सत्यमेव जयते

NATIONAL HEALTH MISSION
राष्ट्रीय स्वास्थ्य मिशन

CHILD HEALTH DIVISION

Ministry of Health and Family Welfare

Government of India

NEWBORN STABILIZATION UNIT TRAINING FACILITATORS' GUIDE

2020

सबका साथ, सबका विकास, सबका विश्वास
Sabka Saath, Sabka Vikas, Sabka Vishwas

सत्यमेव जयते

डॉ हर्ष वर्धन
Dr Harsh Vardhan

स्वास्थ्य एवं परिवार कल्याण, विज्ञान और प्रौद्योगिकी व पृथ्वी विज्ञान मंत्री, भारत सरकार

Union Minister for Health & Family Welfare, Science & Technology and Earth Sciences Government of India

MESSAGE

It gives me immense pleasure to commemorate the National Newborn Week from 15th to 21st November, 2020 and launch the training module on "Newborn Stabilization Units (NBSUs)" for optimal management of newborn care at First Referral Units (FRU).

The health of children including newborns continues to be of highest priority to our Government. We are committed to reducing Neonatal Mortality Rate to single digit by the year 2030 - a target which has been much appreciated globally and is more ambitious than the targets set under Sustainable Development Goals.

I am also happy to note that to provide quality services to newborns at FRUs, my Ministry has developed a training module for NBSUs. I am sure this will help doctors and nurses to acquire essential knowledge and skills for optimal care of neonates thereby improving health status of newborns.

I wish all the best and hope this module will work as a good resource for capacity building of our healthcare personnel.

(Dr. Harsh Vardhan)

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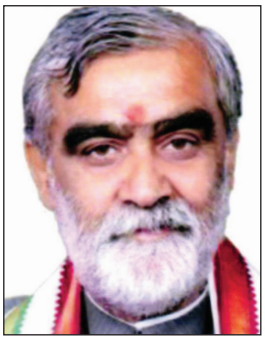

MESSAGE

The Ministry of Health and Family Welfare, Govt. of India has implemented a number of policies and programmes aimed at ensuring universal access to health coverage and reducing child and neonatal mortality.

Under the umbrella of RMNCAH+N strategy in National Health Mission, Child Health have always been of high priority. In 2014, the Government of India launched the India Newborn Action Plan (INAP) in order to intensify the efforts towards improving newborn health. INAP has successfully brought a sharper focus on implementation of the existing and new initiatives for the newborns both for their survival and subsequent growth and development.

To fulfill the role of providing quality service for newborn care in the health facilities, Ministry of Health and Family Welfare, Government of India has developed training packages for Newborn Stabilization Units. Capacity building of the service providers are of utmost importance as newborn care and survival necessitate knowledge and skills of high order in the providers.

I would like to express my heartfelt appreciation to all those who contributed to the preparation of these documents. I am sure that these packages will help in delivering newborn health services with quality care, all across the country.

(Ashwini Kumar Choubey)

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MESSAGE

Childhood and infant mortality in India has reduced substantially during the last decade, but the rate of neonatal mortality continues to remains high. Nearly two-thirds of infant deaths each year occur within the first four weeks of life and about two-thirds of these occur within the first week itself. Thus, the first few days and weeks of life are extremely critical for survival of a child. Therefore, newborns must be provided special attention during their birth for a healthy and safe start to life.

India Newborn Action Plan envisages that the country will make all possible endeavors and attain the target of single digit newborn mortality by 2030, a target which is more ambitious than even the corresponding global SDG target. Effective and quality Newborn care is a critical challenge faced by every health care setting dealing in child birth and child care. Building capacities of Doctors, Nurses and ANMs to improve quality of services in low resource settings remains a challenge but is urgently required for our country.

Newborn Stabilization Units (NBSUs) are an important part of the facility based newborn care at the first referral units to provide basic stabilization and feeding support to babies delivered at the facility and to sick and small babies referred to the facilities from outside. The NBSU training package has been developed with an aim to empower the health care providers with essential knowledge and skills for optimal management of any newborn presenting at NBSU. This aims to bring about the desired changes in quality of services at these units established at the sub district level.

I am sure that the NBSU training package will act as an enabling tool for health care providers. Functionalization of the NBSUs will result in effective utilization of resources and contribute in a significant way to reduce preventable mortality in the country.

(Rajesh Bhushan)

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PREFACE

A healthy start to life is vital for establishing the foundation of a healthy nation. During the last one and half decades, India has made concerted efforts towards improvement of maternal and child health and has achieved significant reduction in the maternal and child mortality. With significant gains in child mortality reduction, the contribution of newborn mortality to child mortality has increased despite a decline in absolute number of neonatal deaths. This points to an urgent need to accelerate efforts to improve newborn health.

As a part of the Reproductive, Maternal, Newborn, Child, Adolescent Health and Nutrition (RMNCAH+N) strategy of the National Health Mission, newborn health has always been at priority. A well-defined multi level care system for newborn care at public health facilities has been scaled up massively and is supported by community level interventions. Health systems strengthening over the last 15 years has brought about considerable improvement in the infrastructure, availability of human resources, availability of drugs & equipment along with ancillary services.

Under facility based newborn care, "Newborn Stabilization Units" at the first referral units have been part of the care system since 2011. However, these units continue to remain underutilized, one of the main reasons being the lack of confidence and poor skills of healthcare providers working in these units. As a part of the strategy to revitalize these units, a new "NBSU Training Package" for both doctors and nurses has been developed by the Child Health Division, GoI with technical support from the Norway India Partnership Initiative (NIPI), technical experts and other development partners. I do hope that this new package will be rolled out across the States and UTs to reinvigorate the facility based newborn care system and pave way towards strengthening of timely and quality care for the newborns, closer to their homes.

