Reading session 1.....15 min.
 - Common causes of respiratory distress
 - Approach to respiratory distress
 - Assessment of severity of respiratory distress
 - Initial stabilization and management
6. Group Discussion 1.....20 min.
 - Clarify on terms like Respiratory distress syndrome vs Respiratory distress per se vs TTNB and different scenarios of each of them
7. Reading session 2.....15 min.
 - Highlight the importance of scoring systems – to remove subjective biases in assessment and to have a uniform protocol management of cases in different SNCUs.
 - Investigations
 - Management
8. Group Discussion 2.....15 min.
 - Highlight that a CXR may not show any findings in all cases of respiratory distress.
 - Emphasize general care including that of fluids, hypoglycemia and hypoglycemia prevention in all cases of respiratory distress.
 - Emphasis should be laid on frequent monitoring till the child is oxygen dependent.
 - It may be 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 users are confused regarding which modality to start with.
 - Although nasal prongs/catheter can deliver some CPAP, the module has not discussed CPAP concept hence discussion on this should be avoided.
 - Facilitator should clearly spell out the criteria of starting and stopping oxygen.
9. Evaluation.....15 min.

Answers:**A**

- ★ Impending Respiratory Failure, Pneumonia
 - ★ Maintain temperature under warmer
- Position, clear airway if required
- Oxygen with nasal prongs at 1–2 lit/min
- Attach Pulse oximeter
- Take sepsis screen
- Order urgent bedside X ray
- Start I/v IsoP 2.8 *150 = 420ml/24 hrs, 17 – 18 ml/hr or 17micro drops/min.

★ By Nasal Prongs/Head box

By measuring SpO₂ by pulse oximeter and maintaining it between 90-94%

B. RDS or Hyaline membrane disease

C. Supportive Maintain TABC

Specific Monitor and record the baby's respiratory rate, presence of chest in drawing or grunting on expiration (Table 8.1), and episodes of apnea every hour until the baby no longer requires oxygen and then every 2 – 4 hrly for an additional 24 hours. Do a blood glucose and treat hypoglycemia if required. Monitor the baby's response to oxygen by oxygen saturations. Insert an oro-gastric tube to empty the stomach of air and secretions. After taking a sepsis screen including blood culture start antibiotics (Refer to chapter on sepsis).

IV Ampicillin and Gentamicin.

D. Supportive Maintain TABC

Monitor and record the baby's respiratory rate, presence of chest in drawing or grunting on expiration (Table 8.1), and episodes of apnea every hour until the baby no longer requires oxygen and then every 2 – 4 hrly for an additional 24 hours.

Monitor the baby's response to oxygen by oxygen saturations.

Insert an oro-gastric tube to empty the stomach of air and secretions.

After taking a sepsis screen including blood culture start antibiotics. (Refer to chapter on sepsis) IV Ampicillin and Gentamicin.

Management of apnea: Maintain temperature.

Provide tactile stimulation/if apnea persists give PPV.

Check blood glucose.

Preterm neonates may be given Caffeine citrate/aminophylline if recurrent apneic spells.

- IV Aminophylline can be given in a dose of 5-6mg/kg as loading dose followed by 1- 2mg/kg/dose 8hrly as maintenance.

Give Aminophylline orally once baby is on oral feeds. (Increase dose by 25%).

- Caffeine citrate available as oral or IV preparation can be given in a dose of 20mg/kg as loading dose (1ml = 20mg) (base 10 mg/kg). Start maintenance 5 mg/kg (base 2.5mg/kg) once a day, 24 hrs after loading dose. If apneic spells persist dose may be increased to 10mg/kg/day.
- Neonates with recurrent apneic spells may require CPAP or mechanical ventilation.

