Government of Sierra Leone
Ministry of Health and Sanitation

Essential Newborn Care

In-Service Capacity Building and Training for Health Care Providers in Peripheral Health Units

Participant Manual May 2017

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Abbreviations Used in this Module

ARV: Antiretroviral

ARI: Acute respiratory infections

BCG: Bacillus Calmette Guerin

CHW: Community Health Worker

CHX: Chlorhexidine

CHC: Community Health Centre

CHP: Community Health Post

ENC: Essential Newborn Care

HBB: Helping Babies Breathe

HIV/AIDS

FP: Family Planning

IM: Intramuscular

IV: Intravenous

KMC: Kangaroo Mother Care

LBW: Low Birth Weight

LLITN: Long-Lasting Insecticide Treated Nets

MCHP: Mother and Child Health Post

NBCC: Newborn Care Corner

PHU: Peripheral Health Unit

ODCH: Ola During Children's Hospital

OT: Operation Theatre

PNC: Postnatal Care

UNICEF

WHO

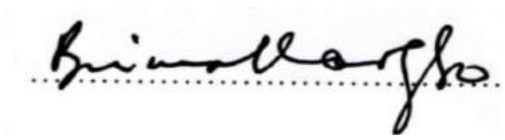
Foreword by Chief Medical Officer

There are too many deaths of mothers, newborn, and children from preventable conditions in Sierra Leone. Despite recent improvements in maternal and child health, the country could not reach the mark on achieving the Millennium Development Goal commitments by 2015. The GoSL recognizes that many of these deaths can be prevented with proven and low cost evidence based intervention. Newborn mortality rate (NMR) is 39 per 1000 live birth in Sierra Leone which is very high and warrant huge investment to cut it down to 12 or less by the year 2030 as stipulated in Sustainable Development Goal.

RCHD has developed On the Job Training (OJT) package with support from LSTM and UNICEF in collaboration with other partners and trained PHU level service providers on seven integrated maternal, newborn and child health modules namely, Antenatal Care, Labor & Delivery, Post-natal care, Family Planning, Adolescent Health, EmONC, and Nutrition. Essential Newborn Care (ENC) was largely missing in the OJT manual. Since provision of ENC saves majority of newborn lives, RCHD has taken the initiative to develop ENC manual for Sierra Leone with support from UNICEF and DFID.

I hope that, this ENC modules and the ensuing cascade training will enhance the quality of services provided for newborn at all PHU facilities, which will contribute to the reduction in the high newborn mortality rates in Sierra Leone.

Dr Brima Kargbo



Chief Medical Officer

Ministry of Health and Sanitation

Acknowledgements

The development of the Essential Newborn Care (ENC) module was the collaborative effort between the MOHS and UNICEF with financial support from DFID.

Special thanks to the staff of the Directorate of Reproductive & Child Health who facilitated and guided the module development process; and to UNICEF for developing the module. We also acknowledge support from Project HOPE, WHO and other partners in reviewing and contributing to the manual. I would like to acknowledge generous support from DFID for their continuous support for maternal and newborn health program in this country including printing of this ENC manual. This will in no doubt contribute immensely to develop skill of our staff and hence, enhance quality newborn service delivery.

The staff of the following programmes: Child Health/EPI, RH/FP Nutrition, HIV/AIDS, NMCP and paediatricians from ODCH all made meaningful inputs for which we are grateful as a Ministry.

The development of these modules involved series of meetings and reviews. Many persons, ranging from health professionals to auxiliary staff, made invaluable input to the process; and to you all, I say thank you on behalf of the MOHS.

Dr Santigie Sesay

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PREFACE

With the inception of the Free Health Care Initiative (FHCI), the Government of Sierra Leone and Ministry of Health and Sanitation (MOHS) have made significant progress towards the reduction of maternal and child deaths. The FHCI secured the removal of user fees for pregnant women, breastfeeding mothers and children under five, as well as improved salaries for health workers, leading to increased utilisation and reduction in maternal and child deaths, yet still Sierra Leone has one of the worst under fives mortality rates indicator globally with newborn deaths accounting for an estimated 29% of all under five deaths (UN IGME, 2015a).

Four out of five newborn deaths results from 3 treatable conditions: birth asphyxia, newborn infections and prematurity. Recent global evidence, for example from the Lancet Newborn Series, combined with our local experience provided us with the knowledge and tools to reduce newborn deaths in Sierra Leone significantly.

Essential newborn care is one of the critical step to manage the newborn conditions and provide quality newborn care, therefore it is essential that every service provider in Sierra Leone who is involved in child birth and delivery care is equipped with the critical essential newborn care skills and knowledge to deliver evidence based high impact newborn interventions at PHUs. This training package is intended to provide the necessary skills and knowledge as well as built the capacity of in service to staff to provide quality newborn care services, promptly identify danger signs and make appropriate decision to save newborn lives.

To accelerate the reduction of neonatal mortality the Government of Sierra Leone is committed to improving the newborn care services in the country in addition to the efforts in providing quality maternal, infant, child, adolescent health and reproductive health care services. One of the key step in this direction is the preparation of the essential newborn care training package and equipping the health service providers with essential skills and knowledge to handle newborn conditions along with providing them an enabling environment to practise their skills. Quality newborn care service would not only increase the confidence of the community in the health care services at PHUs but would also increase the coverage of services at the greatest times of risk – birth and the first day of life – and thus contribute in addressing the challenge of bringing down the neonatal mortality in the country.

Essential newborn care package is validated training curriculum based on scientific knowledge and evidence and would help in building technical expertise of health service providers to take this important initiative forward in Sierra Leone

Manual Aim

To improve and update the knowledge and skills of the service providers to provide effective "Essential Newborn Care "and "Sick Newborn Care" services in PHU level facilities. The Manual contains 10 Sessions which will prepare the health worker in the PHU facilities for care of normal newborns and the recognition and transfer to higher care of premature, low birth weight or sick newborns.

Expected Training Outcomes

Upon completion of these training sessions, participants will:

- Know the essential care required by well newborn infants, including:
    - Preparing for delivery
    - Infection prevention and control
    - Delayed cord clamping
    - Keeping babies warm and dry
    - Early breastfeeding within the first hour
- Provide hands on training to health care providers using simulation
    - Be competent to provide newborn resuscitation (using the Helping Babies Breath techniques) using a bag and mask
- Update providers on the care for newborns of HIV infected mothers and mothers in special situations e.g. HIV/AIDS, instrumental deliveries
- Orient service providers on the care of sick newborns including low birth weight, sepsis, jaundice, convulsion and other complications
- Orient service providers to the Kangaroo Mother Care approach to care of small babies including continuous skin-to-skin for warmth, breastfeeding and special feeding, and prevention of infection
- Orient participants to set up newborn corners at all PHUs (MCHP, CHP and CHC)
- Describe the process to refer a sick newborn to hospitals
- Understand the postnatal care needs of newborns, including immunisations, eye care and vitamin K, and the importance of postnatal checks for neonate
- Update care providers on Respectful Care and communication with the mother and family

Facilitation / training methods used in this manual:

- Discussion
- Simulation/Demonstration
- Knowledge Check/Participant Role Play
- Discussion on problems and cultural practices

Organization of the Manual

The narrative section provides evidence-based content as a learning resource with a focus on newborn care. The facilitation section provides to participants and service providers guidance for demonstration, knowledge check and practice on discussed topics.

Session 1: Introduction to Essential Newborn Care

Objectives of Session 1

- To describe current newborn health situation, to understand the concept of newborn and to define a healthy newborn
- To describe Immediate newborn care
- To describe routine newborn care
- To describe the postnatal care schedule
- To understand respectful care for mother and newborn

What is the Situation?

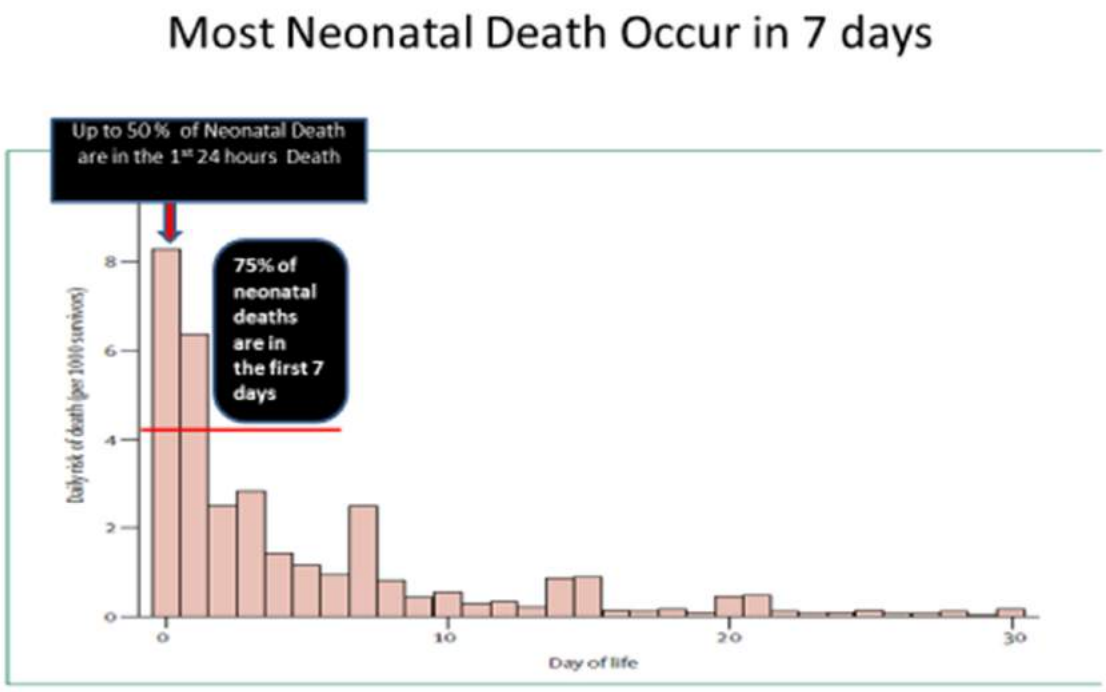
The days and weeks following childbirth—the postnatal period—are a critical phase in the lives of both mothers and newborn babies. Most maternal and infant deaths occur in the first month after birth: almost half of the newborn deaths occur within the first 24 hours[1], and 66% occur during the first week[2]. In 2013, 2.8 million newborns died in their first month of life—1 million of these newborns died on the first day [3 ' 4]

[1] Every Newborn, An Executive Summary for *The Lancet*'s Series. May 2014

[2] Nour N. 2008. An Introduction to Maternal Mortality. *Reviews in Obstetrics & Gynecology*. 1:77–81.

[3] . The Inter-agency Group for Child Mortality Estimation (UN IGME). 2014. *Levels & Trends in Child Mortality, Report 2014*. United Nations Children's Fund.

[4] Lawn JE et al. 2014. Every Newborn: Progress, Priorities, and Potential Beyond Survival. *Lancet* 384:189–205



Lawn, J.E. et al, Lancet Newborn Series -2005

Sierra Leone has the highest maternal mortality rate in the world. This country also has a very high neonatal mortality rate of 39 per 1000 live births. 7540 newborns are dying every year in Sierra Leone[5] and most of these deaths could have been prevented by known, low cost, evidence based, high impact interventions for this period including neonatal resuscitation, clean delivery practices and immediate essential newborn care, treatment of neonatal infections/newborn sepsis and referral for higher level care. As per the Sustainable Development Goal, each country has to cut down the current NMR level to 12 or less by 2030. Sierra Leone has planned to reduce neonatal mortality rate from 39 per 1000 live births to 16 per 1000 live births by 2021.

Definition of newborn

A newborn infant, or neonate, is a child under 28 days of age (WHO). During these first 28 days of life, the child is at highest risk of dying. It is thus crucial that appropriate feeding and

[5] http://countdown2030.org/documents/2015Report/Sierra_Leone_2015.pdf

care are provided during this period, both to improve the child's chances of survival and to lay the foundations for a healthy life.

Criteria of a Normal Newborn

- Respiratory rate: 30-59 breaths/min
- Heart rate: 100-160 beats/min
- Temperature:36.5°-37.5°C/97.5°-99.5°F (axillary, recorded over 3 minutes)
- Birth weight: 2500 gm to 4000 gm., (2.5 kg to 4.0 kg)
- Color: Pink but slight peripheral cyanosis allowed for a few hours after birth
- Movement: Spontaneous, equal, arms and legs are flexed
- Cord stump: No bleeding or drainage
- Feeding: Able to breastfeed soon after birth
- No apparent congenital malformation
- No birth trauma
- Passes meconium within 24 hours of birth
- Passes urine within 48 hours of birth

- The **postnatal period** is the period from the delivery of the placenta up to six weeks after delivery.
- The **early postnatal period** is the first 24 hours after delivery, and the late postnatal period is the rest of the postnatal period after the first 24 hours.
- **Postnatal care for mothers and newborns** is care given to the mother and newborn during the postnatal period.
- **Postnatal checks** are physical examinations, care provided to a mother and newborn. As well as recognizing danger signs and abnormalities and undertaking prompt referral, they allow preventative advice and care to be given**.**
- As soon as the delivery is complete, the mother and baby need close monitoring and a full postnatal check for early identification of problems and prevention unnecessary deaths.

Importance of postnatal care

- The greatest proportion of newborn deaths occurs during the first day of life.
- Over a million African babies are estimated to die in the first 4 weeks of life.

- Quality postnatal care reduces the risk of maternal and newborn mortality and morbidity. The postnatal period offers a very short window of opportunity to save the lives of the mother and newborn.
- It provides an opportunity to initiate breastfeeding and other preventative child care practices such as immunization.
- It identifies if the mother is healthy, is capable of taking care of her newborn, and is ready to successfully breastfeed.

Core Elements of Essential Newborn Care (ENC) [6]

These include the following practices:

Before delivery

- Follow standard precautions and cleanliness in the delivery room (good infection prevention and control practices).
- Preparation for birth by a skilled birth attendant, and identify and prepare a helper.

Immediate Newborn Care (Birth to 60 minutes of age):

- Note the time of birth.
- Deliver the baby onto the mother's abdomen.
- Thoroughly dry the baby immediately with a warm, clean towel or cloth.
- Evaluate the baby while drying.
- Remove the wet cloth.
- Keep the baby warm by covering with a clean, warm, dry cloth.
- Help the baby to breathe within the golden minute, if help is needed
- Keep the baby warm and check the breathing
- If the baby is breathing, place the baby on the mother's chest in skin-to-skin contact, covering the newborn's head with a cap, and covering the mother and baby with the warm, dry, clean cloth.
- Clamp and cut the umbilical cord between 1-3 minutes of age.
- Assist the mother to initiate breastfeeding.

[6] adapted from Helping Babies Breathe & Essential Care for Every Baby – American Academy of Paediatrics

Within 60-90 minutes of life

- Prevent disease by provision of hygienic cord care by applying 7.1% Chlorhexidine.
- Prevent disease by applying 1% Tetracycline Eye Ointment in both eyes.
- Prevent serious bleeding by IM Vitamin K administration for all newborns.
- Assess the baby, which includes checking the temperature, weighing and examining the baby.

Up to 24 hours of life

- Maintain normal body temperature in newborns.
- Improve thermal care of newborns.
- Feed the low birth weight baby.
- Support breastfeeding and give advice on breastfeeding problems.
- Give the required immunizations to the newborn.
- Reassess the newborn prior to discharge.
- Give parental guidance for home care.
- Recognize danger signs early and act.
- Provide pre-referral treatment and seek advanced care for the sick newborn.

Newborn Danger Signs

These are signs that signify disease or complications in a newborn. The health care provider should watch for these signs, which signify serious disease and complications and require immediate treatment and immediate referral.

Mothers should also be counselled to watch for these signs before they are discharged from the health facility. They must understand the importance of reporting to the health facility immediately if they notice any of the signs.

The danger signs are listed in the fact box below:

Danger signs in a newborn

Fast breathing and severe chest in-drawing: Can be due to pneumonia or sepsis.

Fast breathing: When breathing rate is more than 60 breaths per minute.

Severe chest in- drawing: When the sub-costal area indents with each breath. Babies with breathing problems may also have grunting, which is made each time the baby breaths out, blue color of the skin, or blue color inside the mouth on the mucous membranes (cyanosis). These signs indicate that baby is not getting enough oxygen.

Temperature that is too low or high: Under 35.5˚C/ 96˚F or high over 37.5˚C/ 99.5˚F is a danger sign and can be a sign of infection. A temperature that is 35.5˚ - 36.4˚C (96˚ – 97.5˚F) and does not rise with re-warming (e.g. skin-to-skin care) is also a danger sign. The normal temperature for a newborn is 36.5˚-37.5˚C.

Not feeding well: May be due to infection, prematurity, or other serious problems. Healthy babies usually demonstrate “ready to feed” signs every 2-3 hours. A baby who is not feeding or vomits large quantities of each feeding can quickly become dehydrated and his/her blood sugar level will decrease.

Movement only when stimulated or no movement: May also be called floppiness or lethargy; this may be a sign of infection or other serious problem.

Convulsions or history of convulsion: Convulsions are abnormal expressions of face and rhythmic movements of the limbs that cannot be stopped by holding the limb, may result from infection or low blood sugar. Baby may be drowsy or unconscious.

Umbilical redness extended to skin: The inflammation extends beyond the umbilicus to the abdominal wall.

Respectful Care for Mother and Newborn

Childbearing is an important rite of passage, with deep personal and cultural significance for a woman and her family. Women’s autonomy, dignity, feelings, choices and preferences must be respected, including their choice of companionship and care of her newborn. Women’s experiences during the labor, delivery and post-partum periods can empower and comfort them or inflict lasting damage and emotional trauma.

Evidence suggests that in countries with high maternal and neonatal mortality, it is the fear of disrespect and abuse that is often encountered in facility-based maternity care that is a more powerful deterrent to the use skilled care than commonly recognized barriers such as cost or distance (Kruk et al. 2009).

The White Ribbon Alliance has developed a Rights Charter of human rights in childbirth as follows (http://whiteribbonalliance.org/campaigns2/respectful-maternity-care/):

1. **Every woman has the right to be free from harm and ill treatment**. No one has the right to physically abuse anyone

2. **Every woman has the right to information, informed consent and refusal, and respect for her choices and preferences, including companionship during care**. No one can force you to do things without your knowledge and consent.

3. **Every woman has the right to privacy and confidentiality**. No one can expose you or your personal information.

4. **Every woman has the right to be treated with dignity and respect**. No one can humiliate or verbally abuse you.

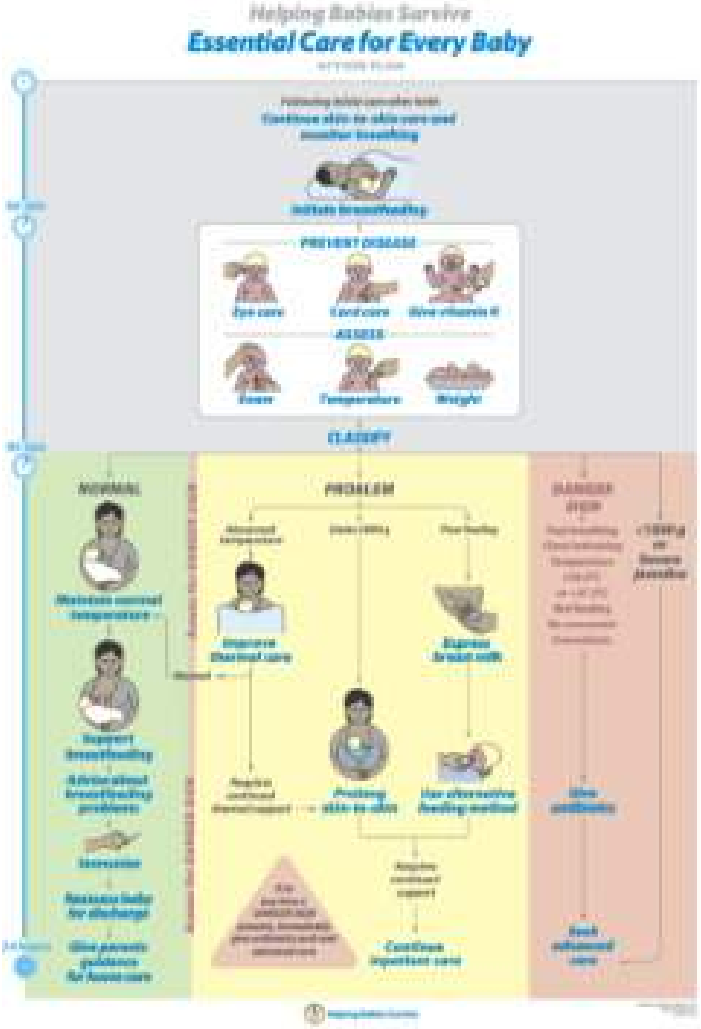
5. **Every woman has the right to equality, freedom from discrimination, and equitable care**. No one can discriminate because of something they do not like about you.