(Vandana Gurnani)

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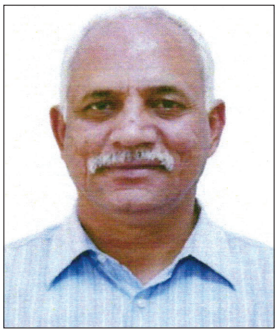

FOREWORD

With the National Health Policy-2017 and the India Newborn Action Plan, India is committed to accelerate reduction in the newborn deaths by more than half, by the year 2030. Newborn health occupies the centre-stage in the Reproductive, Maternal, Newborn, Child Health, Adolescent Health and Nutrition (RMNCAH+N) strategy and inter linkages between various components have a significant impact on the mortality and morbidity rates of a newborn.

Under the National Health Mission, newer interventions and improved service delivery platforms have been included in the newborn health programme over a period of time. This mandates a review of existing training packages and strategies in order to incorporate these new topics and skills sets emerging out of new evidences and technological advances which will work towards improving the quality of care at the health facilities.

With this background, the Child Health Division along with the support of technical experts and development partners including NIPI, has developed a "NBSU Training Package" for training of doctors and nurses working in the Newborn Stabilization Units (NBSU). Until now, the Facility Based IMNCI package was being used for this purpose. This new package equips both doctors and nurses to deliver interventions for management and stabilization of small and sick newborns. It is further envisioned that these units will play a key role in scaling up Kangaroo Mother Care Services, one of the most effective interventions , to save lives of preterm and low birth weight babies.

I do hope that by adopting this training package, a large number of babies will receive quality care at the sub district level thus preventing referral and overburdening of district level facilities, resulting in improvement of neonatal survival to a great extent.

18/11/2020

(Dr. Manohar Agnani)

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ACKNOWLEDGEMENT

India witnessed a consistent and sharp decline in maternal and child mortality in comparison to global averages since the inception of National Health Mission (NHM). India's newborn mortality has reduced by more than one-third in the last decade. With the National Health Policy 2017 in place and with sight on the Sustainable Development Goal agenda, the opportunity now is to build upon the gains made in the last decade, accelerate and sustain the pace of improvement.

In order to scale up the implementation of the facility based newborn care programme, at New Born Stabilization Units (NBSUs) at sub district level, it was a felt need that a training package should be designed exclusively for training of the health care providers to deliver full set of services at the NBSUs. Accordingly, the Child Health Division along with the technical support from the Norway India Partnership team has developed the "NBSU Training Package" for doctors and nurses to equip them with the necessary technical knowledge and skills for provision of quality care to small and sick newborns in these units.

I sincerely thank my colleagues Dr. Ajay Khera, Ex-Commissioner MCH & Dr. P. K. Prabhakar, Ex- JC, Child Health, for starting the process. I specially acknowledge the efforts of Dr. Harish Kumar, Dr. Harish Chellani, Dr. Renu Srivastava, Dr. Deepti Agrawal and NIPI team for their assistance in the development of this package.This was an intensive process that required a lot of brainstorming and deliberations. I would therefore take this opportunity to thank all the academicians, technical experts from NCC, State Programme officers, Child Health Division officers and consultants who participated in the discussions and shared their valuable experiences and suggestions.

As a next step, I will urge the State / UTs, to roll out this package at the earliest. Concerted, consistent efforts of all concerned stakeholders are solicited for achieving significant decrease in neonatal mortality.

(Dr. Sumita Ghosh)

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NOTES FOR THE FACILITATOR

This guide is intended to prepare and assist facilitators to conduct the training programme for service providers (doctors & nurses) involved in the care of sick and small newborns at the Newborn Stabilization Units. This guide provides a detailed outline of sessions, tips and examples that will help the facilitators to deliver the course material in a standardized way. The facilitator should familiarize themselves with the content and activity flow in advance, so as to develop a sense of ownership and confidence and to present it effectively. At the same time, they should feel free to add personal touch and experiences.

Prerequisites of a Facilitator

A facilitator helps the participants to learn the skills that are included in the training package. 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. The facilitator should be equipped to impart online training if the need arises.

As a facilitator, ensure that each participant understands how to work through the materials and explain, demonstrate, answer questions, discuss with participants 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 training. Facilitators can share examples from their own experience and ask participants for examples from their experience.

Use of training manual & training package

A Training Manual for Facility based care of small and sick newborns at Newborn Stabilization Unit (NBSU), has the basic information needed to manage sick and small newborns at the NBSU. Following this training each participant develops specific skills necessary for preferable stabilization and management of sick neonates in NBSUs by practicing at the skill stations followed by real clinical setting in an existing neonatal unit. As each batch will have a mix of doctors and nurses who 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.

The training is designed in a way to create the best adult learning experience possible and the facilitator must ensure that:

- Participants are viewed as experts in their own fields and interested in learning new skills
- Individuals are adviced to read the topics before the training begins.
- Participants are encouraged to ask questions and the facilitator should willingly answer them.
- Motivate the participants by addressing them by their names, complimenting on correct answers, acknowledge all participants' responses with a comment, a "thank you" or a definite nod and appreciating improvement or progress.
- Participants practice the process and then apply it to their situations and become real 'catalysts for change'.

The enabling environment for learning (such as adequate light, no sound barriers), planning for all supplies needed each day, efficient movements from discussion room to hospital and back are few of the areas, which if done effectively and smoothly will have a positive bearing on the training. The videos, skills, equipment and exercises will help provide better understanding. Questions are suggested in appropriate places in the Facilitator Guide, but it is always better to prepare in advance sections that participants might find difficult and for questions they may ask.