★ Nasal prongs at 1-2 lit/min, 90 – 92%

- Video 5 mins

LUNCH

2.00-2.45 pm

2.45–3.30 pm

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 photo therapy based on recommended guidelines
5. Assess a neonate with conjugated hyperbilirubinemia.
6. Reading session 1.....10 min.
 - Physiological jaundice
 - Causes of jaundice
 - Approach to a jaundiced baby
 - ... upto drill on use of charts.
7. Group Discussion 1.....10 min.
 - Facilitator should emphasize on participants understanding the difference

between physiological and pathological jaundice

- Facilitator should clearly bring out the start and stop points for photo therapy

8. Reading session 2.....10 min.

- Rest of Module

9. Group Discussion and Drill on how to use the table.....10 min.

- He should discuss the normal things that happen when a baby is put under phototherapy
- He should make participants learn how to plot the hour specific charts

10. Evaluation.....5 min.

Answers:

- ★ Blood group incompatibility. Take a detailed history regarding mothers blood group, birth order and treatment given to previous baby. Do the following investigations Hb, Retic count, P/S for hemolysis, mother and baby's blood group and TSB. Plot the TSB on the nomogram and decide regarding phototherapy/exchange.
- ★ 18 – 20 mgs/dl. Start intensive PT and review for DVET after reports are available.
- ★ a. No/No
- b. No/No
- c. No/No
- d. No/No
- e. Yes/Yes
- f. Yes/Yes

3:30–5:30 pm

Equipment demonstration (hospital visit)

Equipment demonstration

The facilitator should take the participants to the SNCU for demonstration of the equipment, in 4 groups (30 mins each group)

Following equipment should be demonstrated:

Group 1:

- Radiant warmer
 - Discuss the importance of keeping the probe attached to baby
- Weighing scale
 - Discuss the importance of zeroing the machine

Group 2:

- Phototherapy unit
- Suction machine
 - Importance of limiting the highest pressure to 100 mm Hg

Group 3:

- O² Sources and O² Delivery systems

Group 4:

- Pulse oximeter
- Infusion pump
- Burette sets

(Refer to Module for details on Equipment Demonstration)

Day 4

08.45–09.15 am

Emergency triage assessment and treatment

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

1. Triage neonates at health facility for appropriate management
2. Assess temperature and manage temperature instability
3. Assess airway and breathing and manage the same
4. Assess circulation and manage shock
5. Assess for convulsions and coma and manage the same
6. Reading session 1.....10 min.
Reading of
 - a. From start of module
 - b. Upto (including) Assessment of emergency and priority signs
7. Group Discussion 1.....5 min.
8. Reading session 2.....5 min.
Reading of
 - a. From...Chart 2: Flow diagram for Triaging Sick Neonates
 - b. Till end of the module (leaving the evaluation)
9. Discussion and evaluation questions given at end of the chapter.....10 min.

Answers:

- ★ Priority Cold stress. Admit SNCU KMC/Warmer care, do blood glucose treat if low, Give inj. Vit.K 1mg I/m if not given earlier. Reassess for signs of sepsis after temperature is maintained
- ★ Emergency because of RR > 70/min and shock TABC maintain temperature under radiant warmer, Position and clear airway if required, give oxygen with head box/ prongs, Attach pulse oximeter, Get I/V access, do blood glucose, give fluid bolus 26ml of normal saline over 20 mins, take sepsis screen and give ampicillin and gentamicin, reassess after bolus repeat bolus if CFT is > 3 secs.
- ★ Emergency as baby is convulsing. Keep under warmer, manage air way, check and correct Hypoglycemia if convulsions persist give calcium 2 ml/kg diluted 1:1 under cardiac monitoring, if convulsions still persist give Inj. Phenobarbital 76 mgs with infusion pump diluted slowly@4mgs/min, reassess after 20 mins.
- ★ Non urgent assess and advice.

09.15–10.45 am

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
7. Reading session 1.....15 min.
 - Etiology, Early and Late onset sepsis
 - Clinical features
 - Diagnosis
8. Group Discussion 1.....15 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
9. Reading session 2.....15 min.
 - Treatment
 - Supportive care
 - Antibiotic therapy
 - Prevention of infections
10. Group Discussion 2.....10 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 acquainting the participants with the

recommendations 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 infections

11. Drills:10 min

- 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 be 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 splashes→ 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 paladai→boil for at least 15 min, just before use
- How to disinfect Feeding tubes→should be disposable only. DO NOT RE USE.
- What is the difference between Disinfection and Sterilisation. →
 - Disinfection is killing of the live micro-organism and this can be achieved by **20 minutes** contact period with 2% Gluteraledhyde.