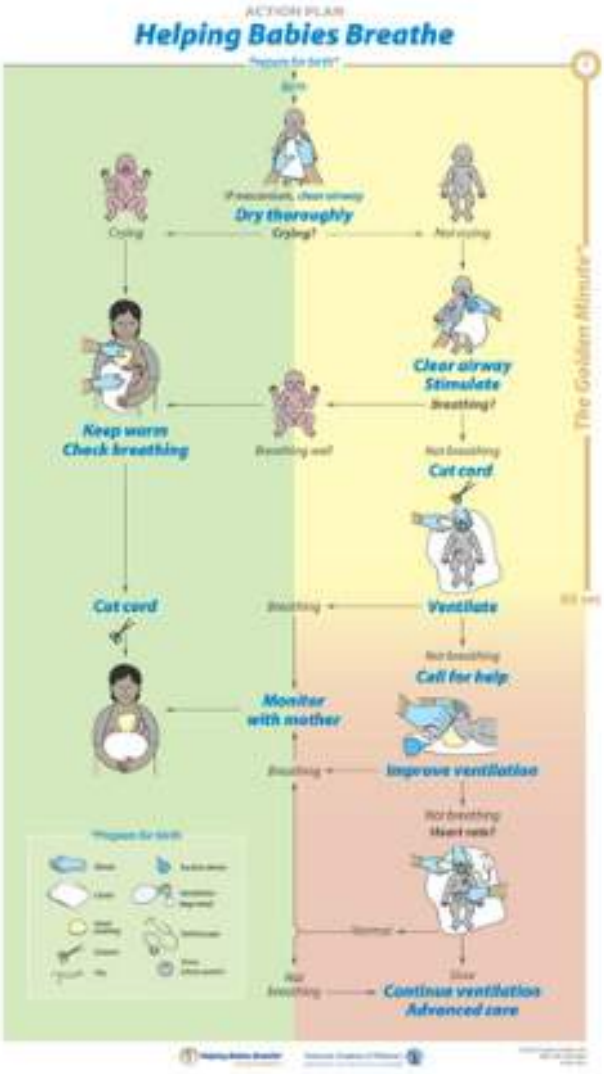
6. **Every woman has the right to healthcare and to the highest attainable level of health**. No one can prevent you or your newborn from getting the care you need.

7. **Every woman has the right to liberty, autonomy, self-determination, and freedom from coercion.** No one can detain you or your baby without legal authority.

Facilitation Guide

1. Overview Demonstration with ESEB and HBB Action Plans[7]





Discussion

- Identify problems and cultural practices that may affect maternal and newborn essential care.

[7] Facilitation Source: American Academy of Pediatrics (AAP): Helping Babies Survive – Essential Care for Every Baby Action Plan (2014), and Helping Babies Breathe Action Plan (2010)

Session 2: Preparation for Birth and Standard Precautions in the Delivery Room

Objectives

- To observe standard precautions and cleanliness in the delivery room.
- To practice good infection prevention and control measures.
- To know and follow the steps to take in adequate birth preparation.
- To know and follow the guidelines for setting up a newborn care corner (i.e. a corner for newborn care within the labour/delivery room or operating theatre).

Standard precaution and cleanliness: protecting babies

Standard Precautions General

Standard Precautions represent the minimum infection prevention measures that **apply at all times to all patient care, regardless of suspected or confirmed infection status of the patient**, in any setting where healthcare is delivered. These evidence-based practices are designed to protect HCWs and prevent the spread of infections among patients. Standard Precautions are based on the principle that all blood, body fluids, secretions, excretions (except sweat), non-intact skin, and mucous membranes may contain transmissible infectious agents. In addition to the consistent use of Standard Precautions, additional precautions may be warranted in certain situations. These additional (Transmission based) precautions may be needed when the route of transmission is not completely interrupted using Standard Precautions alone. (Sierra Leone IPC Guidelines, 2015)

The following are key principles of infection prevention and control that should be adhered to by all health workers for all deliveries and procedures in the delivery room.

- Wash hands before touching a patient, and before and after deliveries and procedures.
- Wear sterile gloves per protocol.
- Wear protective gear to avoid contamination with blood and other body fluids during deliveries.
- Safely dispose of sharps.
- Safely dispose of all clinical waste.
- Safely handle contaminated instruments and laundry.
- Clean, decontaminate, and disinfect or sterilize equipment.
- Safely dispose of contaminated gloves.
- Clean and sterilize gloves if they are to be reused.

Hand hygiene

Hand-washing is of particular importance for all health workers and visitors to the health unit. It is essential to wash hands before and after visiting and touching any mother or baby. All health care workers should practice hand washing before and after any procedure or provision of care to mother or baby. If done properly, hand washing is very effective in preventing transmission of disease.

Remember to take off all rings, jewellery and watches before washing your hands. Keep your fingernails short and clean, and remove nail polish. Use the recommended hand-washing protocol as stated in the national guidelines.

Hand washing procedure/steps

Soap and clean water should be kept ready for washing hands properly. If there is no running water available nearby, then hands should be washed under free-flowing water. A helper should be asked to pour water over your hands. All parts of the hands, e.g., fingers, palms, nails, back of the hands up to the wrist joints should be rubbed and washed thoroughly with soap and water for 40 to 60 seconds. The following 10 steps should be followed in washing hands:

Step 1: Wet hands with running water.

Step 2: Apply enough soap to cover all surfaces.

Step 3: Rub hands palm to palm.

Step 4: Rub right palm over left dorsum with interlaced fingers and vice versa.

Step 5: Rub hands palm to palm with fingers interlaced.

Step 6: Rub back of fingers to opposing palms with fingers interlocked.

Step 7: Rotational rubbing of left thumb clasped in right palm and vice versa.

Step 8: Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa (chicken feet).

Step 9: Rotational rubbing of each wrist.

Step 10: Rinse hands thoroughly with clean running water.

Step 11: Dry thoroughly with a clean towel or dry the hands in the air keeping them upright.

Things to remember

- Drying the hands properly after washing is an integral part of hand washing.
- Use a good quality soft soap that produces a lot of foam easily.
- Rub thoroughly to wash both hands.
- Elbows should be kept lower than the hands at all times during washing and drying hands.
- Hands should be washed up to the wrists of both hands.
- Dry the hands using clean towels or air-dry by keeping the hands upwards in air till dry.

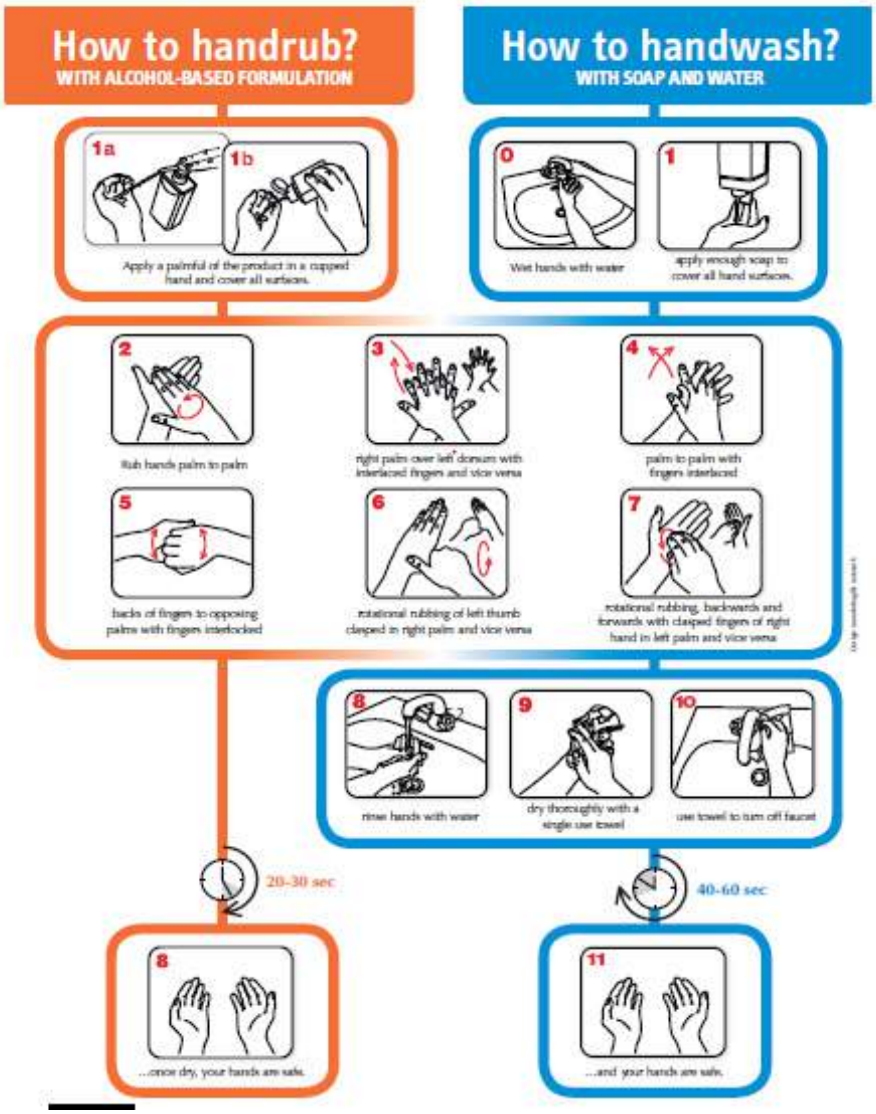
When will health providers to wash their hands?

To keep the babies safe from infection, the mother and other caregivers of the baby should always keep their hands clean. They should be encouraged to do so by washing their hands with soap and running water:

- During labour, before touching the mother and/or baby.
- Before feeding or helping to feed the newborn.
- Before examining the baby.
- Before and after provision of care to the baby e.g. injection, eye care, cord care.
- Before changing clothes, cleaning or bathing the baby.
- After changing the baby's diaper.

Note: Babies should not be touched at all with wet hands because it will make their temperature decrease.

Hand washing and hand cleaning



Decontamination of Equipment

What does decontamination do?

• Prevents life-threatening infections like HIV, Hepatitis, and infection from other micro-organisms.
• Keeps both health care providers and the patients safe from many infections

The current (2015) MoHS IPC Guidelines are as follows:

National IPC Guidelines – Sierra Leone: STANDARD PRECAUTIONS AND TRANSMISSION BASED PRECAUTIONS ▸ **4.6.1.1 Definitions**

Definitions	
Cleaning	The removal, usually with detergent and water or enzyme cleaner and water, of adherent visible soil, blood, protein substances, microorganisms and other debris from the surfaces, crevices, serrations, joints, and lumens of instruments, devices, and equipment by a manual or mechanical process that prepares the items for safe handling and/or further decontamination. Cleaning is essential prior to the use of heat or chemicals.
Decontamination	The use of physical or chemical means to remove, inactivate, or destroy pathogenic organisms on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal". This term is used to cover cleaning, disinfection and / sterilisation. A risk assessment based on the sections below needs to be conducted to decide the appropriate level of decontamination required.
Disinfection	Either thermal or chemical destruction of pathogenic and other types of microorganisms. Disinfection is less lethal than sterilization because it destroys most recognized pathogenic microorganisms but not necessarily all microbial forms (e.g. bacterial spores). It reduces the number of microorganisms to a level that is not harmful to health or safe to handle.
Sterilization	The complete destruction of all microorganisms including bacterial spores.

Procedure for cleaning and decontamination of equipment:

Step 1: Gather your equipment for cleaning and decontamination: Water, bleaching powder, measuring cup, eye protector, strainer, stirrer, mackintosh, utility gloves, and bucket with lid (red and green color).

Step 2: Wear appropriate **Personal Protective Equipment (PPE)** when dismantling and cleaning and disinfecting used equipment. This is discussed in Annex 2.

Step 3. Follow the IPC National Guidelines for cleaning and disinfecting equipment. **They can be found in Annex 2.**

Key Issues in Standard Precautions and Cleanliness

- Wash hands.
- Wear sterile gloves.
- Protect yourself from blood and other body fluids during deliveries.
- Practice safe disposal of sharps.
- Practice safe disposal of clinical waste.
- Safely handle contaminated instruments and laundry.
- Clean, decontaminate, and sterilize instruments.
- Safely discard gloves.

Preparation for birth by a skilled birth attendant[3]

A skilled birth attendant can save the lives of babies. She/he must be present at the birth and be prepared to take immediate action. By one minute after birth, ''**the Golden Minute**'' a baby should be breathing well or should have been helped to breathe with bag-mask ventilation. A skilled birth attendant;

- Can help a baby who does not breathe
- Ensures warmth, cleanliness, cord care and
- Breastfeeding for all babies

Preparation for a birth

Identify a helper and review the emergency plan

Prepare the birth companion or another skilled helper to assist if the baby does not breathe. A skilled helper or birth companion can assist in caring for the baby and mother. The emergency plan should include communication and transportation to advanced care facility.

Respectful care and communication with the mother

Childbearing is an important rite of passage, with deep personal and cultural significance for a women and her family. A mother's autonomy, dignity, feelings, choices, and preferences must be respected.

Prepare the area for delivery

The area where a baby is born should be clean, warm and well lit.

- **Clean -** Help mother wash her hands, chest and abdomen to prepare for skin-to-skin care.
- **Warm -** Close windows and doors and turn off fans to stop drafts where newborns are cared for. Ensure ideal room temperature between 25-28^{0}C
- **Well-lit -** Use a portable lamp if needed to assess the baby.

Wash hands

Good hand washing helps prevent the spread of infection. Wash hands thoroughly with soap and clean water followed by alcohol based solution before and after caring for a mother or a baby. (Hand washing steps in previous section, Page 18). Gloves protect you from infections carried by blood and body fluids.

Put on Personal Protective Equipment (PPE)

The 2015 National Infection Prevention and Control (IPC) Guidelines of Sierra Leone require that every provider wear the following for a delivery:

- ✓ Face shield or face mask and goggles
- ✓ Gown

- ✓ Elbow length gloves
- ✓ Rubber boots or closed toe shoes with overshoes

Gather Equipment needed for birth

- ✓ Sterile gloves
- ✓ Personal protective equipment (apron or gown, eye protection)
- ✓ Scissors
- ✓ Penguin sucker
- ✓ Cloths to dry baby
- ✓ Head covering for baby
- ✓ Ties or cord clamps
- ✓ Scissors
- ✓ Ventilation bag and mask
- ✓ Timer (clock, watch)

Prepare an area for newborn resuscitation

Prepare a dry, flat, hard and safe space for the baby to receive ventilation if needed. The space should have side barriers to prevent the newborn from falling. In addition to a safe delivery kit, have equipment to help a baby breathe. Equipment should be disinfected before and after use and kept clean.

Check resuscitation equipment

Check that all equipment and supplies are ready for use in the area for ventilation. Test the function of the bag-mask and the Penguin sucker before each delivery.

Summary of Care of the baby at the time of birth (until around 1 hour after birth)

Standard precautions

- Use soap and warm water to wash and clean hands (**protection**)
- Wear gloves (**protection)**

Make sure delivery area is ready for mother and new baby:

- Keep delivery room warm, clean and well-lit, close windows (**warmth, protection**)
- Have resuscitation equipment near delivery bed **(breathing)**
- Have clean warm towels/covers/cloths ready for newborn baby at delivery
- **(warmth)**
- Dry baby with a clean cloth immediately after delivery **(warmth, protection)**
- Have sterile kit to tie and cut cord **(protection)**
- Help mother to wear clothes which make immediate skin contact easy **(warmth)**
- Keeping mother and baby in skin-to-skin contact from birth encourages early breastfeeding **(feeding)**
- Keep baby warm by covering head
- Teach mother the baby's signs of readiness to breastfeed
- Monitor temperature and breathing of baby every 15 minutes in the first hour

The delivery and postnatal environment

- A good environment is essential for the provision of good delivery services and PNC especially in the first 24 hours after delivery.
- Although the arrangements of wards differ in various health facilities, basic requirements of a good ward environment should be fulfilled in all facilities as much as possible.
- Ensure that the room is warm for mother and baby.
- Respect mother's privacy and preferences.
- Total rooming-in should be possible.
- Room/bed should be arranged to ensure that health care providers have easy access to mother and child. That way they can easily detect and manage complications that arise.

Establishing Newborn Care Corner

The Labour Room in any health facility or hospital should have appropriate facilities for providing essential care to newborn including resuscitation. Thus, the Newborn Care Corner refers to the space within the labour room (& operation theatre in hospitals) with essential equipment and logistics for providing immediate care for all newborns. Establishing a Newborn Care Corner is **MANDATORY** for all PHU (MCHP, CHP, and CHC) as well as other hospital or maternity centre where deliveries take place. This is discussed in Annex 1a and 1b.

Service and Configuration of Newborn Care Corner:

Services provided from Newborn Care Corner

- Essential Care at birth.
- Examination of newborn
- Resuscitation.
- Provision of warmth.
- Weighing the neonate.

Configuration of the corner

- Clear floor area should be provided in the room for newborn care corner. It should be within the labour room.
- Resuscitation kit should be easily available.
- The area should be away from draughts of air.

Details of essential equipment and supplies are available at the end of the Manual in Annex 1a and 1b.

Preparation for birth

To test

Ventilation bag and mask

- Put the mask on the ventilation bag. Squeeze the bag and look for the valve in the patient outlet to open as you squeeze. This shows the device is ready to deliver air to a patient.

- Seal the mask tightly to the palm of your hand and squeeze hard enough to open the pressure release valve. Listen for the sound of air escaping. This shows that air which cannot be delivered safely to the baby will escape through the pressure release valve.

1. Knowledge Check
3. Practice Skills

Mark the box beside the best answer

What important tasks can a helper do during a birth?

- ☐ *Place a cold cloth on the baby's forehead*
- ☐ *Call for help or assist if problems arise*

When should you wash your hands?

- ☐ *When they look dirty*
- ☐ *Before and after caring for a mother or a baby*

The facilitators will demonstrate how to prepare for a birth.

Participants will work in pairs to practice the checklist. One person take the role of the birth attendant. The other person takes the role of the mother. Begin by introducing yourself. Then communicate with the mother and helper while preparing for a birth.

Participants give one another feedback, switch roles and repeat the exercise.

4. Discussion

Identify problems and cultural practices that may affect maternal and newborn essential care.

Session 3: Care of the Newborn at the Time of Birth (until 1 hour after birth)

Objectives

- To know and practice the immediate steps in providing care for the newborn at the time of birth.
- To recognize if a baby needs help to breathe.

Step 1: At birth dry thoroughly to prevent heat loss[3]

Dry the baby thoroughly at birth. After baby is born, it should be immediately dried, wet clothes removed, and the breathing baby placed skin to skin on the mother's chest. The mother and baby should be covered a dry cloth.

Drying helps keep the baby warm and stimulates breathing. A newly born wet baby can become cold even in a warm room. Dry the head, body, arms, legs and back by gently wiping with a pre-warmed clean cloth and wipe away any blood or meconium. Do not wipe off the white greasy substance covering the baby's body (vernix). This helps to protect the baby's skin from drying and gets reabsorbed very quickly.

- Discard the wet cloth
- Take the second dry warm clean cloth to wrap and transfer the breathing baby to the mother for skin-to-skin care.

Call out the time of birth and document it on the chart.

Step 2: Is the baby crying?

Routine care of the baby includes drying, removal of wet cloths and positioning the baby skin-to-skin with the mother. About 1 in 10 babies needs help to breathe[8]. Rapid assessment at the moment of birth is the best way to know if a baby needs help to breathe.

MOST IMPORTANT: Confirm that the baby is crying or breathing well immediately after drying.

Decide what subsequent care the baby needs.

The baby who is crying needs routine care.

[8] HBB Learner Workbook, American Association of Pediatricians, 2010

Most babies cry at birth and then breathe quietly and regularly. Crying means a baby is breathing well. The crying baby usually moves his or her limbs and has good muscle tone.

NOTE: A baby who does not cry, needs special help to breathe.
Babies who do not cry may not be breathing at birth. A baby who is not breathing is limp and does not move. The skin may be pale or bluish. A baby having shallow breathing, gasping or not breathing at all needs help to breathe. Prompt attention will increase the chance of a good response. If no help is given to a baby who is not breathing, that baby may die or experience serious brain damage. This will be discussed in the next Session.