How to Conduct a Session?

The facilitator should be familiar with the participant manual so that all sessions are conducted smoothly, incorporating pauses for conducting drills and sharing videos. While conducting a reading session, always try to introduce the subject and let the participants read the manual. Review the highlights of the text during individual feedback or group discussions. Slow down at difficult points and work carefully with individuals. Try to identify any weaknesses in the participant's skills or understanding by one to one discussion. Facilitator should pause the session to show the video wherever indicated in the participant manual.

At the beginning of a discussion, write the main question on the white-board. Paraphrase and summarize frequently to keep participants focused. Ask participants for clarification of statements. While recording ideas on a white-board use the participant's own words, if possible. Ensure the participant feels that his/her ideas are understood and recorded accurately. Also, encourage other participants to ask a speaker to repeat or clarify their statement. Avoid letting several participants talk at once. Try to encourage quieter participants to talk and at the same time carefully handle the over talkative participants. Encourage participants who do not interact in the group. If there are participants who have difficulty in understanding or speaking the course language or if there are disruptive participants, then take the help of nodal person organizing the training.

During the period of training find as many opportunities as you can to interact with each participant so that the participants overcome their shyness and productively learn throughout the course. Besides this, monitoring the progress of each participant and a feedback following the workshop is important.

During the training always refrain from the practices/gestures/comments which will embarrass the participant or give him a negative feedback. Be careful not to look always at one participant only. In case there is a need to discuss a query with your colleague, be prepared to say "I don't know but I'll try to find out."

Reinforce participants who:

- 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).

NOTES:

A pendrive/CD of photographs and videos is provided with the facilitator guide. These are provided in the same order as mentioned in the chapters of the participants manual and should be shown at the designated times during the training

TRAINING AGENDA: FACILITY BASED CARE OF SICK AND SMALL BABIES AT FRU/NBSU

Day 1			
Time	**Theme**	**Duration**	**Method**
09.00-9.30	Registration	30 min	
9.30-10.30	Inauguration	60 min	
10.30-10.45	Introduction to participants	15 min	
10.45-11.00	Objectives & expectations	15 min	
11.00-13.00	CHAPTER 1: ASSESSMENT & MANAGEMENT OF NEWBORNS WITH EMERGENCY SIGNS	2 hours	1. Introduce the chapter 2. Reading of module 3. Group discussion 4. Drills 5. Summarization
13.00-14.00	**LUNCH**		
14.00-17.00	SKILLS STATIONS	3 hours with tea break	**Four groups by rotation** 1. Initial steps 2. Bag and mask ventilation 3. Chest compressions 4. Demonstration: Umbilical Vein Access and medication
Day 2			
9.00-10.00	CHAPTER 2: REFERRAL & TRANSPORT; COMMUNICATION	1 hour	1. Introduce the chapter 2. Reading of module 3. Role play 4. Summarization
10.00-11.00	CHAPTER 3: ASSESSMENT OF NEWBORNS FOR ADMISSION IN NBSU	1 hour	1. Introduce the chapter 2. Reading of module 3. DRILL 4. Summarization
11.00-13.00	CHAPTER 4: SUPPORTIVE CARE	2 hours	1. Introduce the chapter 2. Reading of module 3. Case studies 4. Summarization
13.00-14.00	**LUNCH**		

Day 2			
Time	**Theme**	**Duration**	**Method**
14.00-17.00	SKILLS STATIONS	3 hours (45 mins each)	**Four groups by rotation:** 1. Kangaroo Mother Care (KMC) 2. Breast feeding and Expression of breast milk 3. Assisted Feeding; (Cup and spoon feeding/paladai feeding; OG tube feeding) 4. Video on Disinfection of equipment & housekeeping protocols, Hand washing drill for all participants
Day 3			
9.00-09.45	Chapter 5.1: MANAGEMENT OF JAUNDICE	45 minutes	1. Introduce the chapter 2. Reading of module 3. Case studies 4. Summarization
09.45-10.30	Chapter 5.2: MANAGEMENT OF SEPSIS IN NEWBORN	45 minutes	1. Introduce the chapter 2. Reading of module 3. Case studies 4. Summarization
10.30-11.00	Tea break & transfer to hospital/SNCU		
11.00-14.00	CLINICAL SESSIONS	3 hours (45 mins each)	**Participants divided into four groups:** 1. One group visits **the postnatal ward** to practice the skills in assessment of newborns (history & examination) & general care 2. Second group visits **the SNCU** and is assigned cases (sick & small newborns) to assess and discuss the management protocols. 3. Third group attends skills station on equipment: Radiant warmer, Phototherapy machine, oxygen delivery 4. Fourth group attends station on bedside skills: Using Glucometer, Blood sample collection, IV access, IM injection and Pulse oximetry

14.00-15.00	**LUNCH**		
15.00-15.30	RECORDING & REPORTING SYSTEMS AND OPERATIONAL ASPECTS	30 minutes	
15.30-16.00	DISCUSSION ON OPERATIONAL ASPECTS, DISTRIBUTION OF CERTIFICATES AND CLOSING.	30 minutes	

Facilitators/Program managers should ensure that they discuss all the recording and reporting formats (NBSU stationary) with the participants. A session for an hour at the end of the training should be set aside to discuss about the training and implementation activities that will be required to make NBSU functional. Preferably, the district RCH Officer and respective Facility in-charges should also attend this session and commit their full support in ensuring quality services at NBSU. The facilitators should also encourage the participants to read **Chapter 6 on Postnatal care of newborn in health facility** and clear any doubts with the facilitator during the sessions or even later during mentoring activities. In case online sessions are undertaken, the facilitator can discuss the same with the participants when they join for practicing skills.