- 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 remain active?→for 14 days.

12. EVALUATION Discussion of the Evaluation.....10 min.

Answers:

- ★ 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
 - e. TLC 22800/cu mm, CRP Positive, ANC 2020, IT ratio .10, uESr 12 mms→-ve
 - f. TLC 2300/cu mm, CRP Positive, ANC 1870, IT ratio NA, uESr 12 mms→+ve
- ★ Write treatment orders for a 2000 gm 9 days old baby diagnosed to have sepsis today.
 - a. Provide warmth
 - b. Estb IV access – take samples for sepsis screen and check dextrose
 - c. Give 4 ml 10D if RBS<45
 - d. Inj Vit K 1 mg im single dose
 - e. Maintenance Iso-p 300 ml/24 hr→@ 12.5 ml/hr(12-13 microdrop/mt) {feeds if hemodynamically stable}
 - f. Inj Ampicillin 100 mg iv 8hrly
 - g. Inj Gentamycin 10 mg iv 24 hrly
 - h. Monitor vitals 2 hrly (RR, HR, CFT, SPO₂, temp)
 - i. Monitor urine output
 - j. Monitor dextrose 4 hrly
 - k. Watch for respiratory distress/cyanosis

- ★ Meningitis. Take a sepsis screen, and do a Lumbar puncture for CSF examination. Maintain T (hydrotherapy) ABC, do a blood glucose and treat if low, and start IV fluids Iso P, give Cefotaxime 50mg/kg/dose 12 – 8 hrly according to age and inj. Amikacin 15mg/kg/dose once a day. Monitor vitals and start breast feeds as soon as the baby accepts.
- ★ The baby has GE with septicemia and shock. Maintain TABC, warmer care, Oxygen with head box, get an I/V access, do a blood glucose and treat if low, take a sepsis screen give bolus of NS 21ml over 20 mins and first dose of ampi and genta. Reassess after first bolus and give another bolus if CFT is > 3 secs, Monitor vitals and urine output.

➤ 12 Minute Video.....15 min

TEA

10.45-11.00 am

11.00–11.30 am

Anemia and bleeding in neonate

Learning objectives:

The participant after completing this module should be able to

1. Assess and identify the causes of anemia and bleeding
2. Provide guidelines for blood transfusion
3. Reading session 1.....7 min
Up to causes of anemia
Group discussion on causes of anemia
4. Reading session 2.....8 min
Up to Prevention of late onset anemia
Group discussion on approach to anemia and indications of BT.....5 min
5. Reading session 3.....5 min
Bleeding Neonate
6. Discuss evaluation questions.....5 min

Answers:

- ★ Get IV access, take samples for Hb, blood grouping and cross matching (mother and baby) NS 10ml/kg over 20 mins and reassess, monitor vitals, arrange blood and give 15–20 ml/ kg over 3–4 hrs. Maintain blood transfusion chart.
- ★ Continue supportive care, feeding and add iron at 2 mgms/kg/day.
- ★ Besides supportive care and specific care give blood transfusion cross matched with mother and baby 15ml–20 ml/kg over 3–4 hours, monitor vitals and maintain a BT chart.
- ★ Probably Vit. K deficiency. Maintain TABC and give Inj.Vit.K 1mgI/V stat.

11.30–12.00 noon

Neonatal transport

Learning objectives:

After completion of this module the participant should be able to

1. Identify type of transfer and babies who need referral
2. Prepare and organize referral
3. Provide counseling and family support
4. Provide pre-referral stabilization and enroute care
5. Documentation and handover
6. Reading session 1.....10 min.
Reading of
 - a. Indications of transfer from community to SNCU...
 - b. Up to Documentation and handover
7. Group Discussion 1.....5 min.

Facilitator should stress on the need for good communication and rapport with the family. For the same the caregiver should acquaint himself with the educational status, economic status and

the family support system. Caregiver should counsel the family for the following:

- a. Reason for need of transfer – non-availability of higher facilities in SNCU
- b. What are the likely events if the treatment is continued at the SNCU
- c. What are the likely events during transport
- d. What are the available means of transport
- e. What is the approximate of transport costs
- f. What is the approximate time taken for transport
- g. What care or treatment is likely to be instituted at tertiary level
- h. What is the likely management after going to tertiary level

9. Reading session 2.....5 min.
Till the end

10. Group discussion 2.....5 min.
Highlight the importance of KMC during the transport

Importance of educating the primary care giver towards the needs of infant during transport.