Step 3: If the baby is crying: Keep warm, check breathing, cut cord.

Keep warm

- Keep the door and window closed to prevent draught. If the baby has to be kept in a cot, put the baby on warm cloth/ towel and wrap well with a warm cloth and cover with a blanket.

- Position the baby **skin-to-skin on the mother's abdomen**. The warmth from the mother's body is one of the best ways to keep a baby warm. Being close to mother encourages early breastfeeding.

- Cover the baby with a warm, dry cloth and use a cap for head covering

- Postpone weighing and bathing. Bathing cools down the body. If necessary bathing can be delayed up to 72 hours, especially for (very) small and/or sick babies. Never bathe a baby in the first six hours of life.

Check breathing
Keep observing the baby's breathing. Listen to the sounds of breathing and watch the movement of the chest. Check that the baby is breathing quietly and easily or crying. A baby's neck should be slightly extended – not flexed or hyperextended. The nose should not be blocked by mother's skin or clothing.

Clamp / Tie and Cut the Umbilical Cord after 1-3 minutes
Babies benefit from delaying cutting the cord. This gives them extra red blood cells that prevent anaemia.

The baby receives blood from the placenta in the first few minutes after birth. **Delay the clamping or tying of the cord for 1- 3 minutes after birth.**

- Put ties/clamps tightly around cord at 2 finger breaths and 5 finger breaths from baby's abdomen.

- Cut the cord between clamps or ties with a sterile instrument; observe for any oozing of blood. If blood oozes, place a second tie between the skin and first tie.

Step 4: Monitor the baby and mother closely for the first hour after delivery and initiate breastfeeding

The baby's breathing and warmth should be monitored by a health professional every 15 minutes for the first hour after birth. The mother and baby should remain in the delivery room from the time of birth until after delivery of the placenta. Encourage breastfeeding while monitoring mother and baby after birth. Breastfeeding provides nutrition and helps prevent infection in the baby. Avoid any other feeding besides breast milk. Be sure that mother and baby are together. Remember to:

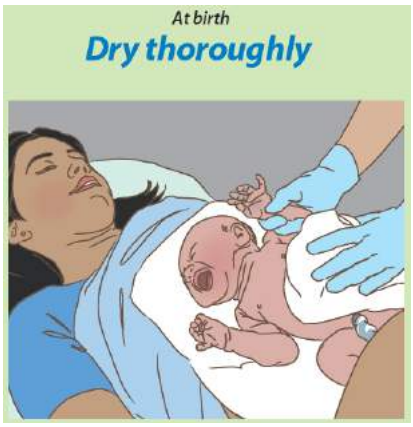
- Check breathing: listen for grunting, look for chest in-drawing and fast breathing.
- Maintain warmth: check to see if feet are cold to the touch.
- Encourage breastfeeding
- DO NOT leave the mother and baby alone during the first hour after delivery

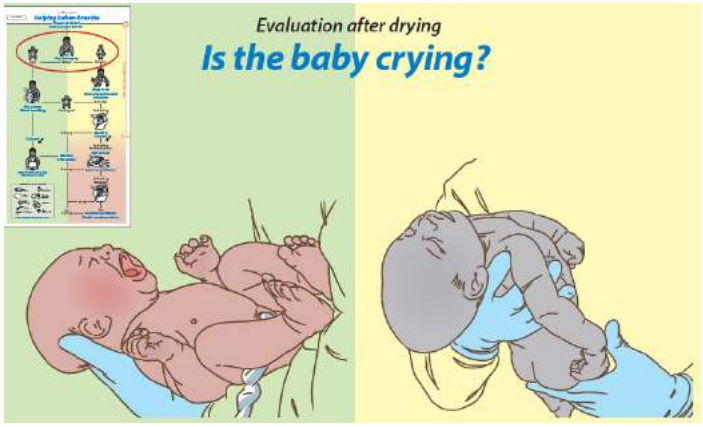
Key Messages on providing immediate care at delivery:

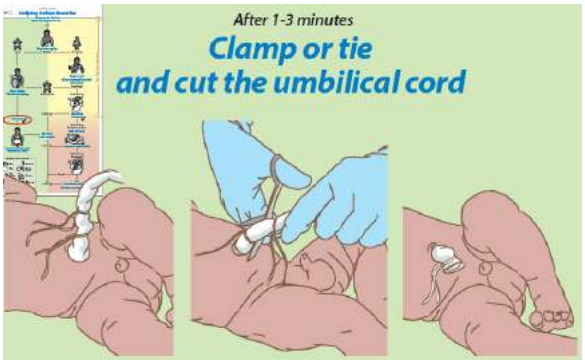
- Provide a clean, warm, well-lit draught free room with fans off, for temperature at 25-28°C.
- Deliver baby onto mother's abdomen.
- After birth immediately dry baby thoroughly with a clean, dry, warm cloth and evaluate if the newborn needs help to breathe.
- Discard the wet cloth.
- Take second dry warm cloth to wrap/cover the baby.
- Check breathing
- If the baby is breathing, put the baby skin-to-skin with mother by putting naked baby between mother's naked breasts. Cover them both with a warm clean cloth. Cover the baby's head to keep baby warm.
- Clamp and cut cord.
- Initiate breastfeeding as soon as possible after birth.
- Keep mother and baby together in a warm room.
- *Use a radiant heater if the room is not warm or baby is small OR use extra blanket to cover both mother and baby.*

Facilitation Guide

1. Demonstration







2. Knowledge Check

Mark the box beside the best answer

A baby is placed on a cloth beside the mother without drying. What happens?
- ☐ The baby can become cold
- ☐ The baby will stay warm

When should you dry the baby?
- ☐ After giving a uterotonic to the mother
- ☐ Immediately after birth

A baby is not crying after thorough drying. He is limp. What should you do?
- ☐ Give routine care
- ☐ Provide help to breathe

A baby cries after birth and then breathes quietly and regularly What should you do?
- ☐ Give routine care
- ☐ Provide help to breathe

Mark the box beside the best answer

How long should you wait to clamp or tie and cut the umbilical cord of a crying baby?
- ☐ Clamp or tie and cut the cord immediately
- ☐ Wait 1 to 3 minutes to clamp or tie and cut the cord

What actions help prevent infection of the umbilical cord?
- ☐ Good hand washing, wearing clean gloves, cutting with sterile scissors
- ☐ Covering the cord to keep it moist

3. Practice Skills

Practice in pairs:

- Dry thoroughly by gently rubbing
- the body, head, arms, and legs
- Remove the wet cloth
- Place the baby skin-to-skin
- Cover with a dry cloth
- Note the time of birth

- Use a neonatal simulator or mannequin to show crying/not crying

- Position the baby skin-to-skin and
- cover head and body
- Check breathing

4. Discussion

Identify problems and cultural practices that may affect maternal and newborn essential care

Session 4: Newborn Resuscitation

Objectives

- To assess the need for resuscitation in the newborn
- To help a baby to breathe in the golden minute
- To master the techniques of bag and mask ventilation in the newborn
- To know the steps in improving ventilation in the newborn
- To know when and how to evaluate the heart rate
- To know when to seek advanced care
- To recognise when a baby is dead
- To be competent in the Golden Minute including bag-mask ventilation at the end of this session

Overview:

It is estimated that 1 in 10 babies needs help with breathing at birth, but it is not always possible to know in advance which babies need this help. Most of those 10% of babies will respond well to bag and mask ventilation.

Resuscitation must be anticipated at each birth. Risk factors are poor predictors of which babies will need help to breath at birth. Up to half of newborn babies who require resuscitation have no identifiable risk factors before birth. It is essential for all health service providers (including gynaecologist, midwives, CHOs, CHAs, SRNs, SECHNs, and MCH Aides) who attend the mother at birth to be skilled at resuscitation and to recognize babies at risk.

Babies who receive help with breathing at the time of birth usually have very good outcomes.

Health Care Providers must:

- anticipate
- be prepared
- know what to do, in what order, and
- be able to work quickly.

Assessment of Breathing at Birth:

Step 1: Check the baby's breathing while drying it at birth
The first minute is called the **"Golden Minute"** because that is when babies need to get their first breath. Most babies breathe as soon as they are born and while they are being dried. Some babies need help. Basic resuscitation must begin within 1 minute of life if a baby has breathing difficulties.

Resuscitation skills are essential to the survival of babies.

Step 2: Keep the baby warm
Place the baby skin-to-skin on the mother's chest/abdomen. If that is not possible, place the baby beside the mother on a warm, dry cloth/blanket and cover the head.

Step 3: Make sure the airway is clear

DON'T routinely suction. A baby who is breathing does not need suction. Suction is only needed if baby is not breathing and fluids is seen in the mouth or throat, then turn the baby on its side and clear the airway with a penguin sucker.

How to suction:

- Clear the **mouth first** and **then the nose** with a clean penguin sucker.
- **Do not suction for more than a few seconds.** Suctioning too long, too vigorously, or too deeply can cause injury, slow the heart rate and prevent breathing.
- Stop suctioning when secretions are cleared, even if the baby does not breathe.

Step 4: Stimulate breathing

Gently rub the back once or twice. Most babies will breathe with gentle stimulation. Do NOT spank, hold upside down or stimulate with cold.

Step 5: Evaluate the breathing

After clearing the airway and stimulation, check to see if the baby is breathing well. If the baby is breathing well: No further intervention is required. Continue to check the breathing. Clamp or tie and cut the umbilical cord. Encourage breastfeeding in the first hour.

A baby who is breathing well will be:

- crying or
- breathing quietly and regularly.

A baby who is not breathing well will be:

- gasping - taking a single deep breath followed by a long pause or several deep, irregular breaths followed by a pause or
- not breathing at all

Some babies will have shallow, irregular, slow, or noisy breathing immediately after birth. Others may have chest in-drawing (retractions). These babies will require close monitoring of their breathing, heart rate, and colour to decide if they need more help to breathe.

Decide what care the baby needs after clearing the airway and stimulation**.**

Remember: Drying, clearing the airway, and stimulating breathing should take less than 1 minute. Your actions in the "Golden Minute" can help many babies begin to breathe.

Start Resuscitation with bag and mask ventilation

Move quickly to evaluate breathing and decide if the baby needs ventilation with bag & mask. If a baby is not breathing well or crying after clearing the airway and brief stimulation, the baby needs ventilation with a bag and mask.

Ventilation with bag and mask is the most important and effective way to help the baby who is not breathing or is gasping. Ventilation opens the lungs with air.

Bag and mask ventilation is the most important skill needed to resuscitate a baby. In Annex 3 there is a skills check-out sheet for this skill. Each health worker should be observed performing the skill on a mannequin every month.

Step 1: Tie and cut the cord
Quickly place two clamps or ties and cut the cord between them. The cord may be clamped or tied and cut before ventilation. In some cases, clamping or tying and cutting the cord will occur after ventilation has begun.

Step 2: Move the baby to the area of ventilation
Place the baby on a clean, warm, flat, hard and dry area with good lighting to assess the baby. Each PHU should have a Newborn Care Corner which is discussed later in this Manual and in the Annex. Prepare this area prior to the birth.

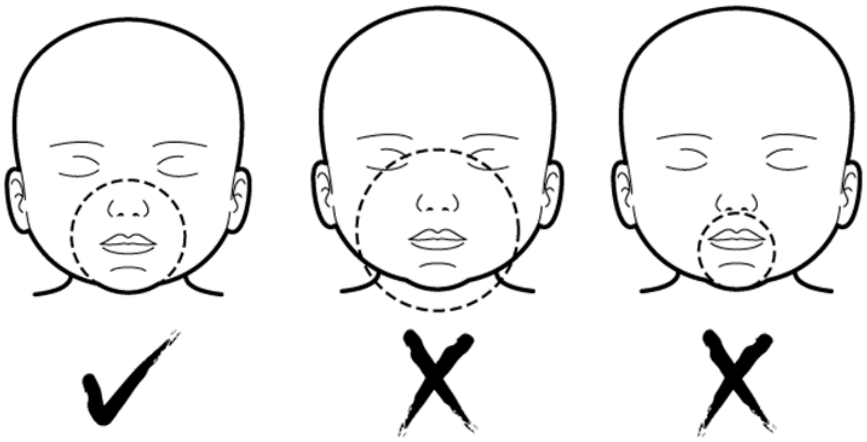
Step 3: Stand at the baby's head
This helps to control the position of the head and neck and helps the provider to observe chest movement.

Step 4: Position the baby's head slightly extended

Help to keep the baby's airway open by positioning the head slightly extended and support the chin. You may use a thin neck roll if desired but this is not necessary.

Step 5: Select the correct mask

The mask should cover the chin, mouth, and nose, but not the eyes. The mask should make a tight seal on the face, so air will enter the baby's lungs. A large mask will not seal well on the face and air will escape under the mask. A small mask will not cover both the mouth and nose and may block the nose.



Step 6: Position the mask on the face

Position the rim of the mask to rest on the tip of the chin, and then place the mask over mouth and nose.

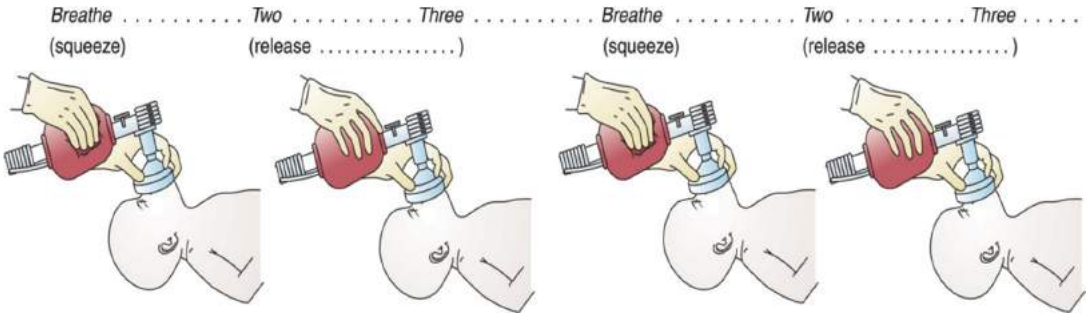
Step 7: Ensure a firm seal

Make a firm seal between the mask and the face. It is very easy for air to leak out around the mask.

- Hold the mask on the face with the thumb and index finger on top of the mask.
- Use the middle finger to hold the chin up toward the mask. Use the 4th and 5th fingers along the jaw to lift it forward and help keep the airway open.
- Form a tight seal by pressing lightly on the top of the mask and gently holding the chin up toward the mask. If the seal is not tight, you will not move air into the lungs as you squeeze the bag. The air will escape under the rim of the mask.
- Do not push the mask down onto the face. This may change the head position and interfere with air entering the lungs.

Step 8: Start bag-mask ventilation

- Squeeze the bag to produce a gentle movement of the chest, as if the baby were taking an easy breath. Make sure there is no leak between the mask and the baby's face. Squeeze the bag harder if you need to deliver more air with each breath.
- Give **40 breaths per minute**
- Count aloud, "One thousand one, one thousand two, one thousand three…four, ….." or "breathe – two – three…breathe – two – three…"



Step 9: During ventilation, check if the chest wall is rising

When the bag and mask are applied properly you will see the chest wall rising.

If you have a helper who can use a stethoscope, they can listen for air coming into the lungs.

Step 10: While still ventilating check if the baby is improving
Improvement in a baby's condition with ventilation may occur rapidly or slowly. A baby may begin breathing after only a few ventilations.

When the baby improves more slowly, you will need to look for other signs.

How will you know the baby is improving?

- A baby who is getting enough air will have a rapid rise in the heart rate. This cannot be seen. It requires feeling the umbilical cord pulse or listening to the heart rate with a stethoscope.
- Baby will show improvement in colour and muscle tone. The colour will become pink. The baby will move and no longer be floppy.
- Finally, the baby's own breathing will begin

Evaluate the baby during ventilation and check carefully if the baby is starting to breathe well. Stop ventilation when the baby is breathing well.

After the baby starts breathing well**,** the baby can remain with the mother under close monitoring.

Problems during resuscitation

Problem 1: Chest wall not moving during ventilation: call for help and take steps to improve ventilation.

If the baby is not breathing, continue ventilation and call for help. Check that during ventilation, there is adequate movement of the chest as if the baby were breathing normally.

Take steps to improve ventilation if the chest is not moving.

- **Head**
  - Reposition the head with the neck slightly extended
  - Reapply the mask to the face to form a better seal
- **Mouth**
  - Check mouth, back of throat and nose for secretions, and clear as necessary
  - Open the baby's mouth wider
- **Bag**
  - Squeeze the bag harder to give a larger breath

An air leak around the mask or incorrect position of the head is a common reason for poor chest movement. If still there is no gentle movement of the chest, try to find the problem and repeat the necessary steps to improve ventilation. Recheck the function of the ventilation bag. Replace it if another bag is available.

Problem 2: Baby is not breathing well after improved ventilation: evaluate the heart rate

- ✓ **If a baby does not begin to breathe after 1 minute of ventilation with chest movement, evaluate heart rate - whether it is normal or slow.**

Checking the heart rate is easier and faster with the help of another skilled person. A skilled helper can count the umbilical cord pulsations while the first minute of ventilation is being given. If there is no skilled helper or the cord pulse cannot be felt, movement of chest is needed as an indicator of adequate ventilation. Continue ventilation for 1 minute before stopping to feel for or, if not felt, listen to the heartbeat.

- ✓ **Decide if the heart rate is normal or slow.**

Evaluate the heart rate by feeling the umbilical cord pulse or, if no pulse if felt, by listening to the heartbeat with a stethoscope. Feel the pulse in the umbilical cord where it attaches to the baby's abdomen. If no pulse can be felt in the cord, you or your helper must listen over the left chest with a stethoscope and count the heartbeat. Pause ventilation for six seconds in order to hear the heartbeat. Count the heartbeat for six seconds and multiply by ten to get the beats per minute.

• **A heart rate of 100 beats per minute or more is normal.**

• **A heart rate of less than 100 beats per minute is slow.**

Minimize the time without ventilation. Listen to the heart rate just long enough to recognize if it is normal or slow. If the heart rate sounds faster than your own pulse, it is probably normal. If the heart rate sounds slower than your pulse, it is slow.

Problem 3: If the heart rate is normal, ventilate until the baby is breathing well

Most babies will start to breathe after effective bag and mask ventilation! The provider should continue ventilation and give the baby time to start breathing. Some babies might need 3-4 minutes or more of ventilation.

A baby who has a normal heart rate and pink colour but does not breathe needs continued ventilation. A slow decrease in the rate of ventilation over several minutes may allow return of spontaneous breathing. If the heart rate is normal, continue to ventilate until the baby is breathing well.

Gradually reduce the rate of ventilation and look for the baby's breathing. If the heart rate stays normal as the baby begins to breathe, stop ventilation.

Ventilation can be stopped when the baby is breathing and the heart rate stays normal (more than 100 beats per minute).

After ventilation care:

Closely monitor the baby with the mother.

- ✓ Monitor vital signs including breathing, heart rate, temperature, and colour.
- ✓ A baby who received ventilation with bag and mask may need assistance for feeding.
- ✓ Extended skin-to-skin care may be of special value to the small or sick baby who required ventilation.
- ✓ Talk to mother and the birth companion about the baby and the plan of care.

Problem 4: If the baby is not breathing or breathing with difficult, seek advanced care.

- If the baby still does not breathe, continue ventilation and consider special consultation and/or referral. The baby who begins to breathe, but has difficulty in breathing and a slow heart rate without ventilation needs continued ventilation and special care. The baby who is blue, pale, or breathing fast may be helped by supplemental oxygen through nasal prongs or catheter, if available in the PHU.

- Severe chest in-drawing, grunting, or frequent pauses in breathing (longer than 15 to 20 seconds) will require REFERRAL to Hospital.

A baby who has received continued ventilation (longer than 5 minutes) needs close monitoring and referral to Hospital. Warmth and assistance with feeding will be necessary. This is discussed in Session 10.

Problem 5: If the heart rate is normal or slow and the baby does not breathe continue ventilation and provide/transfer for advanced care.

If the heart rate is slow, all the steps to improve ventilation should be ensured. There may be a serious underlying problem like pneumonia, meconium aspiration, immature lungs (prematurity) or a congenital malformation. In those situation, refer the baby immediately to hospital where further respiratory support, endotracheal intubation and supplemental oxygen or chest compressions and medications.