Preparing the venue for the training programme

- One common hall is required for plenary sessions where all participants and facilitators shall be present.
- Participants work in two groups during the training sessions, with each group being facilitated by a team of a two facilitators. Two separate rooms are therefore preferable.
- Each training room should have provision for AV system, white board, markers, flip charts and wall charts.
- Provision of a handwashing & dining area, separate washrooms for male and female participants etc. should be made.
- Adequate space, preferably four small rooms should be available to organize four skill stations on each day.

DETAILED NOTES FOR FACILITATORS

Day 1 09.00-11.00 hours

Inaugural Session

Registration:

Organize a registration desk at an accessible location within the training venue, manned by one of the team members. Provide an attendance sheet with name of participants and confirm the contact details (phone numbers, email ID, designation, work address) and provision for marking attendance on all days.

Provide the resource pack (with Participants' module, and other relevant training and reading material) and stationery items. The name tags, if being used, can also be provided here. The soft copy of resource material may be mailed to the participants before hand so that they can come prepared.

Guide the participants to the training room/venue and ensure they are seated comfortably. Answer any queries that they might have regarding the logistics related to the training programme.

Inauguration:

Invite a senior official to inaugurate the workshop. It is important that s/he is oriented (beforehand) on the purpose of this workshop and place the training workshop in context of the newborn care programme/ strategy at district and state level. Inauguration by senior official/s can motivate the participants and also convey that priority is being accorded to care of newborns at all levels of the health system.

Introduction

The facilitators can introduce themselves giving a brief background of their work in the domain of newborn care. Then invite participants to introduce themselves and describe briefly (in few words/ sentences) how they are involved with care of newborns in their current job profile.

Objectives and expectations

One of the facilitators provides an overview of the training programme and its objectives. The training programme for facility based care of sick and small newborns at FRU/NBSU has been designed to equip the doctors and nurses positioned at these facilities with the following skills:

i. Triaging and emergency treatment of newborns with emergency signs
ii. Referral of newborns after initial management
iii. Management of newborns admitted to NBSU.

Ask the participants to share their expectations from the workshop. One of the facilitators can list them on a chart or whiteboard. Then the facilitator can clarify which of their expectations shall be met through this training programme.

Explain which topics will be covered and give a summary overview of each chapter.

11.00-13.00 hours

Assessment & Management of Newborns with Emergency Signs

11.00-11.15 hours: Group discussion- Initiate a group discussion regarding availability, utilization and quality of newborn care services at the participants' place of work.

(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.)

Activity 1: Group discussion: Use a flip chart or white board to record answers

Describe the existing services for newborns at your health facilities.

Which skills would help you provide quality newborn services at your health facility?

- Begin the group discussion by telling the participants the purpose of the discussion, which is to understand:
  1. If and how sick newborns are currently received at the health facility
  2. What are the common newborn conditions being managed, and
  3. If the service providers consider themselves equipped to deliver newborn care to sick and small newborns
- Next ask the participants to identify the skills gap which, when addressed can help them improve the newborn care services at their health facility.
- Try to get most of the group members involved in the discussion. Record key ideas on a flipchart as they are offered. Ask questions, if required, to keep the discussion active and on track.
- At the end of the discussion, present the conclusions from the discussion. It is important to highlight that certain health facilities (at FRU level) are currently providing newborn care services with existing resources. The facilitator can explore how and why these facilities are able to deliver

more than other service providers/health facilities in a similar setting.

- At the end of the discussion summarize, or ask a participant to summarize, what was discussed in the exercise. You can link the skills gap to the new skills that the participants can expect to acquire through this training. However, keep the expectations realistic!
- Appreciate the participants for their good work by (for example):
  - Praising them for the list they compiled,
  - 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.

11.15-11.45 hours

Arrival & Rapid Assessment

1.1. Instruct participants to read the Participants' modules (Introduction; Section 1.1: Arrival and 1.2: Clinical assessment and emergency management, till section 1.2.1). After 30 minutes, summarize. Then conduct Drill 1.1. In the drill, the participants are asked to respond quickly/rapidly to the questions.

Activity 1.1: Drill to revise what steps to take on receiving a sick or small newborn?

1. Place the newborn on a warm surface under a **Radiant warmer** and under good light and record temperature.
2. Check for the **Emergency signs** and institute appropriate treatment while planning for referral to SNCU/higher facility.
3. If there is an emergency sign, perform bedside **DIAGNOSTICS** (check blood glucose & oxygen saturation)

Activity 1.2: Drill to identify which conditions require emergency management?