Discussion the evaluation questions given at end of the chapter.....5 min.

Answers:

- ★ Prepare for transport by
 - a. **Communication** explaining the condition of the baby, what TEF is and why the baby needs to go urgently, where the baby has to be taken and also inform the hospital where the baby will be taken.
 - b. Tell the parents that Asha will accompany them and that mother must go along with the baby.
 - c. A fully equipped vehicle will take the baby, Baby may need suction, positive pressure ventilation and provision to provide the baby with this should be there in the vehicle.
 - d. Counselling the family regarding the baby's

condition and danger during transportation should be explained.

- e. Consent form should be explained and signatures of caretaker taken.
- f. During transport take care of TOPS provide warmth (KMC/incubator), oxygen by head box/ prongs through a cylinder, IV fluids and maintain blood sugar .

★ Referral note for B.Veena Annexure 12

12.00–12.45 pm

Follow-up of high risk newborn

Learning objectives:

After completion of this chapter the participant should know:

1. Which babies need follow up (Identify at risk newborn)
2. Where should the SNCU graduate be followed up
3. Who should do the follow-up
4. How to use the 'Follow-up protocol'
5. Reading session 1.....25 min.
6. Discussion.....20 min.

Facilitator should stress the need for follow up of all SNCU graduates and early intervention.

12.45–02.00 pm

Newborn checklist, case sheets, recording formats and online software

Facilitator discusses the Newborn check list with the participants. He tries to make a two way conversation. 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.

Facilitator should promote the use of these objective case sheets in place of free notes. This will help to capture complete information and serve as a reminder for the care giver. SNCUs are going to be equipped with computers, where they will be required to fill data in a customized format. These case sheets will help them to enter the data online. Refer to annexure 22.

LUNCH

2.00-2.30 pm

02.30–03.30 pm

Case Studies

The facilitator should inform the participants that they are now going to discuss case scenarios in the classroom. He/she should instruct them to manage the case described under the principles of 'TABC FM FM CF'. The participants are told to open case study one and read the case scenario aloud. The facilitator should now take turns and ask the participants one by one to manage the case by starting with taking care of the temperature followed by airway, breathing, circulation and so on. It must be emphasized that even if the case is of hyperbilirubinemia or seizure the treatment starts with maintaining and ensuring TABC. After the first case has been managed successfully the facilitator congratulates the group and proceeds to discuss case 2 and 3 in a similar manner.

Case Study – 1

A three-days old term baby with a birth weight of 3200 gm is brought to the casualty in the hospital with yellow palms and soles. The child has a temperature of 36.2°C. The respiratory rate is 52/min. The CRT is 2 sec.

At the Hospital:

Serum Bilirubin – 24 mg/dl

Mother's Blood Group – B Negative

Baby's Blood Group – B Positive

Question:

Q1.: How would you triage this neonate?

Q2.: How would you initiate management of this baby?

Answers:

A1.: Priority Cold stress, yellow palms and soles

A2.: T Provide warmth

A Maintained

B Normal

C Normal
F Breastfeeds
M Start Phototherapy, Do Hct, reticulocyte count, S.Bil after 6 hrs
F Breastfeeds
M Temperature, Serial Serum bilirubin
C Communicate the infant's condition to the parents and discuss exchange transfusion and need for referral
F Not applicable

Case Study – 2

A seven 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 baby is lethargic, temperature is 36°C, respiratory rate is 80/min with moderate retractions and grunt but no cyanosis, the H.R. is 150/min, CFT is <3secs.

Question:

Q1.: How would you triage this neonate?

Q2.: How would you manage this baby?