What to do:

- ✓ Refer for advance care to Hospital. Call and tell them you are coming. Bring documentation of name, date, time of birth, prenatal or labor problems, etc.
- ✓ Continue ventilation during transport for advanced care.
- ✓ Transport mother and baby together.
- ✓ Keep baby warm during transport.
- ✓ Continue to monitor baby's breathing, heart rate, colour and temperature closely.
- ✓ Communicate your assessment and the actions you have taken to the responsible person at the receiving facility.

Problem 6: If the baby has no heart rate and no breathing after giving ventilation for 10 minutes, the baby is dead. Stop ventilation and counsel parents.

- Stop bag/mask ventilation
- Explain gently to parent(s)/caretaker that the baby is dead
- Provide psychosocial support
- Record the event

Skin that is purple-white or peeling (maceration) suggests that a baby died long before delivery. If recognized at delivery, ventilation does not need to begin. Ventilation can be stopped whenever maceration is recognized. No intervention is indicated.

A baby who never had a heart rate and never breathed after birth is **stillborn**. Babies who take a breath, or have a heart rate after birth, but die are **neonatal deaths**.

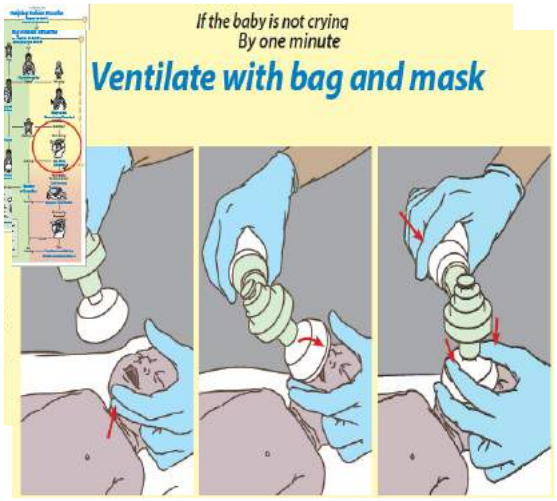
Support the family of a baby who is ill or who died. Explain to the family of a sick baby what is the problem and what can be done to help. Respond in a culturally appropriate way.

Answer the family's questions or find help to answer them. Respect the family's wishes, privacy, and religious beliefs. Give the mother advice on breast care and family planning.

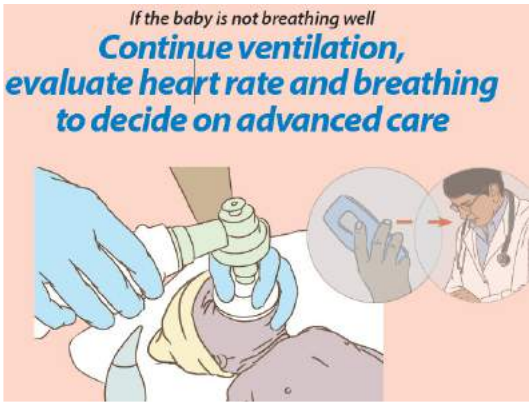
Facilitation Guide[9]

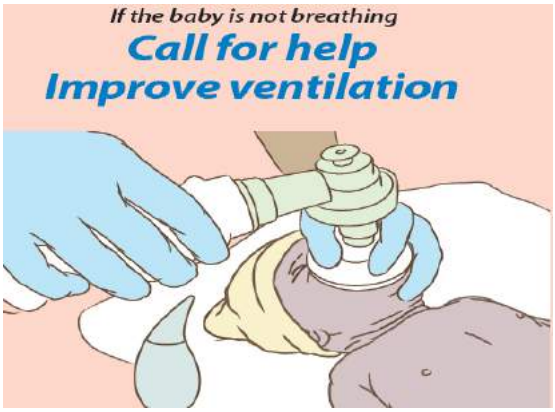
In this session each and every participant needs to show his/her competence regarding the golden minute including correct bag-mask ventilation through practical demonstration of his/her skills

1. **Demonstration**

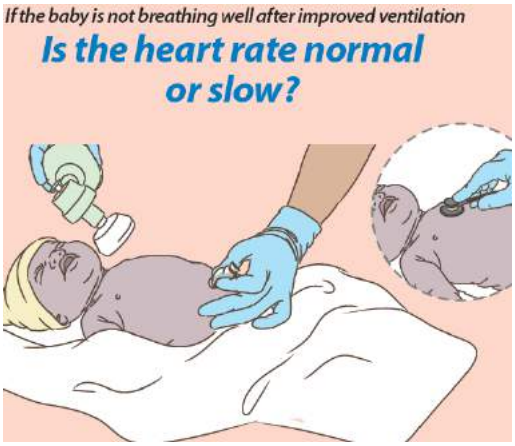


[9] Facilitation Source: American Academy of Pediatrics (APP): Helping Babies Breathe (HBB) Provider Guide – 2nd Ed. (2016)


If the baby is not breathing well
Continue ventilation,
evaluate heart rate and breathing
to decide on advanced care


If the baby is not breathing
Call for help
Improve ventilation

2. Knowledge Check



Which babies need clearing of the airway with a suction device?
- ☐ Babies who have secretions blocking the mouth or nose
- ☐ All babies who are not crying

Suctioning several times or suctioning deeply can
- ☐ Stimulate a baby's breathing
- ☐ Keep a baby from breathing

What allows you to move air into a baby's lungs during ventilation?
- ☐ A flexed position of the head
- ☐ A good seal between the mask and the face

To help keep the baby's airway open, you should position the head
- ☐ Slightly extended
- ☐ Hyperextended

A baby is not breathing well after drying and rubbing the back. There are no visible secretions. What should you do?
- ☐ Suction the airway and give more stimulation
- ☐ Ventilate with bag and mask

Which baby is breathing well?
- ☐ A baby who is breathing quietly and regularly
- ☐ A baby who takes one deep breath followed by a long pause

A baby who is not breathing is receiving ventilation with bag and mask. The chest is moving gently with ventilation. What should you do?
- ☐ Stop ventilation to see if the baby breathes
- ☐ Continue ventilation

A baby begins to breathe well after 30 seconds of ventilation with bag and mask. What should you do?
- ☐ Monitor the baby closely with the mother
- ☐ Provide routine care only

A baby's chest does not move with ventilation. What should you do?

- ☐ *Suction the airway and stimulate the baby*
- ☐ *Reapply the mask to the face and reposition the head with the neck slightly extended*

A baby does not breathe after several ventilation breaths with bag and mask. What should you do?

- ☐ *Suction the airway and stimulate the baby*
- ☐ *Call for help and continue ventilation*

You are breathing for a baby with bag and mask. When should you check the heart rate?

- ☐ *After every 10 breaths with the ventilation bag*
- ☐ *After 1 minute of ventilation*

You feel the umbilical cord to count the heart rate. You cannot feel any pulsations. What should you do next?

- ☐ *Listen for the heartbeat with a stethoscope*
- ☐ *Do nothing more, the baby is dead*

A baby has received ventilation for 3 minutes. The heart rate is checked and is slow. What should you do?

- ☐ *Stop ventilation*
- ☐ *Take steps to improve ventilation and assess that the chest is moving*

After 10 minutes of ventilation with good chest movement, a baby is not breathing and there is no heart rate (no cord pulse, no heart beat by stethoscope). What should you do?

- ☐ *Stop ventilation, the baby is dead*
- ☐ *Continue ventilation for another 10 minutes*

3. Practice Skills

Each participant will practice the role of the provider under all of the above steps with the baby manikins, for example **Neo-Natalies.**

4. Discussion

Identify problems and cultural practices that may affect maternal and newborn essential care.

[1] Facilitation Source: American Academy of Pediatrics (APP): Helping Babies Breathe (HBB) Provider Guide – 2nd Ed. (2016)

Session 5: Skin-to-Skin contact and Initiation of Breastfeeding

Objectives

- To know how to and to practice maintaining skin-to-skin contact
- To assist the mother to initiate breastfeeding
- To teach mother how to recognize the signs that baby is ready to breastfeed
- To discuss the benefits of breastfeeding

Babies should receive only breast milk for the first 6 months (180 days). Babies who receive other food or liquids before 6 months of age are more likely to develop diarrhea, ARI and malnutrition. Counsel expectant mothers and family members about breastfeeding during antenatal visits and discuss it again before delivery.

To encourage early breastfeeding, mother and babies need to be kept together. Babies are often alert immediately after birth and will move toward the mother's breast but may not suck.

Encourage Early Breastfeeding

After birth, let the baby rest comfortably on the mother's chest in skin-to-skin contact (chest-to-chest).

The baby should be kept in skin-to-skin contact after birth until breastfeeding takes place. **Place a hat on the baby, and put the baby between the mother's breasts in the upright position, chest to chest, head turned to one side to keep airway open, and hips flexed and extended in a frog position.**

Starting breastfeeding soon after birth helps mothers to provide enough milk later and to establish successful and exclusive breast feeding. Early breastfeeding encourages bonding between mother and baby and it also helps the uterus contract and reduces maternal bleeding. Breast milk, especially colostrum contains antibodies that protect babies against infection. It also provides nutrition, and is easily digestible.

The first feed after birth

- Let the baby feed for as long as he wants, with no interruption. When he finishes feeding on one breast, let him feed from the other breast.
- Keep the mother and baby together for as long as it is possible after delivery.
- Unless there is a good medical reason, delay the initial routine birth procedures, such as weighing, until after the first feed.
- This first time together is very important in helping the mother and baby to get to know each other and to form a close, loving

relationship.

- Maternal procedures can be done with a baby in skin-to-skin contact unless the mother needs treatment requiring sedation.

Benefits of breastfeeding

1. Benefits for the child

- Breast milk is widely acknowledged as the most complete form of nutrition for babies, with a range of benefits for babies' health, growth, immunity and development.
- A baby's first breastfeeding of colostrum is very important because it helps protect the baby from many common diseases and contains many important growth factors that help to develop the gut, the brain and the nerves and eyes.

- Diarrheal disease and severe respiratory infections are three to four times more likely to occur in formula-fed babies than breast-fed babies.

2. Benefits for the mother

- Mothers who breastfeed are less likely to develop osteoporosis later in life and have a lower risk of breast, uterine and endometrial or ovarian cancer.
- Breastfeeding releases oxytocin that causes the uterus to return to its normal size more quickly.
- Women who lactate for a total of two or more years reduce their chances of developing breast cancer by 24 per cent.
- The emotional health of the mother is enhanced by the relationship she develops during breastfeeding, resulting in a stronger sense of connection with her baby.

3. Benefits for the family

- Breastfeeding also has economic advantages; it's cheaper than buying formula and helps avoid medical bills later because it helps equip the baby to fight off disease and infection.

Important notes when continuing Skin-to-Skin and initiating breastfeeding

- The baby should be kept between the mother's breasts in skin to skin (chest-to chest) contact with the mother after birth until breastfeeding takes place.

- The placenta can be delivered without separating the mother and baby.

- Encourage the mother to initiate breastfeeding within the first hour, and when baby shows signs of readiness.
  Signs of readiness to breastfeed are:

- Baby looking around/moving
- Mouth open
- Searching

- Do NOT give artificial teats or pre-lacteal feeds to the newborn; no water, sugar water or local foods.

- Check that position and attachment are correct at the first feed. Offer to help the mother at any time.

- Let the baby release the breast by her/himself, then offer the second breast.

- To begin with, the baby will want to rest. Every baby is different and the rest period may take from a few minutes to 30 or 40 minutes before the baby shows signs of wanting to breastfeed.

- Help the mother and baby into a comfortable position.

- Tell the mother that when her baby begins to show signs of wanting to feed, to help him into a position where he can easily reach her breast.

- The baby will open its mouth and start to move his head from side to
- side; s/he may also begin to dribble.
- Put the baby next to the breast with his mouth opposite the nipple and areola.

- Let the baby attach to the breast by itself when s/he is ready.

- DO NOT let a health worker attach the baby. However, when the baby is attached check that the attachment and positioning are correct, and help the mother to correct anything which is not quite right and to help support her baby if needed.

The first few days: Colostrum feeds

A baby's first breastfeed of yellow milk (colostrum) is very important because it helps protect the baby from many common diseases.

The baby can feed from his mother whether she is lying down or sitting up; her position does not matter as long as she and her baby are comfortable. However it has been demonstrated that if the mother is in a semi-sitting position the baby finds it easier to attach to the breast without help.

The baby should have no other foods or drinks apart from colostrum, as these reduce the amounts of protective and growth factors the baby receives from this vital first milk.

- Colostrum (or yellow milk) is produced in small amounts.

- It contains protective factors in a concentrated form that the newborn baby needs to keep him healthy.

- It is a natural form of immunization.

Breastfeeding: Ensuring a Good Start with Correct Positioning and Attachment

- A mother must be comfortable when she holds her baby. This will help maintain attachment to the breast for the duration of the breastfeed.

- Attachment to the breast has to be correct for successful breastfeeding to take place. However, there is NO one "correct" position for breastfeeding.

- There are many different positions that a mother can use in different situations.

- We must not be rigid about positioning. If a baby is gaining weight, growing well and is healthy, the mother and baby should continue to feed in a way that is comfortable for the both of them and which maintains good attachment.

Key points to good positioning: The mother is relaxed and comfortable

Whatever position the mother uses to breastfeed her baby, the following points should apply:

-The baby's head and body are in a straight line.

-The baby's face is opposite the nipple and the breast.

-The baby's upper lip or nose is opposite the mother's nipple.

- The baby is held or supported very close to the mothers body.

-The baby's whole body is supported if the mother is in a sitting position, especially if her baby is newborn.

- If an older baby supporting the neck and shoulders may be sufficient.

Facilitation Guide [10]

1. Demonstration

To keep babies warm and identify problems early

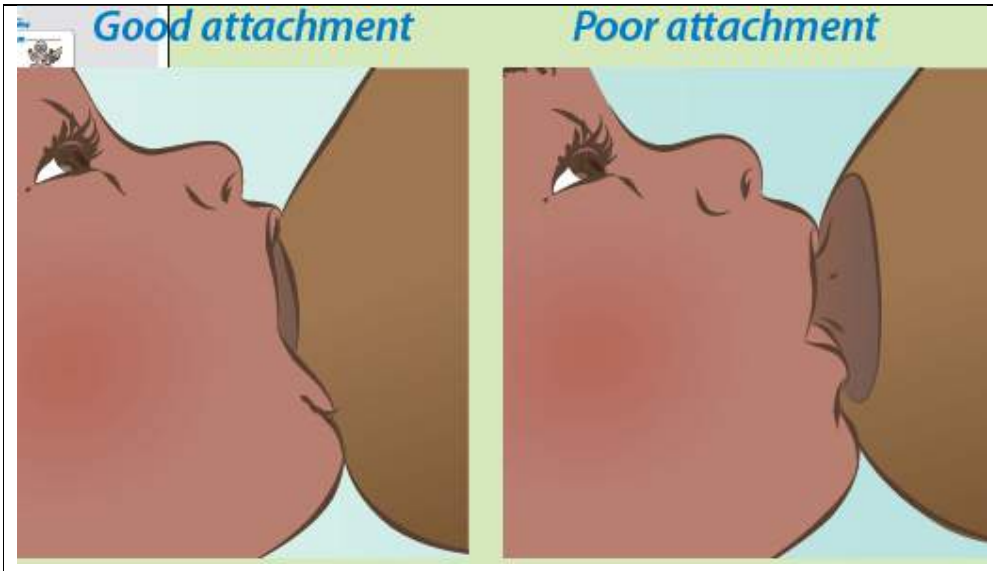
To increase the success of breastfeeding

Attachment

Key points to good attachment

- The mouth is widely open.
- The tongue is forward in the mouth, and may be seen over the bottom gum.
- The lower lip is turned outwards.
- The chin is touching the breast.
- More areola is visible above the baby's mouth than below it.

[10] Facilitation Source: American Academy of Pediatrics (APP): Helping Babies Survive – Essential Care for Every Baby (ECEB) – Provider Guide (2014), and Helping Babies Breathe (HBB) Provider Guide – 2nd Ed. (2016)



2. Knowledge Check

Select the correct answer:

When should skin-to-skin care begin?
- ☐ After delivery of the placenta
- ☐ Immediately after drying the baby following birth
- ☐ After being shown to the relatives

During the first hour after birth, how often should babies be observed for breathing problems?
- ☐ Once during the hour
- ☐ Every 30 minutes
- ☐ Every 15 minutes

During the first hour when should skin-to-skin care be interrupted?
- ☐ Briefly for essential care only
- ☐ When showing the baby to the relatives
- ☐ To give the first bath

A baby who is ready to breastfeed does which of the following?
- ☐ Cries for a long period of time
- ☐ Opens the mouth wide
- ☐ Eyes closed and hands open

How often should healthy babies feed?
- ☐ Every hour
- ☐ About every 3 hours, or 8-12 times per day
- ☐ Every 6 hours

Which of the following is a sign of good attachment?
- ☐ Only the tip of the breast in the mouth
- ☐ Baby bites down and pulls on the nipple
- ☐ Baby's mouth wide open on the breast

3. Practice Skills

Role One
Play the role of a mother who has just delivered. Collect a manikin or doll with a head covering and a blanket for the baby.

Role Two
Play the role of the provider.
Demonstrate and assist the mother with:
- Positioning herself comfortably
- Positioning the baby skin-to-skin near the breasts
- Covering the baby's body and head
- Monitoring breathing and temperature
- Recognizing signs of readiness to breastfeed

Change roles and repeat the exercise.

Discuss similarities and differences between the role play and your clinical practice.

4. Discussion

Identify problems and cultural practices that may affect maternal and newborn essential care.

[1] Facilitation Source: American Academy of Pediatrics (APP): Helping Babies Survive – Essential Care for Every Baby (ECEB) – Provider Guide (2014), and Helping Babies Breathe (HBB) Provider Guide – 2nd Ed. (2016)

Session 6: Improving Thermal Care in Newborn

Objective

- To know the presentation and effects of low body temperature in the newborn.
- To know the mechanisms of heat loss in the newborn.
- To know how to improve thermal care in the newborn baby immediately after birth and afterwards.

Warmth is one of the four basic needs of a baby to survive along with protection, normal breathing & feeding. It is critical to the baby's survival and well-being. It is very easy for a baby to get cold, especially at the time of delivery when the baby is wet with amniotic fluid. The temperature inside the mother's womb is 38°C; once the baby is born he is in a much colder environment and immediately starts to lose heat.

Therefore, it is imperative to know the means to keep a baby warm as well as understanding the four factors that contribute to heat loss and how they can be prevented. As a service provider, you also have to teach a mother how to keep her baby warm. The following table denotes the four different ways of losing heat and how these can be prevented:

Ways of Loosing Heat	**Process**	**How to Prevent heat loss**
Radiation	Not covering the baby's head so that its body heat is able to pass into the surrounding air.	Put a hat on the baby's head.
Conduction	Leaving the baby on a cold surface, particularly metal.	Take the baby off the table top, put skin-to-skin with mother, or wrap him up, and put him in a cot temporarily. Line the exam table and the weighing scale with a clean, dry cloth before placing the baby on.
Convection	Leaving the baby in a draught.	Take the baby away from an open door or window and turn off fans.
Evaporation	Not drying the baby after delivery when he is wet.	Dry the baby thoroughly with a towel and remove wet linens.

What is hypothermia?

A baby who is too cold (< 35.5 °**C,** hypothermic) – especially if he is small and preterm – is at increased risk of hypoglycemia (low blood sugar), illness or death.

First signs of hypothermia

1. The body cannot function well when it is cold. Being too cold means that the baby has to use a lot of energy to try to keep warm.

2. If the baby continues to be cold these symptoms become more severe and eventually the baby will die.

What are the clinical signs you would expect to see in a baby with hypothermia?

The baby:

- is less active,
- does not breastfeed well,
- has a weak cry,
- has cold extremities (feet and hands) and may also have a cold body.

In **more severe cases** of hypothermia the following signs may also be observed:

- The baby becomes lethargic and develops slow, shallow and irregular breathing and a slow heartbeat.
- The baby will have a low blood sugar (hypoglycaemia) and metabolic acidosis with possible internal bleeding.

It is important to realize that these signs are **danger signs** and the baby needs urgent referral for medical attention if it is to survive.

Improving thermal care in a newborn baby

Newborn babies cool down much faster than adults because they cannot maintain a stable body temperature as easily.

- In general, newborn babies need a warmer environment than adults.

- The smaller the baby and the more premature, the more difficulty he has in maintaining its temperature.

- A baby cannot get warm by itself if he has become cold. He will need to be "rewarmed".