SIGN/CONDITION	EMERGENCY MANAGEMENT REQUIRED: YES OR NO
Jitteriness	**NO**
Convulsions	**YES**
Fast breathing (66/min)	**NO**
Birth weight 1800 gms	**NO**
Cyanosis of lips	**YES**
Any abdominal distension	**NO**
Severe Respiratory Distress	**YES**
Bleeding from umbilicus	**NO**

SIGN/CONDITION	EMERGENCY MANAGEMENT REQUIRED: YES OR NO
Shock	**YES**
Temperature 35°C	**YES**
Diarrhoea	**NO**
Skin rashes	**NO**
Gasping for breath	**YES**
Temperature 36°C	**NO**
Refusal to feed	**NO**

Activity 1.3: Drill to revise the criteria for recognizing various signs in newborns

Sign	Criteria
Shock	Cold extremities with Capillary refill time >3 seconds Fast and weak pulse >160/minute
Hypothermia	Axillary temperature <35.5°C
Cyanosis	Blue skin, in addition to blue tongue and lips
Hypoglycaemia	Blood glucose <45 mg/dl
Severe Respiratory Distress	• Respiratory Rate >70/min • Severe chest indrawing • Grunting • SPO2<90%
Jitteriness	Rapid, repetitive movements which are of the same amplitude and in the same direction; precipitated by sudden handling of the baby or by loud noises, but it is usually stopped by cuddling, feeding, or flexing the baby's limb.
Subtle convulsions	• Repetitive blinking, eye deviation, or staring • Repetitive movements of mouth or tongue • Purposeless movement of the limbs, as if bicycling or swimming • Apnoea (spontaneous cessation of breathing for more than 20 seconds) • Baby may be conscious/unconscious/awake but unresponsive to stimuli
Apnoea	Slow breathing with prolonged intermittent pauses (lasting >20 seconds or less if associated with central cyanosis or bradycardia

11.15-11.30 hours: Tea break

11.45-13.00 hours

Management of Newborn with Emergency Signs

Discuss the management of newborn with emergency signs (Section 1.2.2). Then ask the participants to read the same section (1.2.2) from their module. Clarify any doubts and answer questions from the participants.

Ask the participants to work individually on exercise 1.4: Case studies. Give them 15 minutes to work on it; then discuss in plenary.
At the end of the session, inform the participant's that they will learn resuscitation, umbilical venous cannulation and medication at the skill stations.

Activity 1.4: Case Studies

1. **A 7 days old baby weighing 2.5 kg is admitted with refusal to feed, fast breathing, cold extremities and CRT of 5 seconds.**
   What are the steps of stabilization of this newborn?
   - Place baby under radiant warmer
   - Position and clear airway,
   - Attach pulse oximeter and monitor oxygen saturation.
   - Establish IV access
   - Check sugar -give 10% Dextrose bolus 2ml/kg; if sugar < 45 mg/dl followed by GIR @ 6mgs/kg/min.
   - Start infusion of 25 ml NS over 20 min.
   - Give pre-referral dose of antibiotics
   - Refer on IV fluids and oxygen support, if required

2. **A 7 day old baby girl with birth weight 2.8 kg. is brought with the inability to breastfeed. On examination you find that the newborn has subtle seizures, temperature is 36°C and respiratory rate is 56/min.**
   Write down initial steps of management.
   1. Place baby under radiant warmer, position and clear airway
   2. Attach pulse oximeter and monitor oxygen saturation
   3. Establish IV access
   4. Check blood sugar -give 10% Dextrose bolus 2ml/kg if sugar < 45 mg/dl

5. Give IV 10% Calcium gluconate at 2ml/kg in equal dilution with distilled water, slowly under cardiac monitoring.
6. If seizure persists start Injection Phenobarbitone 20mg/kg loading dose (diluted with normal saline) over 20 mins
7. Give pre-referral dose of antibiotics
8. Refer on IV fluids and oxygen support, if required

13.00-14.00 hours: Lunch

14.00-15.30 hours

Skills Stations with Tea Break

This is an interactive, participatory session where the participants have the opportunity to learn relevant skills by demonstration and practice using appropriate mannequin and equipment.

The participants are divided into four groups, with equal representation (as far as possible) of different sub-groups (eg; doctors and nurses; experienced providers and freshers etc.) determined by participants' profile. Each group will participate in four skills stations by rotation.

Organizing Skills Station Sessions:

The purpose of the skills stations is to give participants an opportunity to practice skills by showing and doing. The more participants are involved with the equipment and "hands on" participation in this simulated situation, the better prepared they will be, when they confront real patients.

- The practical sessions for this training should be organized in small groups.
- The practice area should be identified in advance. There should be sufficient space for 8-10 persons to stand and move around. Four separate areas shall be required. If there is audio-visual privacy for each of these spaces, then it will help the group to focus on their own practical session.
- A list of supplies required for each practice session should be available with the facilitators. It is also provided at the end of this section. It may be updated or modified by facilitators taking into account the local situation. All the necessary supplies and equipment for all practical sessions should be collected beforehand in one place in consultation with the local SNCU team of doctors and nurses.
- Arrange for specific skills stations by providing the relevant supplies and equipment in the assigned room or space at/before the start of the day.
- Read & follow the manufacturer's instructions for preparing the mannequin before the start of the session.

- The facilitator needs to first demonstrate/teach the specific skills and then observe participants practicing the skills. There must be simulation of the situation to some extent. Each participant should be able to practice individually or in pairs.
- If a participant is not able to successfully perform the skill, the facilitator gives her/him guidance about what to do differently and s/he then tries again. The participant should repeat as needed, until s/he can successfully perform the skill. If a participant is having repeated difficulty, the facilitator will ask him/her to watch while another participant performs the skill. This should help the participant see what s/he is doing wrong.
- Time management is important as the groups are required to rotate to different skills stations during the allotted session.

Facilitators must familiarise themselves with the details of skill stations provided in the participant's manual.