Answers:

A1.: Triage Emergency

A2.: T Provide warmth

A Maintained

B Provide oxygen

C Assess CFT

F Start fluids at 150 ml/kg isolyte – p,

M Do blood sugar and sepsis screen and Start Ampicillin and Gentamycin

F Withhold feeds till more stable

M May start MEN

C Communicate the infant's condition to parents from time-to-time and discuss referral if need for mechanical ventilation arises

F Not applicable

Case Study – 3

Baby Roma, a 35 weeks gestation baby weighing 2550 gms at birth was feeding well at the breast and on day 5 developed discharge from the umbilicus followed by 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 - 2400 gm

Temperature- 37°C

Clinical exam- Drowsy

RR - 56/min, no retractions, no grunt

CFT - 5 secs.

Abdominal distention and poor bowel sound with a normal fontanel

Question:

Q1.: What is your diagnosis?

Q2.: How will you manage this baby?

Answers:

A1.: Diagnosis: Single/Preterm/35 weeks/2550 gms/AGA/Male/Septicemic shock with ileus? Meningitis

- A2.:**
- T Provide warmth
 - A Maintained
 - B Provide oxygen.
Maintain SpO₂ between 90-94%
 - 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 sepsis screen and lumbar puncture and start Amikacin and Gentamicin change to antimeningitic treatment after reviewing CSF report.
- F Withhold feeds till more stable
- M Temperature, respiratory score, oxygen saturation (monitoring chart) RTA 6 hrly, Abdominal girth 2 hrly
- C Communicate the infants condition to parents from time-to-time and discuss referral if need for mechanical ventilation arises/uncontrolled convulsions
- F Give follow up advice

3.30–5.15 pm

Clinical case presentation and discussion

5.15 pm onwards

Post test and Valedictory



Assessment

Facility Based Newborn Care-Clinical Case Presentation and Discussion

The facilitator instructs the participants that they will be escorted to the SNCU and will be allotted one case each to 4 participants. The four participants need to work in close coordination to a) Take the history from the mother b) Document the findings in the Case sheet template discussed in the previous session. C) Examine the baby after due aseptic precautions and d) manage the case.

Although the group works in close coordination, one person will take responsibility for one task i.e. one for a, another for b and so on for c and d.

The facilitator ensures availability of at least 6 babies with common ailments like prematurity, respiratory distress, neonatal hyperbilirubinemia, asphyxiated neonate, sepsis and growing preterm. He also needs to coordinate with the organisers to ensure availability of mothers of the babies allotted to participants in the SNCU.

Each group is allowed 30 minutes for the preparation and then the facilitator asks them to present the case. The case is discussed by the facilitator to ensure that the relevant history has been taken and documented, baby has been examined and the baby is managed as per TABC FM FM CF.

Pretest/Posttest

Q 1. Enumerate mechanisms of heat loss in neonates.

- | | |
|----|----|
| a) | b) |
| c) | d) |

Q 2. Describe the four points of good attachment of the baby at the breast.

Q 3. Enumerate factors enhancing Oxytocin reflex.

Q 4. Define Low birth weight. What proportion of babies is LBW in our country?

Q 5. Enumerate 4 physical features that can help differentiate a preterm from a term LBW.

Q 6. Mention the fluid requirement of a 1500 gm baby on D6 of life?

Q 7. What is the level of jaundice if the baby has yellow palms and soles.

Q 8. Enumerate the characteristics of physiological jaundice.

Q 9. How do you assess the CRT and how do you interpret the capillary refill time?

Q 10. What are the steps of initial management of a neonate with shock?

Q 11. Write management of seizures in an asphyxiated neonate

Q 12. A 7 day old baby born at term with a birth weight of 2.8 kg is brought with complaints of difficulty in breathing and inability to feed at the breast. His respiratory rate is 96/min with moderate retractions, grunting and central cyanosis. What is your assessment of the respiratory status of this baby?

Q 13. 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 14. A 2 day old baby weighing 2.0 kg is brought to SNCU with refusal to feed and with a temperature record of 36.1°C. His blood sugar by glucometer is 20 mg/dl. How will you manage this baby?

Q 15. Write treatment orders for a 2000 gm 9 days old baby diagnosed to have sepsis today.

Valedictory:

Facilitator takes this opportunity to thank the participants for their attention and interest.

He hopes that the workshop will be beneficial 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 NRHM staff, UNICEF state staff, CMO, and other faculty who have directly or indirectly contributed to the success of the work shop.

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In collaboration with:



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