- Skin-to-skin contact is the best way to keep a baby warm and the best way to "rewarm" a baby who:
  - has mild hypothermia (35.5 –36.4°C)
  - is found to have cold feet.

If the temperature is < 36.5°C, skin to skin care should be continued or resumed if stopped. Cover mother and baby with blanket. If possible, use a room heater. Make sure that the baby is dry and is in dry clothing with a hat in place. Cover mother and baby with a blanket. Make sure that the room is warm (at least 25°C) and keep the door and windows closed to prevent drafts. Check the baby's temperature every hour until normal. Continue feeding during re-warming. (Learner's workbook, Helping Babies Breathe)

It is a Danger Sign if a baby has a temperature of less than 35.5°C or the baby's temperature does not rise after the "rewarming" procedure has been followed. This baby needs to be referred urgently to another health facility. During referral the baby should be kept in skin-to-skin contact with the mother (or another person accompanying the baby) or should be wrapped in a cloth that has been pre-warmed to approximately 37°C.

The cloth for wrapping a baby in for referral should be pre-warmed to 37° C. This can be achieved in the following ways: a warming cupboard; folded cloths placed under a radiant heater; or place cloths in a clean dry place in direct sunshine.

Taking a baby's temperature

Wash your hands before taking a baby's temperature

- When an accurate temperature is needed because a baby is either too cold or too hot, use a thermometer to take the baby's temperature.

- Keep the baby warm throughout the procedure; the baby can continue to be held in skin-to-skin contact with his mother as you have just seen. The baby does not need to be in a special position for his temperature to be taken.

- A temperature taken in the Axilla, that is, under the arm in the armpit, is one of the safest methods of taking a baby's temperature.

DO NOT take a rectal temperature – it is not necessary.
Use a digital "Axilla" thermometer: Make sure it is clean.

- Place the silver/red bulb end of the thermometer under the baby's arm, in the middle of the armpit.
- Gently hold the baby's arm against his body.
- Keep the thermometer in place for at least 3 minutes.
- Remove the thermometer and read the temperature.
- Record the temperature in the baby's notes.
- A newborn baby's temperature taken under the arm is usually between 36.5°C and 37.5°C.

Remember to resume or continue skin-to-skin contact in improving thermal care (re-warming)

-Make sure the room is warm.

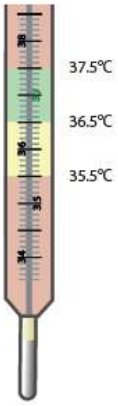
- Remove cold clothes and wet nappies.
- Place baby in skin-to-skin contact in a pre-warmed shirt opening at the front, a dry nappy, hat and socks.
- Cover the baby on the mother's chest with her clothes AND an additional warmed blanket.
- Check temperature every hour.
- Keep the baby with the mother until the baby's temperature is in the normal range.

Facilitation Guide[11]

1. Demonstration

Wash hands and

Measure temperature



To identify babies who require special care

After skin-to-skin care with a well, normal weight baby

Maintain normal temperature

To prevent a baby becoming either too cold or too hot

If the baby has an abnormal temperature

Improve thermal care

To achieve a normal temperature

2. Knowledge Check

[11] Facilitation Source: American Academy of Pediatrics (APP): Helping Babies Survive – Essential Care for Every Baby (ECEB) – Provider Guide (2014)

How soon does a baby begin to lose heat?
☐ When the baby starts breastfeeding
☐ Immediately after birth, even before the body temperature begins to fall
☐ After 90 minutes

How long should skin-to-skin care last for all babies?
☐ At least 1 hour
☐ As long as it is convenient for the mother
☐ At least 24 hours

How should a baby be kept warm after skin-to-skin care?
☐ Bathing in warm water
☐ Wrapping in a clean, dry blanket or cloth
☐ Exposing the baby to direct sunlight

3. Practice Skills

Role One
Choose thermometer readings for the provider in Role Two.
Collect a manikin or doll and a thermometer.

Role Two
Play the role of the provider.
Measure the temperature:
- Clean the thermometer
- Position the baby on the side or back
- Put the tip of the thermometer high in the armpit
- Hold the arm against the side for the recommended time

Classify the temperature (given by the provider in Role One) as normal, having a problem, or showing a Danger Sign.

Change roles and repeat the exercise.

Role One
Collect a manikin or doll, head covering and blanket, wet and dry clothing.
Provide a low or high temperature to the provider in Role Two.

Role Two
Play the role of the provider.
Take actions to return the temperature to normal:
- Warming a baby whose temperature is less than 36.5°C
- Cooling a baby whose temperature is above 37.5°C

Change roles and repeat the exercise.

Role One
Play the role of the mother.
Collect a manikin or doll and a blanket or dry cloth.

Role Two
Play the role of the provider.
Demonstrate and describe to the mother:
- Preventing heat loss
- Selecting appropriate clothing and head covering
- Wrapping the baby

Change roles and repeat the exercise.

4. Discussion

Identify problems and cultural practices that may affect maternal and newborn essential care

Session 7: Examination of the Newborn Baby

Objective

- To train PHU providers on the correct procedure to examine the newborn baby and weigh the newborn
- Discuss classification of the newborn into: normal, having a problem or having a danger sign.

The newborn will be examined around one hour of birth to assess the wellbeing and detect any anomaly. The provider should discuss the newborn's progress with the mother and finds out if there is any concern about the baby.

Timing of Exam:

A newborn baby should be examined:

1. After birth:

- At around an hour –after the first breastfeed, AND BEFORE DISCHARGE FROM the Peripheral Health Unit.
- If there is maternal concern about the baby's condition
- If a danger sign is observed during monitoring

2. **After leaving the Peripheral Health Unit:**

- During the first week of life at the second Postnatal Care visit in the home Sick newborn visit

Reasons for examining a baby at birth and again at discharge

1. at the time of birth

- An overall assessment of the baby's condition
- An initial set of baseline observations
- To provide appropriate care/treatment

2. Before discharge and thereafter

- To reassess and monitor the baby's condition
- To provide appropriate treatment if the baby's condition has changed from a previous examination
- To give the mother guidance on continuing appropriate care

Remember the following Points:

- A baby's condition can change very quickly.

- Make sure the mother is present for the examination. Encourage her to ask about anything she is concerned about.

- Always write the findings in the baby's records.

- A doctor or trained health worker will examine the baby.

What is included in the examination of the newborn?

History:

1. Mother's antenatal care and pregnancy complications such as anemia, malaria, HIV status, bleeding
2. Time labor started
3. Time of rupture of membranes
4. Time of delivery
5. Problems with labor or birth

Physical Examination:

Newborns should be formally examined between 60 and 90 minutes of birth to assess the wellbeing of the baby and detect any congenital malformation. The provider should discuss the newborn's progress with the mother and finds out if there is any concern about the baby.

Basic principles of the exam include:

- Keep the baby warm during the exam
- Record findings of the exam
- Manage any abnormal findings
- Inform the parents of the findings from the exam

The examination includes:

- Check breathing -until within normal limits noting especially chest in-drawing, grunting and a slow or rapid rate of breathing after birth. Normal breathes are 40-60 per minute after the first hour of life.
- Check skin colour

- Take a temperature with a thermometer (after the initial temperature with a thermometer feel the hand, feet and abdomen for warmth and if the baby feels cold to touch while still in the PHU)
- Observe the cord stump for bleeding
- Observe activity and body movement: baby should move both arms and legs and should be able to flex arms and legs.
- Check for jaundice: ALL jaundice seen in the first 24 hours of life is a danger sign.
- Inspect the following body areas for abnormalities in a systemic way for any malformations of the body:
  - Head
  - Face
  - Mouth and palate
  - Chest
  - Abdomen
  - Spine
  - Genitalia
  - Anus
  - Limbs
  - Skin
- Ask for if newborn has passed urine and meconium

Exam Findings for a Normal Newborn

Respiratory rate: 30-59 breaths/min

Heart rate: 100-160 beats/min

Temperature:36.5-37.5 C (axillary, recorded over 3 minutes)

Birth weight: 2500 gm. to 4000 gm.

Color: Pink but slight peripheral cyanosis allowed for a few hours after birth

Movement: Spontaneous, equal, arms and legs are flexed

Cord stump: No bleeding or drainage

Feeding: Able to breastfeed soon after birth

No apparent congenital malformation

No birth trauma

Passes meconium within 24 hours of birth

Passes urine within 48 hours of birth

Weigh the baby

ALL babies should have a birth weight recorded as a baseline measurement. Weight should be postponed until after the first hour of life. This helps to prevent the baby from becoming cold.

Following are the importance of weighing a baby

- It provides a baseline and is part of growth monitoring (with length, head circumference);
- Indicates whether the baby is receiving adequate nutrition;
- It identifies low-birth-weight babies at risk or needing monitoring or special care;
- It helps to calculate drug doses;
- It helps to monitor responses to treatment;
- It identifies babies who may have an underlying condition and need examination, assessment and treatment

When to weigh the newborn:

NORMAL size baby (> 2500 gram at birth)

- Within 60-90 minutes after birth
- Monthly if birth weight normal and breastfeeding well
- When the baby is brought for examination because he is not feeding well or is ill.

SMALL baby (< 2500 gram at birth)

- Within 60-90 minutes after birth
- Every day until 3 consecutive times gaining weight (at least 15 g/day).
- Weekly until 4 to 6 weeks or age (reached term).
- Take the scales to the baby. This avoids the baby having to be separated from its mother.

How to weigh a baby:

Weight the baby after the first 60 minutes have passed so the baby does not get cold in the first hour of life	
Take the scales to the baby so baby is not separated from the mother	
Prepare the scales	Cover pan with a clean, dry cloth

Preparing and weighing the baby	Remove all clothing including the diaper
	Weigh baby naked
	WAIT till baby stops moving
	Read and record the weight
	Wrap the baby
	Return baby to the mother
Scale maintenance	Clean the scale pan between each Weighing
	Calibrate daily
In postnatal clinics: Weigh a baby on THE SAME SCALES at each visit	

Classify the baby

At about 90 minutes following birth, the PHU provider should consider if the baby is normal or having a problem. They should consider the temperature, the weight, and the physical exam findings.

All babies should be classified by 90 minutes of age so appropriate care can be delivered.

Babies should be classified as:

- Normal and well
- Having a problem
- Having a Danger Sign

Needing referral from the PHU to a higher level care such as the District Hospital
If the baby is not classified as Normal –the provider makes a decision to provide support to solve the baby's problem or transfer to higher care

Normal and well babies:

- ✓ breathe at a normal rate (40-60 per minute) without effort,
- ✓ have a temperature of 36.5-37.5 °C
- ✓ weigh >2000 grams
- ✓ Have a normal physical exam
- ✓ have initiated breastfeeding

Babies with a problem may have one or more of these issues:

- ✓ may have a temperature of 35.5-36.5 °C
- ✓ birth weight of1500-2000 grams
- ✓ abnormalities on physical exam
- ✓ may feed poorly

Newborns with a **DANGER** Sign need advanced care:

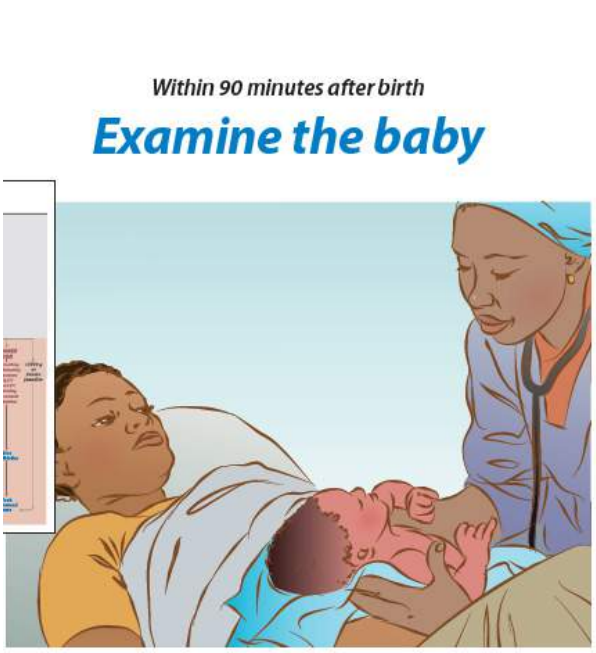
- ✓ Babies needing advanced care may have a Danger Sign

- ✓ Have jaundice you can see on the first day or severe jaundice in an older newborn
- ✓ birth weight <1500 grams
  - < 1500 GRAM: REFERRAL
  - < 2000 GRAM: REFERRAL IF ANY PROBLEMS

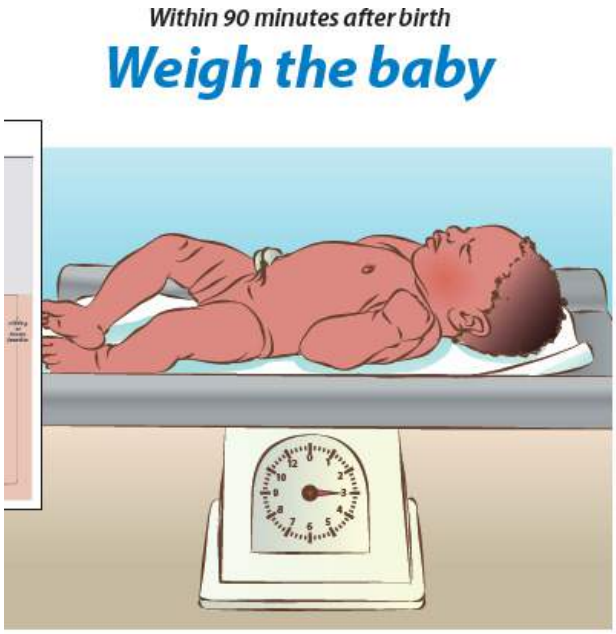
Important Note: Some babies do not attach to the breast during the first 90 minutes after birth and therefore do not feed. If these babies are normal in all other ways, feeding should be attempted again. Babies who do not feed after several attempts should be classify as having a Danger Sign, as having a Danger Sign.

Facilitation Guide[12]

1. Demonstration



To tell if a baby is well or has a problem



To help identify babies at higher risk

[12]Facilitation Source: American Academy of Pediatrics (APP): Helping Babies Survive – Essential Care for Every Baby (ECEB) – Provider Guide (2014), and Helping Babies Breath (HBB) Provider Guide – 2nd Ed. (2016)

By 90 minutes after birth

Classify the baby

To determine further care

2. Knowledge Check

Select the correct answer:

Which of the following describes movements of the arms and legs in a healthy baby?
- ☐ Full extension at rest
- ☐ Equal on one side compared to the other when awake
- ☐ Repeated jerky movements

How fast should a baby breathe?
- ☐ At least 65 times per minute
- ☐ At any rate as long as there is no chest in-drawin
- ☐ 40-60 times per minute

Within one hour after birth, what should drain from the umbilical cord?
- ☐ Small amounts of clear fluid
- ☐ Droplets of blood
- ☐ No drainage

Select the correct answer:

Which of the following is the most important reason for weighing all babies soon after birth?
- ☐ Birth weight may identify babies who need special care.
- ☐ Mother and family members often want to know the birth weight.
- ☐ Birth weight will determine how long a baby will feed at each feeding.

How soon after birth should babies be weighed?
- ☐ Sometime during the first day
- ☐ Anytime before mother and baby leave the birth facility
- ☐ Within 90 minutes after birth

When should a scale be zeroed?
- ☐ Once per month
- ☐ Whenever it is convenient for the health care worker
- ☐ Before each use

A 3000 gram baby is unable to suck or swallow during the first 6 hours after birth.
How would you classify this baby?
☐ The baby is normal.
☐ The baby has a Danger Sign, and you should seek advanced care.
☐ The baby has a feeding problem.

At 90 minutes of age, 2200 gram baby has a normal exam, is breathing 50 times per minute and attached to the breast and sucked for 10 minutes.
How would you classify this baby?
☐ The baby is normal.
☐ The baby has a Danger Sign, and you should seek advanced care.
☐ The baby has a feeding problem.

At 90 minutes of age, a 1700 gram baby has a normal exam, fed only briefly at 30 minutes following delivery and has a temperature of 35.7 °C.
How would you classify this baby?
☐ The baby is abnormal (low) temperature.
☐ The baby has a Danger Sign, and you should seek advanced care.
☐ The baby has a feeding problem.

3. Practice Skills

Role One
Play the role of the mother.
Collect a manikin or doll, a blanket, a pen a paper or recording form for physical exam.

Role Two
Play the role of the provider.
Demonstrate, describe to the mother, and document the physical examination:
- Breathing
- Movement and position of arms and leg
- Skin color
- Cord appearance
- Other features of a general exam

Change roles and repeat the exercise.

Role One
Play the role of the mother.
Collect a manikin or doll, scales, cleaning solution, and a blanket or cloth.

Role Two
Play the role of the provider.
Demonstrate how to weigh the baby:
- Clean the scale
- Put a clean cloth on the scale
- Balance the scale to zero
- Wash hands
- Ask the mother to undress the baby
- Quickly place the baby on the scale
- Return the baby to mother for skin-to-skin care or dressing
- Record the birth weight

Change roles and repeat the exercise.

Discuss similarities and differences between the role play and your clinical practice.

Role One
Based on cases of babies born in your facility who were normal, had problems, and needed advanced care, provide findings of physical exam, weight, and temperature of these babies to the provider in Role Two.

Role Two
Classify babies as normal, having a problem, or needing advanced care.

Change roles and repeat the exercise.

4. Discussion

Identify problems and cultural practices that may affect maternal and newborn essential care

Session 8: Section I - Routine Procedures in the first 90 Minutes to Prevent Newborn Disease

Objectives

- To prevent disease in the newborn by provision of eye care, cord care and Vitamin K administration to every newborn.

Basic principles

PHU Providers must wash their hands before doing any procedure.

Eye Care

Explanation:

Eye care is given to protect a baby's eyes from infections such as gonorrhoea which can pass from the mother to the newborn during birth. These infections can affect the baby's eyesight and sometimes cause blindness.

Antibiotic eye ointment should be given between 60 and 90 minutes of delivery after the mother has held her baby and tried to initiate breastfeeding. The ointment will cloud a newborns; vision for a short while so it is best to let the mother and baby have 60 minutes of bonding time before using the ointment.

The ointment and applied to the inside of the lower lid of both eyes. This can be done after the baby has been dried or when the mother is holding the newborn but can be given within the first 90 minutes after birth.

Procedure:

Wash hands before giving eye care
An antimicrobial eye medicine should be applied within 90 minutes of birth.

The **1% tetracycline** ointment should be put on the inside of the baby's lower eye lid. A thin ribbon of ointment can be squeezed into the lower eyelid. **Do NOT touch the eyelid with the tube.**

The antimicrobial ointment should not be touched or washed away.

Teaching of the mother and family members:

- If the family sees green discharge in the eye after they return home they should bring the baby to be evaluated in the PHU.

Cord care

Explanation: The umbilical cord has three big blood vessels that go directly into the newborn's body. This creates an easy pathway for infection until the blood vessels

close and dry which takes a few days. Some of these infections spread into the body and can take a newborn life. Most infection can be prevented with simple care of the cord and early detection of problems.

Procedure:

Wash hands before and after cord care.

- Cord Care is done within the first 90 minutes
- After cutting the cord Apply 7.1% Chlorhexidine (CHX) once (Single application) immediately on the umbilical cord.
- CHX should be poured directly by drops over umbilical cord directly WITHOUT TOUCH. CHX should be applied by pressing the dropper bottle so the solution flows over umbilical stump, body and base until the umbilical stump is fully soaked.

Teaching of the mother and family members:

- Keep the cord open and dry. Keep the cord outside of the nappie.
- **DO NOT bind or bandage the umbilical stump**. Leave it uncovered.
- Do not apply herbs or animal dung or other substances to the cord.
- If the umbilicus becomes red or draining pus or blood, report to the nearby PHU as quickly as possible.

Vitamin K Prophylaxis for the Newborn

Explanation:

All newborns are at risk of bleeding in the first few weeks of life. Premature newborns are at higher risk. Vitamin K can help to prevent this serious bleeding which can take a newborn's life.

Procedure:

Wash hands before giving the injection and thoroughly clean the skin

- All term newborn should be given **1 mg of vitamin K** intramuscularly [IM] ideally in the first 90 minutes after birth. Premature newborns (less than 1.2 KG should receive a 0.5mg dose.
- Vitamin K injection is given in the newborn thigh

- Vitamin K can be given 2-3 days later if that is the only time the drug is available.