Skills station	Supplies required
Skill Station 1 Resuscitation Initial steps	• Appropriate Mannequin (that allows for bag & mask ventilation) • Shoulder roll • Suction apparatus (e.g. DeLee mucus trap), suction cathetesr, 10, 12F size with suction machine • Oxygen tubing and source • Stethoscope • Wall clock • Pulse oximeter
Skill Station 2 Neonatal Resuscitation Bag and mask Ventilation	• Mannequin • Self inflating bag 250/500ml • Face Masks 0 and 1 size • Reservoir • Shoulder roll • Oxygen tubing • Oxygen source
Skill Station 3 Chest compressions	• Self inflating bag 250/500ml with reservoir • Face Masks 0 and 1 size • Shoulder roll • Oxygen tubing • Oxygen source
Skill Station 4 Umbilical venous cannulation and medication	• Sterile swabs • Spirit, Betadine • Sterile sheets. Sterile Blade • Syringes size 1ml, 10 ml, 20ml • Adhesive tape • Umbilical catheter/Feeding tube • Saline, adrenaline • Cut portions of umbilical cord in saline • Disposable gloves

Day 2 09.00-10.00 am

Referral and transport of sick babies & Communication with the family

Ask the participants to read chapter 2. Discuss key points with respect to counselling and components of neonatal transport. If time permits, the facilitator can discuss the local challenges in referral and transport and ask the participants to suggest feasible solutions.

Activity 2: Role play scenario

A 2 days old baby, with birth weight 1.6 kgs is brought to your facility with refusal to feed and subtle convulsions. You have taken steps to stabilize the baby and now you are preparing for referral and transfer.

I. How will you communicate the situation to the parents?

II. What steps will you take to complete the referral process?

At the start of the role play, it is important to:

- Define the objective of the role play;
- Define the setting;
- Define the time limit for the role play; and
- Define observers' task.

Explain to the participants:

This scenario is taken from situations which you have shared in the group discussion. It will give you the chance to practice what you might say when faced with this situation at your work place. It's a great way to explore what works and what doesn't. There is no right or wrong way of approaching it– just a deepening of understanding and, hopefully, the chance to practice some new ways of putting words together when dealing with parents.

Instructions:

Ask participants to volunteer as actors for the role play (a health service provider, mother, and father). You can be creative in identifying more characters if you wish to (e.g.; second health service provider, mother in law, ambulance driver etc.).

Other participants will observe the role playing.

Debriefing

At the end of the role play, appreciate the efforts of the role players. Ask for their own feelings and assessment of how they approached this situation. Subsequently, invite the observers to share their feedback: what aspects were addressed well in the role play (e.g., use of non-verbal cues, use of simple language, answering parent's queries) and what could be further improved and the strategies for the same.

NOTES:

Effective communication is crucial to reduce parental anxiety and help them make informed decisions on behalf of newborn. Communication begins at the first contact with health facility, during admission, daily assessment, till the baby leaves, after treatment or before referral. It maintains a healthy association between the health service providers and the parents, thus preventing conflicts. Communication should preferably, be done by senior health personnel or person with expertise. During the stay, any progress or deterioration in baby's condition should be regularly informed.

Communication at the time of referral:

- Explain the condition, prognosis and the reasons for transfer of the baby
- Explain where to go and whom to contact and anticipated transport care.
- Encourage mother to accompany

What to ensure pre-referral?

1. Carry out necessary administrative procedures.
2. Communicate with the referral facility
3. Provide detailed referral note, with relevant information
4. Arrange for free referral transport, provisioned under JSSK
5. Explain the care that parents-attendants can provide during transport.

At the end, summarize the key messages form the chapter.

10.00-11.00 hours

Assessment of newborns for admission in NBSU

Inform the participants that in this chapter they will learn how to assess (history and examination) the newborns presenting to their facility. They will also discuss which newborns can be admitted and managed at their health facility (FRU/NBSU).

Ask the participants to read the chapter 3. Then go over the key points.

In the end, discuss the criteria for admission to NBSU. Re-emphasize the need and relevance of managing newborns at the level of FRU.

Conduct a group discussion at the end of the session to revise criteria for admission to NBSU.

Exercise 3.1

Drill to discuss criteria for admission to NBSU

Sign/s for discussion
Jitteriness: Generally not pathological. Exclude hypothermia and hypoglycemia
Subtle convulsions: Admit and manage as convulsions
Abdominal distension: Do a thorough examination and decide accordingly
Axillary temperature <35.5°C: Stabilize and refer
Cold extremities with capillary refill time > 3 seconds: Stabilize and refer
Baby 2.5 Kg with Cleft lip: Assess feeding and refer for surgery to an appropriate centre. Not an emergency
Respiratory rate> 70/min; with severe chest indrawing: Stabilize and refer
Baby weighing 1.9 kg with refusal to feed: Admit
Baby 1.8 kg and accepting feeds: Admit for observation
Baby with diarrhoea: Assess dehydration and blood in stool
Jaundice on palms and soles: Needs referral
Temperature 39°C: Admit and manage accordingly
Baby with bluish discoloration of lips: Stabilize and refer

11.00-13.00 hours

Supportive Care

Explain that in this chapter the participants will learn how to manage the newborns admitted to their facility (NBSU/FRU). Most important aspects to take care of are-temperature, feeding and fluids. Also an important assessment to make is when to discharge the newborn. All this will be discussed in this chapter.

Instruct participants to read chapter 4 till section 4.6.

When they have finished reading, discuss section 4.1-4.6.

Next ask them to read the remaining chapter, from section 4.7-4.11.

Discuss and show the relevant videos.

Towards the end, spend at least 30 minutes for conducting the exercise given below. Divide the participants into smaller groups (either three or six). Give each group two case studies to discuss and complete. Then each case study is presented in the plenary.

Exercise 4.1

Case Study 1

Ranno delivered a 2.0 Kg baby 48 hours ago. There are no emergency signs. The baby is feeding well on breast and maintaining temperature. How will you manage this baby?