- In Sierra Leone there may be difficulty getting the newborn strength vials. Vitamin K may come in vials with 10 mg/ml. If so, it will need to be diluted so that only 1mg is administered. Please read the vial carefully.

Teaching of the mother and family members:

- Explain to the mother why you are giving Vitamin K

- After she returns home the mother must bring the baby back to the PHU If she sees any bleeding from the cord or other parts of the newborn.

Facilitation Guide [13]

1. Demonstration

Continue skin-to-skin care and monitor breathing. Initiate breastfeeding

Provide treatments to prevent disease

Assess and Classify

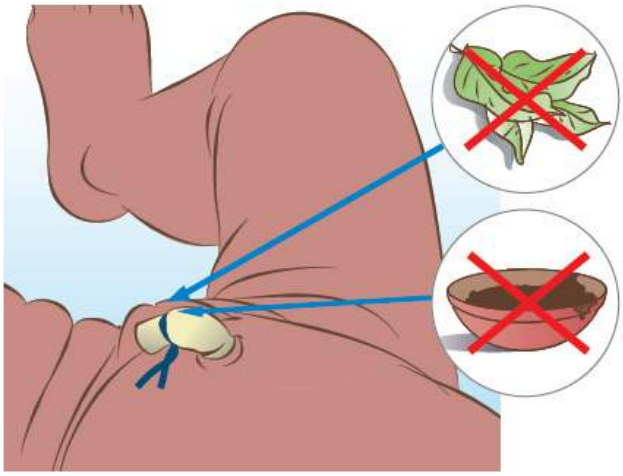
Within 90 minutes after birth

Provide eye care

To help prevent serious eye infections

Within 90 minutes after birth

Provide cord care



To help prevent infections

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eath (HBB) Provider Guide – 2nd Ed. (2016)

Give vitamin K

To prevent bleeding that can cause death

Session 8: Section 2 - Routine Care of the Newborn in the first 24 Hours (or until Discharge) and other Special Considerations

Objectives

- To maintain normal temperature in a well baby
- To support breastfeeding and understand common problems
- To know the immunization policy for newborns
- To be able to provide care for babies of mothers in special situations To know what parental guidance to give for home care prior to discharge
- To know the postnatal check schedule in Sierra Leone

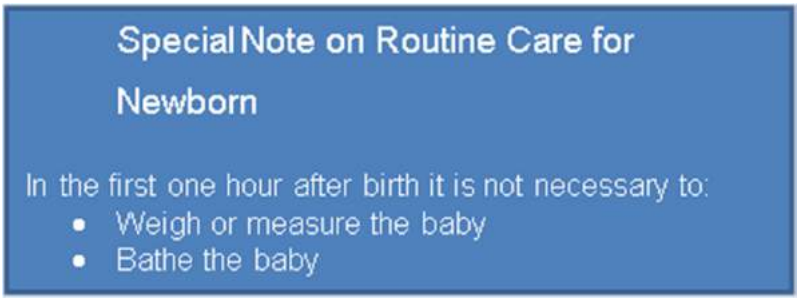
This section demonstrates evidence-based everyday care of the normal newborn baby during the time spent in the Peripheral Health Unit (PHU). This baby has already had a newborn exam, been weighed and had a temperature taken. The baby has been classified as “normal” and stayed at the PHU for routine care,

This section will help you to teach the mother how to look after her baby and what to do if her baby has any health problems. The care and help given to mothers and babies in the first few hours and days after birth, whether in a health facility or at home, should ensure their safety and well-being.

During this early period all new mothers have a variety of needs:

- They need time to get to know their babies and time to rest.
- They need to know what care to give to their baby and how to carry out the care: this is especially true of first-time mothers.
- They need to know what to do if their baby is not well.
- The majority of mothers and babies who receive their initial care at the PHU usually stay for a very short time after birth, unless the baby requires special treatment.
- During the time they are at the PHU, health workers provide routine care and in addition they must prepare mothers and babies for discharge and beyond.
- This includes teaching the mother how to look after her baby and how to recognize and respond to early warning signs that indicate her baby needs help.

Before a Baby goes home a second newborn exam is done and carefully recorded and the mother is taught how to care for herself and the baby.



The following are the key areas of care that are important for every newborn baby:

- Breastfeeding
- Warmth
- Cord care
- Hygiene
- Watching for danger signs.

Length of Time at the PHU Prior to discharge

When possible, discharge from the PHU should not occur until 24 hours after birth. During g the time at the PHU the mother will need close observation for bleeding and other problems such as hypertension. During these 24 hours at the PHU the newborn will need close observation for breathing, normal behaviour and effective breastfeeding.

Delay discharge for babies who have had problems such as low birth weight, low temperature or breathing problems. Prior to discharge, assess both mother and baby for potential problems and readiness for home care

Check Breastfeeding before discharge to home

Explanation:

Breastfeeding for 6 months is linked to fewer infections in the newborn. Exclusive breastfeeding is best which means NO supplemental feeds of water, sugar water or rice water. Water in Sierra Leone may not be clean and can give a newborn an infection.

In order to breastfeed successfully the mother needs adequate nutrition and sources of clean water for her to drink.

Procedure: (Please see Session 5 of this Manual for more information on breastfeeding)

Mothers should wash their hands before breastfeeding.

Evidence of successful breast feeding should be present prior to discharge. The baby should feed every 2-4 hours and at least 8 times per day. The baby should suckle effectively with slow, deep sucks, and the baby should settle between feedings. If the baby is not breastfeeding well, observe a feeding.

Watch for signs of poor attachment to the breast and assist the mother to position the baby with the baby turned towards the mother's body.

Teaching of the mother and family members:

Explain again to the mother and family members that exclusive breastfeeding with no supplemental feeds for 6 months will prevent infection in the newborn.

Before discharge, remind a mother of the importance of colostrum. Give her the following information and tell her how her breast milk changes over the first few days after delivery:

- On days 1 and 2, colostrum looks yellow and is thick and is only produced in small amounts. If a mother needs to express at this time a teaspoonful is all that she may get.

- About 2 or 3 days after birth, the appearance of the milk changes as the quantity increases. The milk looks thinner and whiter; it may even look more watery. This is quite normal. Reassure the mother that that her milk will continue to be nutritionally correct for her baby.

Signs of successful breastfeeding:
- Feeds every 2-4 hours or 8-12 times per day
- Sleeps well between feedings
- From about 3 days after birth, urinates 6-8 times per day

The mother may need assistance from other family members with household chores in order to support **exclusive** breastfeeding on demand day and night.

Ask the mother to get **help** if there is a breastfeeding difficulty. She can call a Community Health Worker or go to the PHU.

A second complete exam of the baby should be performed prior to discharge from the birth facility. Include a thorough inspection of the umbilicus because of the risk of infection of the umbilicus, a serious and potentially life threatening problem. Signs of infection include redness and swelling at the base of the umbilicus and drainage of

pus from the cord. If present, clean the cord with soap and water. Antibiotics should be given, and the baby should receive advanced care if a Danger Sign is also present.

Key information that must be given to the mother and her partner and family include on breastfeeding and the care of the mother and baby after birth. Prior to discharge, health workers must be able to give mothers the correct information about infant feeding.

Key Message on Breastfeeding care

- Support **exclusive** breastfeeding on demand day and night.
- Ask the mother to get **help** if there is a breastfeeding difficulty.
- Assess breastfeeding in **EVERY** baby before planning for discharge.
- I*f the mother reports a breastfeeding difficulty, assess breastfeeding and help her with attachment and positioning.*

Try to establish Breastfeeding and Support mother while in the Health Facility

Recognize and manage common breast problems

Explanation:

Some women have problems with breastfeeding. These can occur in the first week or much later.

Procedure:

Mother should always wash her hands before touching the breast

To relieve engorgement:

- Engorgement is breast fullness that may be painful to the mother.
- It occurs in the first week after delivery when the milk is changing from colostrum to regular milk
- Use warm compresses and gently express a small amount of milk by hand in order to soften the breast. Baby will then be able to attach.

To relieve cracked nipples:

- Check for poor attachment of the baby to the breast.

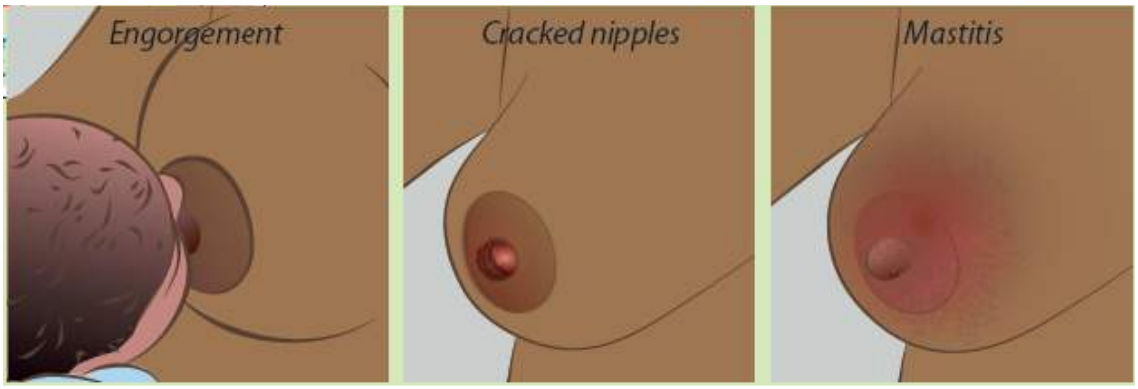
- To relieve pain gently rinse with clean water after feeding and leave open to the air.

For Mastitis:

- Mastitis is a serious infection of the breast. The woman will have a very painful place on one breast. She may have a fever.
- This woman will need antibiotics.
- The woman can keep breastfeeding from both breasts while the infection is being treated.

Teaching of the mother and family members:

Frequent breastfeeding and good attachment will prevent common breast problems. Apply a warm cloth to the breast before each feed will help the milk to "let down".



Immunization

Explanation: As per national immunization schedule in Sierra Leone, newborn babies should receive **BCG and zero dose of OPV**. These vaccines should be given within the first week of life and preferably before discharge from the health facility.

Procedure:

Wash hands before giving immunizations.

- Oral polio vaccine drops should be given without touching the vial to the baby.
- BCG is given intradermal injection in the arm.

Teaching of the mother and family members:
If the newborn does not receive immunizations before leaving the PHU the mother should be instructed to bring the newborn back to the PHU within the first week.

Keep the baby warm but not too hot

Explanation: A newborn will quickly become cold in the first few days of life. When a newborn is cold it will become stressed and may die.

Procedure:

The first hour after birth should have the newborn skin-to-skin between the mother's breasts

After the first hour and when the newborn is at home:

- Wrap the baby in a clean dry warm cloth
- Place the baby in a cot and cover with a blanket
- Use a head cap for the first week.
- Assess warmth every 4 hours by touching baby's feet; if feet are cold, place in skin-to-skin contact + extra blanket and reassess.
- Keep the room warm; if room not warm, cover baby with a blanket or use skin-to-skin contact.

Teaching of the mother and family members:

At home

- One more layer of clothes than children or adults
- Keep room warm for baby
- During the day, dress or wrap baby
- At night let baby sleep with mother or close by for breastfeeding
- Mother and baby should sleep under a treated bed net to prevent malaria

Advice to the mother on bathing of the baby at home

- **Wash or bathe a baby in a WARM, draught-free room**
- Wash the face, neck, underarms DAILY
- Wash the buttocks when soiled. Dry thoroughly
- **DO NOT** put anything in the baby's eyes or ears
- Bathe when necessary:
  - Use warm water for bathing
  - Thoroughly dry the baby, dress and cover after the bath
- Use cloth on baby's bottom to collect stool. Dispose as for woman's pads.

Special Situations

Breech delivery

As long as there are no complications at the time of delivery, a baby born in the breech position should have no problem beginning skin-to-skin contact and breastfeeding.

There may be an initial delay because the mother requires an episiotomy which needs to be repaired

The Mother who has HIV/AIDS

If Mother the mother has HIV/AIDS standard precautions MUST be followed as with ANY other delivery and after care. Current national HIV guidelines and HIV plan for that specific mother and baby to followed. If the Mother that has not been tested, offer the test (or refer after discharge from unit if test not available at the unit).

Whenever possible refer the mother to a Peripheral Health Unit where she can receive the care protocol for Preventing Maternal to Child Transmission (PMCTC)

- The baby of a mother with HIV can have immediate skin-to-skin contact as any other mother and baby.
- Breastfeeding can begin when the baby is ready after delivery.
- DO NOT GIVE the baby any other food or drink.
- Good attachment and positioning is vital to prevent breast problems.
- If replacement feeding, prepare formula for the mother for the first few feeds.
- one year six months.

Parental education on routine care and danger signs

Explanation:

Mothers and babies are in a health facility for a short time. Therefore, important information and counselling on several topics including newborn danger signs should be provided before discharge.

Maternal and Newborn Danger Signs

- These are signs that signify on-going disease or complications in the mother or baby during the postnatal period
- The health care provider should watch out for these signs in the mother and her newborn.
- They signify serious disease and complications and require immediate treatment or referral
- Mothers should also be counselled to watch out for these signs before they are discharged from the health facility. They must be told to report in the health facility immediately they notice any of the signs

Procedure:

Teaching of the mother and family members:

New mothers are very tired. It is impossible for the mother to remember everything she has been taught and told about. Whenever possible give instruction when the father or other family member is present.

Routine information the mother needs to know:

- A healthy diet and increased fluids for the mother is needed in order for her to recover from pregnancy and make adequate breastmilk.
- Need for mother to take iron tablets
- Clothing the newborn and cleaning the baby
- Cord care
- Family planning information
- When to seek care for danger signs.
- Breastfeeding support group in the community
- Information on birth registration

Danger signs the mother needs to know about:

For the mother:

- Heavy amounts of vaginal bleeding
- Headache or problems with eyes
- Pain in abdomen
- Pain in a breast or on the nipples

For the Newborn (this is also discussed in Session 10 of the Manual)

- Fast breathing and severe chest in-drawing: Fast breathing:
- Severe chest in- drawing:
- Temperature that is too low or high: Under 35.50C or high over 37.50C
- Not feeding well:
- Poor Movement when stimulated or no movement:
- Convulsions or history of convulsion:
- Umbilical redness extended to skin:
- Severe Jaundice

In addition to breastfeeding, mothers should be taught and reminded what are the other critical every day cares for the baby when they return home after discharge.

- To keep the baby warm
- To give cord care
- To keep the baby clean (hygiene).

These messages can be reinforced by the use of the Parent Guide, or similar document. Before discharge, parents should demonstrate their knowledge of these key messages.

Timing of Teaching and Advice:

- If discharge is between 12 to 24 hours a mother can be given help and advice on baby care at the time of the pre-discharge examination.

- If discharge is after 24 hours a mother can be given help and advice about baby care as and when her baby needs cord care, has hygiene needs or is sleeping.

Postnatal checks:

Teaching of the mother and family members:

Newborn born in health facilities should not be sent home in the crucial first 24 hours of life, and postnatal visits should be scheduled. For all home births a visit to a health facility for postnatal care as soon as possible after birth is recommended. In high mortality settings and where access to facility based care is limited, WHO and UNICEF recommend at least two home visits for all home births: the first visit should occur within 24 hours from birth and the second visit on day 3. If possible, a third visit should be made before the end of the first week of life (WHO-UNICEF Joint Statement on Home Visits for Newborn Care).

Some Postnatal Care (PNC) Definitions:

- ✓ **Routine postnatal care** refers to preventive care practices and routine assessments to identify and manage or refer complications for both mother and baby.
- ✓ **Targeted postnatal care** is a postnatal care approach, which defines a set of postnatal care services delivered to both the mother and baby in a minimum of three visits spread throughout the first six weeks

Recommended Schedule of PNC visits in Sierra Leone

- In Sierra Leone ,3 PNC checks/visits are recommended for care of mother and baby :
    - PNC 1 : The first 24 hours;
    - PNC 2 : Day 3 -7; and
    - PNC 3 : 6 weeks post delivery

- For facility deliveries, both mother and baby should preferably be reviewed within one hour of birth and before discharge
- The first assessment should be done as soon as possible after delivery.
- If facility birth the mother and baby should be checked at 1 hour, 6 hours and again before discharge.
- If home delivery refer to health facility as soon as possible within 24/48 hours

Timing of three postnatal checks / Visits

- 1st 24 hours after delivery
- 3-7 days
- 6 weeks

PNC Given to Baby 1st 24 hours after delivery

Counselling

- Cord care
- Hand washing for care giver
- Return date

Check

- Take temperature
- Take and record birth weight
- Do head to toe examination
- Assess for danger signs for baby
- Observe a breast feeding session
- Record in PNC register and mother and child booklet

Provide

- Ensure warmth and put hat on baby
- If pre term encourage skin-to-skin care
- Encourage early initiation of, and exclusive breastfeeding
- Immunization (BCG & birth Polio)
- Tetracycline eye ointment 1%
- Vitamin K

- Treat or refer the infant if any complications are detected

Postnatal Care at Home by Community Health Worker:

Service providers who work at PHU should know, motivate and ensure PNC second and third visit at home by Community Health Workers.

PNC for Mother and Baby at 3-7 days

A community health worker should visit the mother at home within 3-7 days after delivery to ensure that mother and baby are doing well.

Any illness in mother or baby, difficulty in feeding or other child care challenges can be noticed and managed

PNC for Mother and Baby at 6 weeks

At 6 weeks, the mother should bring the baby to the postnatal clinic for routine postnatal check-up for both of them.

The healthcare provider should encourage this visit and confirm the date before discharging the woman and newborn post-delivery

In the baby the health care provider should do the following:

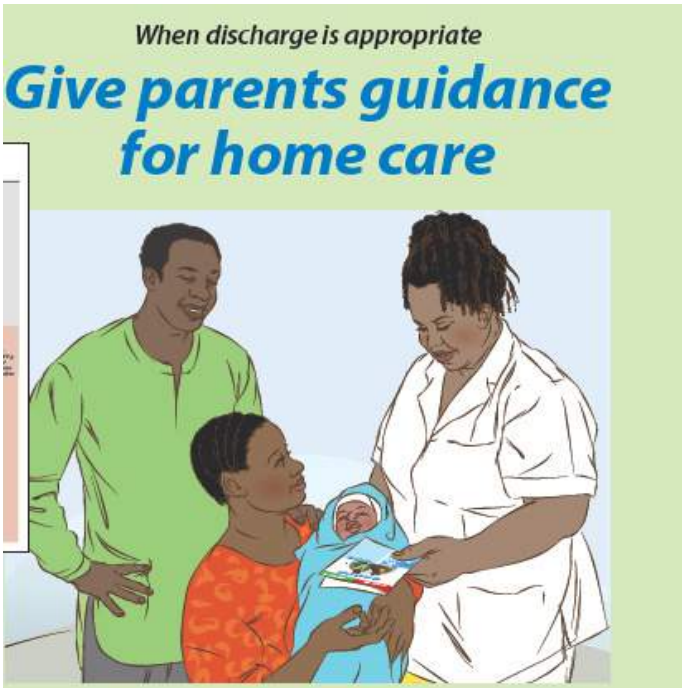
- Confirm well-being and address complaints
- Check weight gain
- Confirm immunizations are up-to-date
- Treat any existing illnesses or refer for specialist care

In the mother the health care provider should do the following:

- Address complaints
- Check uterine involution, vaginal discharge
- Confirm breastfeeding progress
- Confirm use of family planning method, or help the woman decide on which method to use and help her start it.

Facilitation Guide [14]

2. Demonstration



[14] Facilitation Source: American Academy of Pediatrics (APP): Helping Babies Survive – Essential Care for Every Baby (ECEB) – Provider Guide (2014), and Helping Babies Breath (HBB) Provider Guide – 2nd Ed. (2016)

2. Practice Skills

Role Two
Play the role of the provider.
Demonstrate and describe to the mother:

- Applying medication to the eyes
  - Wash hands with soap and water
  - Pull down the lower lid of the eye
  - Place a portion of the ointment inside the lower lid
  - Repeat for the other eye
- Why antibiotics are used in the eyes

Role Two
Play the role of the provider.
Advise the mother about cord care:

- Keeping the cord dry
- Cleaning the cord
- Stopping bleeding

Play the role of provider.
Demonstrate how to inject vitamin K.

- Explain to the mother the need for vitamin K and how it will be given
- Encourage mother to breastfeed her baby for comfort during the injection
- Wash hands with soap and water (use gloves if available)
- Draw up correct dose
- Identify the correct injection site on the doll or manikin
- Clean the site of injection
- Demonstrate the technique for safe disposal of syringes and needles

3.Knowledge Check

In what part of the eye should medicine to prevent eye infections be given?
☐ Inside the upper eyelid
☐ Inside the lower eyelid
☐ In the corner of the eye only

In what part of the eye should medicine to prevent eye infections be given?
☐ Inside the upper eyelid
☐ Inside the lower eyelid
☐ In the corner of the eye only

Following birth in a health facility what should be applied to the umbilical cord?
☐ Nothing, unless a medicine is recommended by the health authority
☐ A clean bandage soaked in alcohol
☐ Dried herbs or other powders

Why should all babies be treated with vitamin K?
☐ To stimulate breathing
☐ To prevent serious bleeding
☐ To prevent infection

4.Discussion

Identify problems and cultural practices that may affect maternal and newborn essential care

Session 9: Management of the Low Birth Weight Baby

Objectives

- To define low birth weight (LBW) babies and describe the problems of LBW
- To discuss feeding of the LBW baby
- To maintain normal body temperature in a LBW baby

All newborns must be weighed even if they were born at home. This can be done at the first postnatal check at the health facility or outreach. Birth weight needs to be measured in the first 24 hours. Health care providers should calibrate/balance their scales before using them to ensure measurements taken are accurate.

Who are Low Birth Weight Newborns?

These are newborns, premature or low birth weight, who weigh less than 2.5kg at birth. They need special care in order to survive because they are prone to a lot of complications including difficulty with breathing, poor temperature control, low blood sugar and metabolic problems.

A small baby is at increased risk of becoming sick and dying if he is discharged before he is breastfeeding well, gaining weight and able to maintain a stable body temperature. **More than one third of newborns who die in Sierra Leone are low birth weight or premature**. The more preterm or smaller the baby, the more likely he/she is to have problems. Very small babies have feeding and breathing difficulties for a long period of time and are at a high risk of death from complications.

Defining the "small baby"

A "small baby" is a baby who is any of the following:

- ✓ born PRETERM between 32 and 36 weeks gestation
- ✓ with a birth weight between 1500 gm. and 2500 gm.

A "very small baby" is a baby who is any of the following:

- ✓ born VERY PRETERM at less than 32 weeks gestation
- ✓ with a birth weight of less than 1500 g.

A "VERY SMALL BABY" needs to be referred for additional care because it is even more vulnerable than the "small baby".

M

The small baby needs:

- Care in a health facility for longer than a term healthy baby as per protocol.
- Help with breastfeeding to prevent hypoglycaemia.
- Feeding on demand, at least every 2-3 hours
- To be kept warm.
- Daily monitoring, including: weighing, measuring temperature, assessing breathing and checking for jaundice. If Jaundice or other dangers refer to hospital
- A small baby can be cared for in a primary health facility as long as he stays well.

To ensure LBW babies survive and develop optimally, they need specialized care. This care is usually provided by trained provider and often involves the use of prolonged skin-to-skin in Kangaroo Mother Care (KMC) Units (if available) with special attention to breastfeeding and special feeding if a baby does not suck well.

The LBW infant's feeding, temperature and blood sugar control, breathing and metabolism are closely monitored through vital signs and investigations carried out at intervals. Depending on the age and condition of the LBW he/she might be breastfed or fed with expressed breast milk through a cup or nasogastric tube. It might be necessary to give the LBW newborn drugs and fluids. These facilities may not available in most of the PHUs.

Babies with birth weights <2000 grams and babies who have low temperatures while in dry clothing and wrapped properly may need prolonged skin-to-skin care to maintain normal body temperature. Prolonged skin-to-skin care also allows frequent breastfeeding and may increase bonding between the mother and baby.

Prolonged skin-to-skin care should be provided as much as possible throughout the day and night. During prolonged skin-to-skin care, the mother can stand, walk and move about freely. Other family members can also provide prolonged skin-to-skin care.

Small or premature babies may have other needs in addition to prolonged skin-to-skin care, including the need for special feeding techniques. Together this care is often called Kangaroo Mother Car. KMC should be provided in an organized program where care is supervised by a provider. Providers who assist mothers with KMC require special training. Most of the PHU do not have KMC. Therefore **"Very Small Babies" less than 1500g** should be referred to hospital having KMC units.

Additional special needs of the small baby

1. Maintaining a normal body temperature in a LBW baby

All small babies need attention to basic thermal care to prevent them from becoming cold. Mothers should be assisted to provide skin to skin care for small babies in the first 24 hours after birth.

Dry the baby thoroughly at birth, cover the head and place the baby skin to skin. Keep mother and baby together for care and examination. Put on a diaper and dry head covering. Place the baby upright on the chest between the breasts. Position the baby with arms and legs flexed, head turned. Secure snugly with a cloth or binder pulled up to the ear to support the head. Close mother's garment over the binder. (Essential Care for Small Babies provider guide – helping babies survive/American Academy of Paediatrics).[10]

2. Special Feeding of a small baby, if unable to suckle

Expressing breastmilk: Mothers may express milk from their breasts to feed babies who are unable to feed from the breast. Also, some mothers may express milk to relieve engorgement. Milk should be expressed at approximately the same frequency as breastfeeding.

Breast milk may be produced in small amounts initially, but production typically increases after 2-3 days. Before expressing milk, mothers should clean their hands with soap and water, and clean their breasts with water but not soap. Collect breast milk in a clean container with a lid if it is to be stored. Keep in a cool place for up to 6 hours, or up to 24 hours if refrigerated. Use freshly expressed milk whenever possible.

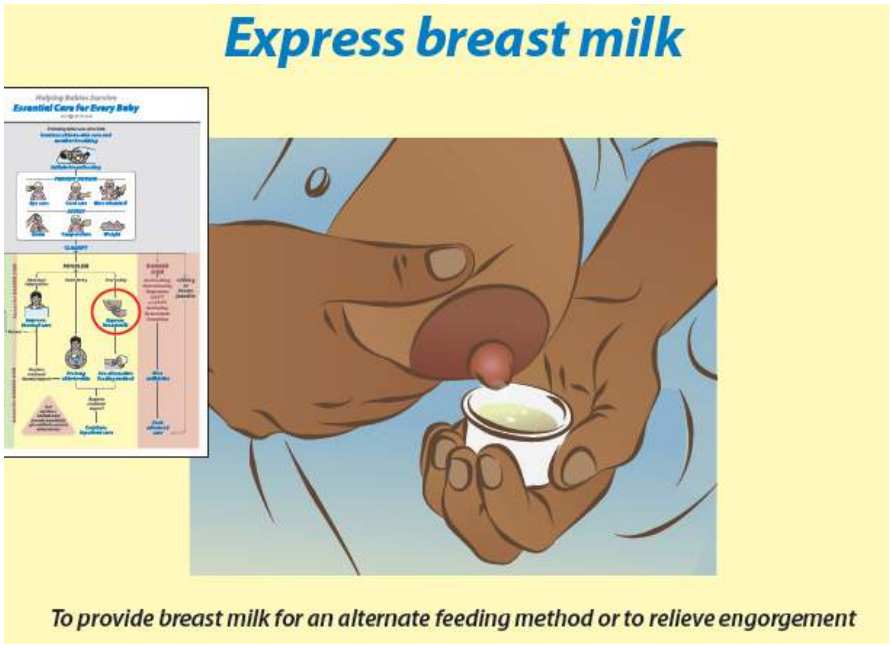
Use an alternative method to feed breastmilk: Some small babies, sick babies, or those with an abnormality such as cleft lip and palate, may have difficulty feeding. They may be able to swallow but cannot suck effectively, or they may suck effectively for a brief period but tire after taking a small amount of milk. These babies may benefit from being fed expressed milk using an alternate method. Milk can be fed with a cup, spoon or paladin as per national protocol.

The baby is ready to feed when awake, looking around, with mouth open and licking. Allow the baby to lick the milk from the cup or other device rather than pouring milk into the mouth. Start with 2-5 mL/kg per feeding and gradually increase the amount.

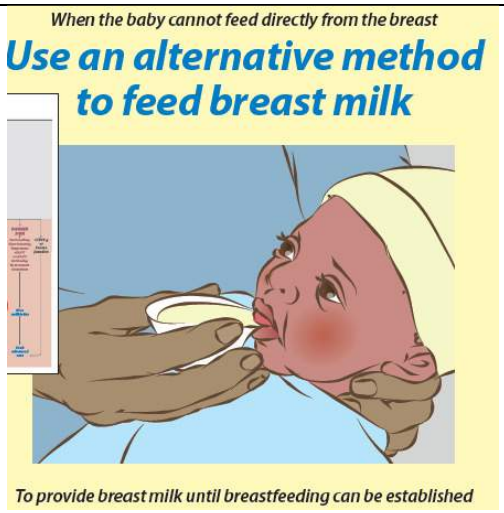
Amounts: The total intake on the day of birth should be 40-60 mL/kg. The intake should increase at least 20-30 mL/kg/day until 150 mL/kg/day is reached. Consider referral for advanced care if a baby is unable to swallow or cannot take these amounts.

Facilitation Guide[15]

1. Demonstration



[15] Facilitation Source: American Academy of Pediatrics (APP): Helping Babies Survive – Essential Care for Every Baby (ECEB) – Provider Guide (2014)



2. Knowledge Check

Fill in the missing words:
Babies with birth weight < _____ grams often require prolonged skin-to-skin care to maintain normal _____. Prolonged skin-to-skin care should continue throughout the day and_____. It may allow frequent _____ and increase bonding between _____and _____. In addition to the mother, other _____ members can also provide skin-to-skin care.

Which of the following babies may benefit from being fed expressed breast milk?
☐ A baby who vomits every feeding
☐ A baby who can swallow but cannot suck effectively
☐ A baby who cannot swallow

When cup feeding a baby, you should do which of the following?
☐ Allow the baby to lick the milk from the cup.
☐ Pour a spoonful of milk into the baby's mouth.
☐ Drip a continuous stream of milk into the mouth.

Select the correct answer:

Which of the following babies may benefit from being fed expressed breast milk?
☐ A baby who vomits every feeding
☐ A baby who can swallow but cannot suck effectively
☐ A baby who cannot swallow

When cup feeding a baby, you should do which of the following?
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3.Practice Skills

Play the role of the provider.
Demonstrate and describe to mother the steps to position and secure a baby for prolonged skin-to-skin care:

- Position the baby upright on the mother's chest between the breasts
- Place the baby in a frog position with flexed arms
- Turn the head to one side
- Cover the genitalia with a diaper
- Secure the baby snugly with a support binder and close mother's shirt

Play the role of the provider.
Demonstrate and describe to the mother the steps in cup or spoon feeding:

- Determine and measure the correct amount of milk for a feeding
- Position the baby semi-upright
- Allow the baby to take the milk from the cup or spoon
- Burp the baby after feeding

Change roles and repeat the exercise.

Play the role of the provider.
Demonstrate and describe to the mother the steps in cup or spoon feeding:

- Determine and measure the correct amount of milk for a feeding
- Position the baby semi-upright
- Allow the baby to take the milk from the cup or spoon
- Burp the baby after feeding

4.Discussion

Identify problems and cultural practices that may affect maternal and newborn essential care

Session 10: Recognition of Danger Signs in the Newborn

Objective:

- To recognise danger signs in the newborn
- To know when and how to refer the newborn to a higher facility

Detect Newborn Danger Signs early and reduce the risk of death

Danger signs are caused by infection or other serious conditions and indicate that a baby is at risk of death. All babies should be assessed for danger signs in the first 90 minutes after birth and at frequent intervals thereafter. A baby with a danger sign needs antibiotic treatment, thermal care and appropriate feeding management. Sometimes they need advanced urgent care.

Danger signs in a newborn

Fast breathing and severe chest in-drawing: Can be due to pneumonia or sepsis.

Fast breathing: When breathing rate is 60 or more than 60 per minute.

Severe chest in- drawing: When the sub-costal area indents with each breath. Babies with breathing problems may also have grunting which is made each time the baby breaths out, blue color of the skin, or blue color inside the mouth on the mucous membranes cyanosis). These signs indicate that baby is not getting enough oxygen.

Temperature that is too low or high: Under 35.50C/ 960F or high over 37.50C/ 99.50F is a danger sign and is a sign of infection. A temperature that is 35.50 - 36.40C (960 – 97.50F) and does not rise with re-warming (e.g. skin-to-skin care) is also a danger sign.

Not feeding well: May be due to infection, prematurity, or other serious problems. Healthy babies usually demonstrate “ready to feed” signs in every 2-3 hours. A baby who is not feeding or vomits large quantities of each feeding can quickly become dehydrated and his/her blood sugar level decreases.

Movement when stimulated or no movement: May also be called floppiness or lethargy, may be a sign of infection or other serious problems.

Convulsions or history of convulsion: Convulsions are abnormal expressions of face and rhythmic movements of the limbs that cannot be stopped by holding the limb, may result from infection or low blood sugar. Baby may be drowsy or unconscious.

Umbilical redness extended to skin: The inflammation extends beyond the umbilicus to the abdominal wall.

Visible Jaundice on Day of Birth: If jaundice appears on the first day- recognize this as severe jaundice and begin treatment and seek advanced care

Which newborns to refer to higher facilities:

Who to Refer:

- All Newborns who survived after prolonged resuscitation must be referred to higher facility for further assessment and management
- Newborn with any Danger Signs stated above
- **A "very small baby" is a baby (**born VERY PRETERM at less than 32 weeks gestation, OR more than 2 months early OR with a birth weight of less than 1500 g.
- If a baby has a **Hypothermia** (temperature of less than 35.5°C), the baby will only need to be referred if attempts over 60-90 minutes to warm the baby with skin-to-skin are not effective.

Pre-referral Management for Different Classification and Signs (WHO, PCPNC 2015)		
Classification	Signs	Pre/during referral
Very small baby	• Birth weight < 1500 gram • very preterm: < 32 weeks or > 2 months early	Ensure extra warmth during referral Ensure appropriate caloric intake
Small baby with feeding difficulties persisting for 3 days	• Birth weight :1500-2500 gram • Preterm: 32-36 weeks or 1-2 months early	
Not able to feed	• Not suckling (after 6 hours of age) • Stopped feeding	
Severe jaundice (J6)	• Yellow skin on face and only < 24 hours old • Yellow palms and soles and ≥yellow palms a	Encourage breastfeeding on the way If feeding difficulty give EBM by cup
Possible gonococcal eye infection	• Eyes swollen and draining pus • Not improving or getting worse after 2 days	Treat with appropriate antibiotic (if not already done so in last 2 days)
Local umbilical infection	• Red umbilicus or skin around it • Not improving or getting worse after 2 days	Could add treatment here if not already done
Local skin infection	• Less than 10 pustules • Not improving or getting worse after 2 days	Could add treatment here

Possible serious illness	• Fast breathing (more than 60 breaths per minute) • Slow breathing or gasping (less then 30 breaths per minute) • Severe chest in-drawing • Not feeding well • Grunting • Fits or convulsions • Abdominal over distension • Diffuse cyanosis • Heart rate constantly > 180/min (cons) • Floppy or stiff • Temperature > 37.5 degrees Celsius • Temperature < 35.5 degrees Celsius or not rising after rewarming • Umbilicus draining pus or umbilical redness and swelling extending to skin • More than 10 skin pustules or bullae, or swelling, redness, hardness of skin • Bleeding from stump or cut • Pallor	Pre referral: first dose of Injectable Ampicillin and Inj. Gentamycin and URGENTLY Refer to hospital. Give ampicillin (50 / kg body weight) and IM Gentamycin (Dose : 5-7.5 mg / kg , for low birth weight babies, 3-4 mg/ kg) , prior to transfer Also: \ rewarm and keep warm during referral Treat local umbilical infection before referral Treat skin infection before referral Stop the bleeding
Malformation	• Club food • Cleft palate or lip • Odd looking, unusual appearance, • Open tissue on head, abdomen, back, perineum or genital areas • Other abnormal appearance	Refer for special treatment / evaluation if available. Ensure feeding (if needed use alternative methods) For open tissue: cover with sterile tissues soaked in sterile saline before referral

Seeking Advanced Care:

A baby who has a Danger Sign, is <1500 g or has severe jaundice needs advanced care to improve the baby's condition. In some cases, advanced care can save the baby's life. Advanced care may include special monitoring. Special monitoring of the baby's vital signs and activities, such as body temperature and feeding, will determine when life-saving interventions should be used. Advanced care may include special treatments. For example, a baby treated with antibiotics will need to complete a full course of antibiotics (usually at least 5 days). If a baby has poor feeding, intravenous fluids may be needed. If a baby has a breathing problem, oxygen may be needed. If a baby has convulsions, special medication may be needed.

A baby with a birth weight <1500 g needs advanced care that may include intravenous fluids or tube feedings, and special techniques or devices to maintain normal temperature. A baby with severe jaundice needs special treatment with phototherapy or an exchange transfusion. Before referring a baby for advanced care directly contact the facility that will receive the baby. Send a referral note with the baby. During the transport, the baby should be kept warm with skin-to-skin care with the mother and encouraged to breastfeed.

Infection in a baby can cause death. A baby with a Danger Sign is at high risk for having an infection and needs urgent antibiotic treatment and advanced care. Injectable Ampicillin and gentamicin are used to treat infection in babies.

Give the **first doses** (first dose of Injectable Ampicillin is 50mg / kg body weight and IM Gentamycin is 5-7.5 mg / kg , for low birth weight babies, 3-4 mg/ kg) of antibiotics as soon as possible after the identification of a Danger Sign because early treatment may prevent death. The doses will depend on the weight of the baby and the antibiotics used.

Steps to take in referring a newborn for Advanced Care

Step 1: Communication with parents and organization of referral

- ✓ Explain to the mother / family the reason for referral and get their approval
- ✓ Write a referral letter- provide health care provider's name and title.
- ✓ Communicate with the referral centre by phone and get the name of the person you talked with
- ✓ Arrange transportation - equipment and logistics in referral ambulances. Transport with mother if possible. Encourage breastfeeding during the journey if

baby is well enough

A sick newborn ideally be referred in a normal ambulance of national ambulance service with necessary equipment and trained nurse (or in in a specialised **new-born ambulance)**. Necessary pre-referral antibiotic should be given and along with a referral note. If possible, there should be continuous supply of oxygen, IV fluid, resuscitation set (bag and mask) and emergency drugs.

Step 2: Give pre-referral treatment if indicated

Provide appropriate pre-referral IM antibiotics (Ampicillin and Gentamycin) and other medication as per above table.

Step 3: Keep the baby warm on the way to the hospital

It is a Danger Sign if a baby has a temperature of less than 35°C or the baby's temperature does not rise after the "rewarming" procedure has been followed. This baby needs to be referred urgently to another health facility.