As there is **NO** indication for hospitalization baby can be managed at home:

- Advise delayed bathing
- Advise exclusive breastfeeding
- Mention adequate clothing (3-4 layers)
- Keep baby warm (remove wet clothing, cover head, feet and hands)
- Advise maintaining room temperature (away from windows, no draught, etc.)
- Teach KMC
- Explain danger signs (when to bring baby to health centre/NBSU)
- Teach temperature assessment (by touch)
- Give birth dose of vaccines; record in MCP card/immunization card
- Prescribe Vitamin D 400 IU
- Advice follow up

Case Study 2

Baby of Shanti, weighing 2 kg, was admitted with fast breathing on day 1 of life. He was started on IV fluids. On day 3, his distress has stabilized. How will you plan feeding transition? When will you plan for discharge?

Answer:

On day 3, total fluid requirement will be 90ml/kg/day. Since weight is 2 kgs, the total requirements for the baby is = 90ml x 2kg= 180 ml/day.

Since the baby is now stable, we can start breast feeds, if sucking is not good start feeds at 20 ml/kg/day= 20 x 2= 40mL. This gets subtracted from total fluid requirement, which will now be about 140mL of IV fluids.

So final order will be:

Feeds – 40 ml divided into 2 hourly feeds, i.e. 12 feeds= 3-5 ml EBM feeds by gavage or cup (choose cup feeds, if sucking is good at cup and respiratory distress has settled)

Fluids- 140 ml divided by 3 for each 8 hours shift = 46 ml Isolyte-P every 8 hourly i.e. = 50/8 = 6ml/hour "OR" 6 micro drops per minute.

Subsequently, feeds can be increased daily by 20-30ml/kg, while decreasing IV fluids. Try breast feeds and omit IV as soon as baby accepts 100ml/kg of oral feeds or is totally on breast feeds.

The baby should be discharged from NBSU when:

- Baby does not show any obvious signs of active disease
- Baby is accepting breastfeeds/assisted feeds well and showing weight gain
- Baby is maintaining normal body temperature
- IV antibiotic therapy is completed
- Mother has been counselled for danger signs, assisted feeding & KMC if required, and follow up visit is planned.

Case Study 3

Baby of Malti, weight 1900 grams is being discharged from NBSU at day 6 of life after receiving phototherapy. What feeding advice will you give to the mother? What supplements will you advise, in what quantity and for how much duration?

Answer

The baby will be discharged on breastfeeding and if needed, supplemented by expressed breast milk by katori spoon. The mother should feed the baby 'on demand' and at least 8-10 times during the day and night.

Supplements:

- Vitamin D: 400 IU daily; continue until one year of age.
- Multivitamin preparation 1 ml/day, till 40 weeks post menstrual conceptual age

Exercise 4.2

Indicate the mode of feeding and volume of feeds to be started in the following babies (fill in blanks in last two columns)?

S.No.	Day of life	Weight	Feed mode	Volume
1	Day 1	1500g	Orogastric	7.5 ml, 2 hourly
2	Day 1	1900g	Breastfeeding	-

13.00-14.00 pm: Lunch

14.00-17.30 pm

Skills Stations with Tea break

As on the previous day, divide the participants into four groups. Each group will participate in the skills station for a period of 45 minutes. The participants may take a tea break in between the skill stations.

Skills station	Supplies required
Skills Station 1 Kangaroo mother care	• Mother with her low birth weight baby • KMC Chair • Gown (Disposable or Cotton gown) • Baby socks, cloth/disposable diaper and head cap • A doll/Mannequin • Cloth for wrapping the baby
Skill Station 2 Breast feeding and expression of breast milk	• Two Lactating mothers and their babies • Doll/Mannequin • 3-4 baby sheets • Katori & Spoon • Paladai
Skill Station 3 Techniques of assisted feeding	• Mannequin (that features oro gastric tube insertion) • Sterile oro-gastric (OG) feeding tube (6F) or (8F) • 2-5 ml syringe (for aspiration) • Sterile 10ml/20 ml syringe (for feeding) • Kidney dish or bowl • Stethoscope • Scissors • Normal saline • Adhesive tape
Skill Station 4 Infection Prevention	• Laptop to play Video on disinfection of equipment & housekeeping protocols, • Hand washing chart • Running water and soap for hand washing drill for all participants

Management of Jaundice in Newborn

Inform the participants that they will now learn the management of two specific conditions commonly encountered in newborns presenting to health facility. Instruct participants to read chapter 5.1; then discuss the key aspects of assessment and management of jaundice.

At the end of this session, conduct the exercise given below.

Exercise 5.1

Case Study

1. Ram, a 5 days old baby, born full term with birth weight of 2.8 kg, is brought to health facility with jaundice on the face and chest which developed over last 24 hours. Baby is feeding well. There are no risk factors.

a. How will you manage this baby?

Answer: As the jaundice is restricted to face and chest and does not involve palms and soles and the baby is feeding well, this could be physiological jaundice. The baby can be sent home.

b. What advise should be given to the mother?

Answer: The mother should be told to bring the baby for follow up after 48 hours, continue breast feeding on demand, keep the baby warm and maintain proper hygiene.

She should be explained danger signs and advised to bring her baby immediately, if any danger sign is present.

2. Baby Prerna was born at 34 weeks and has been brought to FRU with yellow palms and soles. The baby is four days old.

a. How will you manage this baby?
b. What additional information and investigations are required?

Answer: Maintain TABC (Check and maintain Temperature, Airway- position and clear if required, Breathing- attach pulse oximeter maintain saturation between 91 – 95% and circulation- check heart rate and CRT.

Place under phototherapy with all precautions, continue breast feeding.

Palms and soles are yellow, which indicates severe/pathological jaundice and baby has at least one risk factor (prematurity), do urgent serum bilirubin, mother and baby's blood group, blood sugar and plan referral.

09.45-10.30 hours

Management of Sepsis in Newborn

Explain the management of sepsis. Then ask participants to read section 5.2. Answer if they have any queries and clarify doubts. At the end conduct the following exercise:

Exercise 5.2

Case Study

Baby Tara, 10 day old baby has come with refusal of feeds, fever and excessive crying. On examination, temperature is 39°C, heart rate is 170/minute, respiratory rate 66/minute, capillary refill time is 3 seconds. There is pus discharge from umbilicus. Her weight is 2.5 kg. and blood sugar is 50mg/dl.

a) Are there any emergency signs

b) How will you proceed?

There are no emergency signs:

- Treat as case of sepsis (since the baby has fast breathing, refusal to feed and hyperthermia, suggestive of sepsis).
- Place under radiant warmer in servo control mode, remove the clothes.
- Maintain airway, Check saturation.
- Do a bedside blood glucose.
- Baby has refusal of feeds. Baby should be started on gavage feeds 30 ml, 2 hourly.
- Clean umbilicus with spirit and apply 0.5% GV paint, locally.
- Administer antibiotics-Cloxacillin 50 mg/kg/dose 8 hourly IV (in view of suspected Staphylococcus infection over umbilicus) and Gentamicin 5 mg/kg/dose OD IV.
- Refer the baby to SNCU for further investigations and treatment after communicating to the parents the need for referral and the referral procedure.

c) Fill in the sample referral form.

Explain to the participants that as a routine, they must provide postnatal care for first 48 hours in the health facility. Chapter 6 describes the steps to be followed. The participants should read this chapter on their own and follow these steps in day to day practise.

11.00-14.00 hours

Tea Break and transfer to health facility/SNCU/postnatal ward for clinical sessions and equipment demonstration

Participants are divided into four groups.

11.00-14.00 hours

Group One	Visits the postnatal ward to practice the skills in assessment of newborns (history & examination) & general care
Group Two	Visits the SNCU and are assigned cases (sick & small newborns) to assess and discuss the management protocols
Group Three	Skills station on equipment: Radiant warmer, Phototherapy machine, oxygen therapy
Group Four	Station on bedside skills: Using a Glucometer, Blood sample collection, IV access, IM injection, pulse oximetry

Clinical sessions.

Arrangements: Divide the participants into three or four groups. Inform the participants about the transport details and place to re-assemble in the hospital.

The participants should be provided with the relevant stationery and pen/pencil.

1. Visit to post natal ward (45 minutes)

- Facilitator conducts a round of the postnatal ward along with the participants and demonstrate how assessment of newborns is made. Emphasize on relevant discharge instructions and communication with parents.
- The group will be divided in two and each group will be assigned a case for history taking and examination and recording the same in the case recording format provided.
- Facilitator assigns cases to participants and informs participants to record history and examination findings in the case recording format.
- Observe participants individually working with their assigned patients. Assist them in performing clinical skills, correctly.
- Discuss the principles of management: temperature maintenance, exclusive breast feeding, infection prevention. Discuss danger signs with mother and explain about follow up.
- Provide specific feedback and guidance as necessary. Praise them for the skills performed well and offer additional guidance, when improvement is needed.

2. Visit to SNCU (45 minutes)

Arrangements in Clinical Setup (in consultation with local SNCU team)

- Arrangements should be made for participants to observe all the protocols for entry into the nursery (hand washing, gowning, change of footwear).
- Participants visit the SNCU and are assigned cases (sick & small newborns) to assess and discuss management protocols.
- Newborns who are stable but in whom signs (e.g., jaundice, respiratory signs, low birth weight baby) can be demonstrated, should be selected as cases.
- The group will be divided in two and each group will be assigned one case for history taking, examination and management. They will record their observations in the case recording format. The case will be presented to the facilitator and he/she will discuss the case with the group.
- Participants should practice the steps relevant to the session's objectives with the case assigned.
- Observe participants individually working with their assigned patients. Assist them in performing clinical skills correctly.
- Discuss the principles of management of sick & small newborns.
- Provide specific feedback and guidance as necessary. Praise them for the skills performed well and offer additional guidance when improvement is needed.
- Emergency signs can be shown but without disturbing the newborn.
- Explain blood sample collection procedure and aseptic precautions for IV and IM injections

3. Skills station on equipment

- Radiant warmer,
- Phototherapy machine,
- Oxygen therapy (including dangers of hypoxia and hyperoxia)
- Explain working, maintenance, cleaning and trouble shooting.
- Details of each are provided in the annexure of the participants' module.

4. Bedside skills station on equipment

[Using a Glucometer, Blood sample collection, IV & IM injection, pulse oximetry (45 minutes)]

- Explain use of a glucometer, precautions and importance of treating hypoglycemia.
- Blood sample collection IV and IM Injections
- Explain procedure on Mannequin, emphasize aseptic precautions
- Explain working of pulse oximeter, precautions, cleaning and dangers of hypoxia and hyperoxia.

14.00-14.00 hours: Lunch

14.00-15.00 hours

Operational issues; Closing & certificate distribution

- Invite senior administrator of the hospital or district for the closing session. Gather the participants in the plenary. Seek feedback on the training programme. Discuss operationalization plan for NBSUs.
- Discuss the clinical records to be maintained in standard case record forms and reporting into online system.
- Distribute the certificates. If time and resources permit, arrange for a group photograph.
- Thank the participants, state programme managers and organizers for their participation and support.