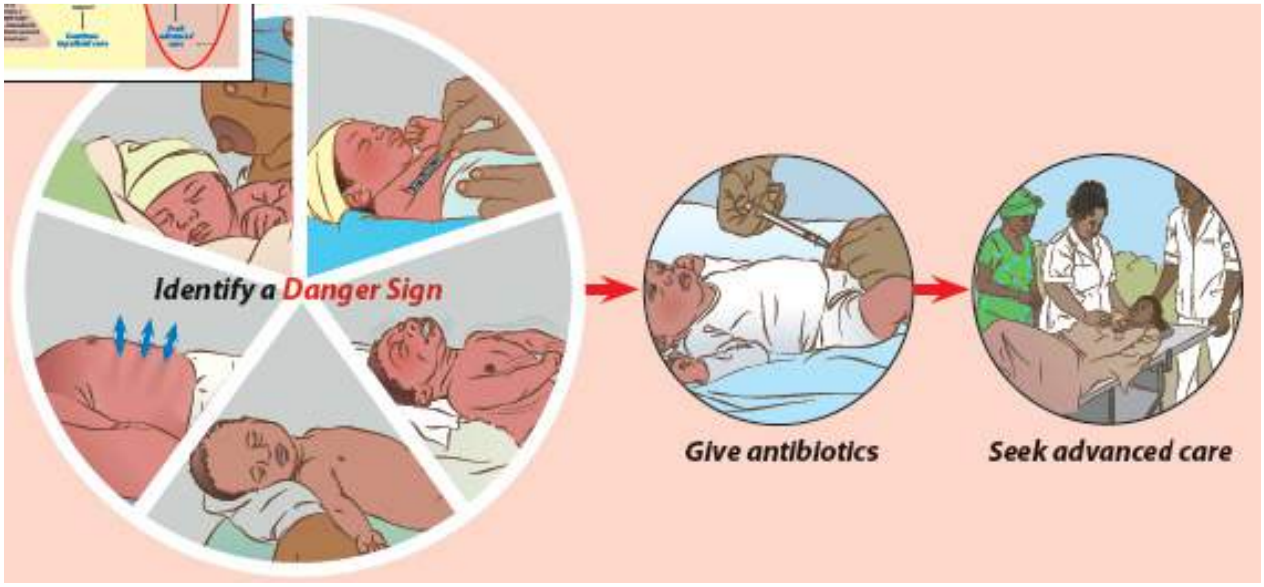
- ✓ During referral the baby should be kept in skin-to-skin contact with the mother (or another person accompanying the baby) or should be wrapped in a cloth that has been pre-warmed to approximately 37°C.
- ✓Cover the baby with a blanket and cover his/her head with a cap
- ✓Protect the baby from direct sunshine

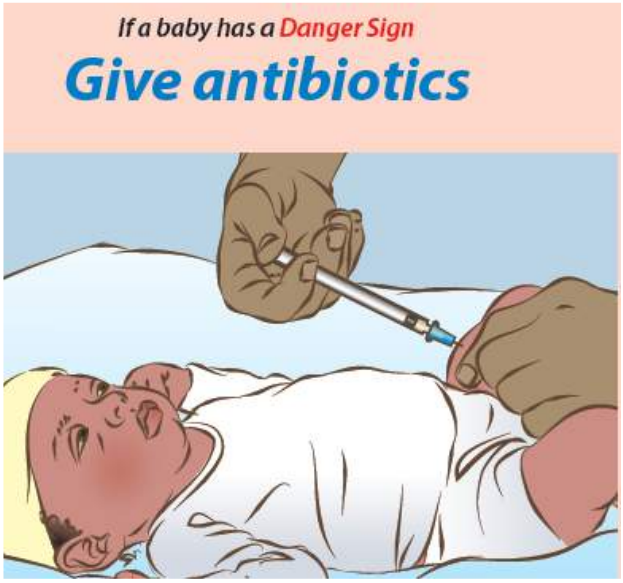
Step 4: Continue feeding on the way

The newborn baby should be breastfeed continuously on the way to hospital unless the baby is too sick to breastfeed. If the baby does not breastfeed and journey is more than 3 hours, consider giving expressed breast milk by cup.

Facilitation Guide [16]

1. Demonstration





2. Knowledge Check

[16] Facilitation Source: American Academy of Pediatrics (APP): Helping Babies Survive – Essential Care for Every Baby (ECEB) – Provider Guide (2014)

Fill in the missing words:

Danger Signs are caused by _____ or other serious conditions. A Danger Sign indicates that the baby is at risk of _____. Babies must be assessed for Danger Signs within the first _____ minutes after birth. If a Danger Sign is detected, the baby must be given _____ urgently. The baby must also be referred for _____ care.

A breathing rate faster than ___ breaths per minute is a Danger Sign. Body temperatures that are too low (<____°C) or too high (> ____°C) are Danger Signs. A baby who is not _____or vomits large quantities has a Danger Sign. If a baby does not move even when _____, this is a Danger Sign. Rhythmic movements of the arms and legs that cannot be stopped by holding are called _____, and are a Danger Sign.

Select the correct answer:

When should a baby be given antibiotics?

- ☐ If born too early
- ☐ When a Danger Sign is present
- ☐ If the baby appears to be in pain

When should the first dose of an antibiotic be given?

- ☐ After arrangements have been made for transfer for advanced care
- ☐ As soon as possible after a Danger Sign has been identified
- ☐ After all family members have been contacted

What determines the dosage of a specific type of antibiotics?

- ☐ Time after birth
- ☐ Body weight
- ☐ Size of the available syringe

Note: If

Note: If ampicillin or gentamicin are used in your facility, the chart on this page can bee duplicated and posted for future reference. **IF OTHER ANTIBIOTICS ARE USED, YOU SHOUD CREATE A CHART FOR THOSE ANTIBIOTICS AND POST THIS CHART IN YOU FACILTY.**

Weight	**Ampicillin IM** Dose: 50 mg per kg every 12 hours Add 2.5 ml sterile water to 500 mg vial - 200 mg/ml	**Gentamicin IM** **Dose:** 5 mg per kg every 24 hours if term; 4 mg per kg every 24 hours if preterm 20 mg per 2 ml vial - 10 mg/ml
1.0 - 1.4 kg	0.35 ml	0.5 ml
1.5 - 1.9 kg	0.5 ml	0.7 ml
2.0 - 2.4 kg	0.6 ml	0.9 ml
2.5 - 2.9 kg	0.75 ml	1.35 ml
3.0 - 3.4 kg	0.85 ml	1.6 ml
3.5 - 3.9 kg	1 ml	1.86 ml
4.0 - 4.4 kg	1.1 ml	2.1 ml

Practice Skills

- Roll play naming the danger signs
- Calculate the dose for the birthweight given

Session 11: Management of Newborn Sepsis and Jaundice

Objectives

- To recognise and manage neonatal infections
- To recognise and manage jaundice in newborns

Neonatal Infections

Neonatal infections are the leading cause of newborn deaths. They include
- Neonatal sepsis (blood infection),
- Pneumonia
- Meningitis (infection of the lining of the brain).

Neonatal infections cause about 38% of neonatal deaths in the 1st week of life in sub-Saharan Africa.

There are certain **risk factors** for neonatal infections, which are conditions whose presence increases the likelihood of a newborn developing infections including sepsis. They could be maternal or newborn factors.

Classification of infections as per New WHO /UNICEF Guideline

- Critical Infection
- Clinically Severe Infection
- Fast Breathing

Risk Factors:

Maternal risk factors for neonatal infections include:

- High fever (temperature >37.9 C) before delivery or during labour.
- Rupture of membranes more than 18 hours before delivery.
- Foul-smelling amniotic fluid.
- Failure to observe universal infection prevention procedures

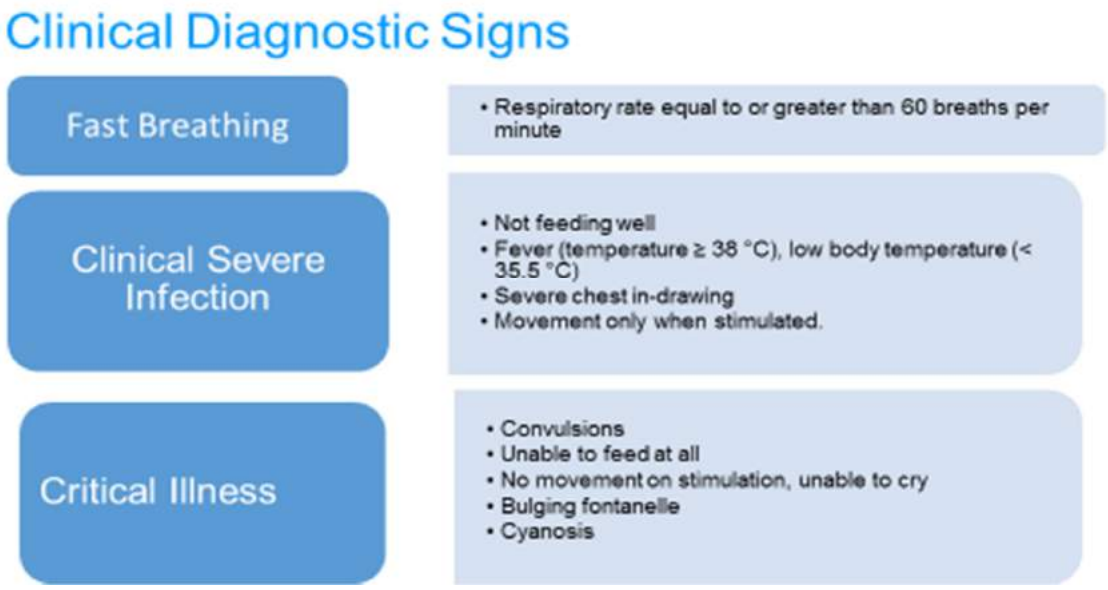
Newborn risk factors for neonatal infections include:

- Prematurity
- Low birth weight
- Birth asphyxia
- Hypothermia

Prevention of Neonatal Infections

Prevention of neonatal sepsis is essential for the reasons mentioned earlier. It involves

- Observing universal prevention protocols during labour and the postnatal period
- Routine care of the newborn
- Early diagnosis and management of neonatal infections



Management of Newborn Infections (as per WHO IMCNCI)

- Assess and classify sick newborn as per 2017, PSBI (Possible Severe Bacterial Infection) WHO/UNICEF, as per the above table
  - If baby has **Critical Illness** or **Clinical Severe Infection**, provide 1st dose of Ampicillin and Inj. Gentamycin and URGENTLY Refer to hospital. Give ampicillin (50 / kg body weight) and IM Gentamycin (Dose : 5-7.5 mg / kg, for low birth weight babies, 3-4 mg/ kg), prior to transfer
- Newborn /young infant **7-59 days** with only **Fast Breathing** should be treated at PHU with **oral amoxicillin twice daily for 7 days** with IMNCI trained health worker. They do not need hospitalization.
- **BUT** , Newborn **less than 7days** with only **Fast Breathing** should be referred to hospital and receiving referral treatment

Localized Infections in a Newborn

Signs of localized infections:

- Less than 10 skin pustules
- Redness extending to the peri-umbilical area
- Umbilicus draining pus
- Oral thrush
- Painful/warm swollen joints
- Eye discharge

Management of Local Infection and Eye Infection

- Treatment for local infections- Refer to basic paediatric protocol.
- Treatment for eye infections- Refer to basic paediatric protocol.
- Provide supportive care including vital signs and feeding.

Encourage the mother to breastfeed frequently to prevent hypoglycaemia. If unable to feed orally, give expressed breast milk.

Management of Jaundice

If jaundice appears on the first day, or extends up to palms & soles at any time, recognize this as Severe Jaundice and REFER to Hospital.

Background information

Jaundice is the yellow discoloration of the skin caused by high level of bilirubin in the blood that occurs due to increased breakdown of red blood cells after birth and decreased excretion due to immaturity of the liver enzyme. High level of bilirubin can enter the developing brain and can cause brain damage with lifelong neurologic sequel in infants who survives, and even death if left un-treated. About 60% term and 80% preterm babies develop jaundice during the first week of life. Jaundice first appears on the face then progresses down the body. In most cases the jaundice is not harmful (physiological, where skin and eyes becomes yellow) and does not require any treatment.

But jaundice that appears on the first day of life or jaundice extending up to palm and sole at any time is severe jaundice (pathological). Abnormal jaundice may be due to serious bacterial infections, hemolytic disease of the newborn (Rh and ABO incompatibility), liver disease, hypothyroidism, congenital syphilis or other intrauterine infection.

Detection of jaundice

Pressing one finger on the baby's forehead, sternum, abdomen, palm and sole and observing if the skin is yellow when pressure is released.

Helpful hint: Jaundice can be difficult to detect in babies in Sierra Leone. Blanching the skin with pressure of a finger helps to detect jaundice in these babies. Jaundice should be examined in broad day light.

Characteristics of neonatal jaundice:

Physiological	Pathological
• Jaundice that appears on 3rd day, baby remains otherwise healthy • Bilirubin level rises slowly • Level rarely goes above 15 mg/dl • Jaundice that clears spontaneously within 7-10 days of life	• Jaundice that appears on 1st day • Bilirubin level rises rapidly >0.5mg/dl/hour or 10mg/dl/day. • Jaundice lasting longer than 2 weeks in terms and 3 weeks in preterm • Jaundice extending up to palm and sole with pale stool

Investigations for abnormal jaundice

All newborns should be monitored for the development of jaundice, which should be confirmed by a bilirubin measurement, which is not done at PHU level.

If jaundice appears on the first day, or extends up to palms & soles at any time, Recognize severe jaundice and REFER to hospital immediately. Pathological Jaundice is managed either by Phototherapy and Exchange Transfusion

Facilitation Guide [17]

- **Demonstration**

2. Knowledge Check

Select the correct answer:

In addition to premature babies and babies with infections, which are most likely to develop severe jaundice?
- ☐ Babies who feed poorly
- ☐ Baby girls
- ☐ Babies of older mothers

Where does jaundice first appear?
- ☐ Back
- ☐ Abdomen
- ☐ Head

Jaundice is severe when it appears on the face during the first day after birth and what other body area at any time?
- ☐ Back and abdomen
- ☐ Legs and arms
- ☐ Palms and soles

What is an early sign of Sepsis?

- ☐ **Fast breathing**
- ☐ **Fever >38 C**
- ☐ **Unable to Feed**

3. Practice Skills

Play the role of the provider.
Demonstrate and describe to the mother how to check for jaundice:
- Recognizing severe jaundice on the first day
- Recognizing severe jaundice after the first day

- Practice recognition of early and severe sepsis

4.Discussion

Identify problems and cultural practices that may affect maternal and newborn essential care

[17] Facilitation Source: American Academy of Pediatrics (APP): Helping Babies Survive – Essential Care for Every Baby (ECEB) – Provider Guide (2014), and Helping Babies Breath (HBB) Provider Guide – 2nd Ed. (2016)

Manual Summary

This **Essential Newborn Care Manual** was designed to equip maternal and child health care providers with the knowledge and skills they will require in providing quality postnatal care for mothers and their newborns.

In Annex 4 there is an "Action Plan" for use at each Peripheral Health Unit.
Providers are encouraged to look at the table and discuss with colleagues the plan to implement the Essential Newborn Care Guidelines

Key points to remember in this module are listed in the fact box below

- The meaning of postnatal period and postnatal care
- The importance of conducting postnatal checks in newborn
- The schedule of postnatal checks in Sierra Leone
- To describe the post natal period and discuss the importance of postnatal checks for neonate
- To provide essential newborn care and newborn resuscitation
- On routine newborn care and care for newborn with mothers having HIV/AIDS, delivery by instrument
- Care of the small newborn, including premature and low birth weight
- Sick newborn care including low birth weight, sepsis, jaundice, convulsion and other complications
- Setting up newborn corner at all PHUs (MCHP, CHP and CHC)
- Mechanism to refer a sick newborn to hospital

Annexes

Annex 1A. Guidelines for Setting up a Newborn Care Corner

Newborn Care Corner: Labour room and obstetric OT in every facility at every level are required to have appropriate facility for providing essential care to newborns and for resuscitating those who might require it. Thus, Newborn Care Corner refers to the space within the labour room or obstetric OT with essential equipment and logistics for providing immediate care to all newborns. Newborn Care Corner is MANDATORY for all PHU's (MCHP, CHP, CHC) where deliveries take place. Services provided in the Newborn Care Corner include:

- Essential care at birth.
- Examination of newborn
- Resuscitation.
- Provision of warmth.
- Early initiation of breastfeeding.
- Weighing the neonate.

Configuration of the corner

- Clear floor area should be provided in the room for newborn care corner. It should be within the labour room/obstetric OT, 20-30 sq. ft. in size, where a radiant warmer is kept.
- Resuscitation kit should be placed in the radiant warmer (if available). Availability of oxygen source is desirable but not essential.
- The area should be away from draughts of air and should have appropriate power connection for plugging in the radiant warmer.

Details of services provided and requirement for training, equipment and supplies are available in Annex 1B below.

Annex 1B: Human Resource, Equipment and Training for Newborn Care Corner

Setting up of Newborn Care Corners in the labour room and obstetric OT

Labour room and obstetric OT in every facility at every level are required to have appropriate facility for providing essential care to newborns and for resuscitating those who might require it. Thus, Newborn Care Corner refers to the space within the labour room or obstetric OT with essential equipment and logistics for providing immediate care to all newborns.

Services at the corner

Newborn care corner provides an acceptable environment for all infants at birth. Services provided in the Newborn care corner include:

- Routine/immediate care at birth
- Resuscitation
- Provision of warmth
- Early initiation of breastfeeding
- Weighing the neonate
- Quick baby-check

Configuration of the corner

- Clear floor area should be provided for in the room for newborn care corner. It should be within the labour room, 20-30 sq. ft. in size, where a radiant warmer is kept
- Resuscitation kit should be placed in the radiant warmer. Availability of oxygen source is desirable but not essential
- The area should be away from draughts of air and should have appropriate power connection for plugging in the radiant warmer

Equipment and renewables required for the corner

Item No.	Item description	Essential/ Desirable Quantity	Quantity
1	Open care system: radiant, fixed height, with trolley, drawers, 02-bottles	E	1
2	Bag and Mask, neonate, 250-500ml include both term and preterm masks	E	1
3	Hanging Spring Scale (small size), operation understood by all health workers.	E	1
4	Room Thermometer	E	1
5	Sterile Gloves	E	1

6	Penguin bulb suction device	E	
7	Clean Towels for drying and wrapping the baby (at least two towels / baby)	E	
8	Sterile equipment for cutting and tying the cord	E	
9	Tube, feeding, CH07, L40cm, sterile, disposable.	E	
10	I/V Cannula 24 G, 26 G	E	
11	Oxygen cylinder 8 F	D	1
12	Pump suction, foot operated	D	1
13	Light examination, mobile, 220-120-V	D	1

Human Resources

Staffing

One medical officer/staff nurse is desirable in addition to the one conducting the delivery to provide appropriate care at birth.

Training

- All staff posted at the labor rooms should be trained in providing essential care at birth and basic resuscitation (Delivery room management of newborn).

- Doctors and nurses working at the labor rooms/OT should also have 4 days skill based training on Essential Newborn Care and selected care of Sick Newborn.

Annex 2: Cleaning and Decontamination of Equipment

Why is decontamination done in addition to cleaning?

Life-threatening infections like HIV, Hepatitis, and other microorganisms can be prevented by decontamination

Decontamination of all instruments also keeps both the health care providers and the patients' safe from many types of infections.

The Three bucket system for intermediate, semi-critical devices

> "Whilst not recommended as best practice many health care facilities still soak instruments in 0.5% chlorine for 10 minutes in the absence of better high level disinfectants. It is essential that the first step in the process is the washing of the instruments using clean water and detergent or preferably an enzymatic detergent. The instruments may then be dried and transferred to a second bucket of 0.5% chlorine, prepared within the last 24 hours and fresh (i.e. not previously used). They should be soaked for 10 minutes fully submerged. Record the time the process starts and do not add any other instruments once the time has been recorded. Transfer to clean water and rinse thoroughly prior to drying. Instruments should be stored in a covered tray or other receptacle." (pg. 50) National Infection Prevention and Control (IPC) Guidelines – Sierra Leone (2015)

Steps of decontamination

Preparatory steps:

- **Make the Chlorine solution before starting:** 0.5% Chlorine solution should be made by mixing 100 gram of Chlorine in 5 liter of clean water (20 gram of Chlorine in 1 liter) in a red plastic bucket and kept covered with the lid.
    - What you need: Water, bleaching powder, measuring cup, eye protector, strainer, stirrer, mackintosh, utility gloves, bucket with lid (red and green color). Further details are below.
- **Wear PPE** (a thick plastic apron, thick rubber gloves, a surgical mask, eye protection,(goggles or face shield)
- **Remove any gross soiling on the instrument by rinsing it in water**

Step 1: Bucket One: After use, all instruments should be cleaned with detergent and water and then rinsed. Open the instrument like scissors, forceps fully apart and immerse all parts in warm water with a detergent (biodegradable, noncorrosive, nonabrasive, low-foaming and free-rinsing) or enzymatic cleaner. Wash the

instruments with a long handled brush to reduce risk of sharps injury and to prevent splashing keep the items being washed under the surface of the water.
Rinse in clean water.

Step 2: Bucket Two: Immerse equioment in a strainer within this bucket filled with the prepared 0.5% chlorine solution. In case of instruments with many parts, they should be dismantled as far as possible and immersed afterwards. It's important for all instruments to be completely immersed and the bucket is kept with lid cover.

Note: The instruments should be kept immersed for at least 10 minutes after the last instrument is immersed in the chlorine solution.

Step 4: Bucket 3: After 10 minutes in the chlorine solution, the instruments should be picked up from the perforated strainer and rinsed thoroughly with clean water.

Step 5: Instruments can be further disinfected by sterilization/autoclaving, or boiling for 20 minutes.

General Rules for Chlorine Preparation (To safeguard Concentration)

1. Follow manufacturer's instructions for preparation

2. Do not use unlabeled containers from stores or pharmacies

3. Check correct name, manufacture date, expiration date, and stock strength

4. Have a poster at preparation area for easy reference

5. Clearly label date/time of preparation of chlorine solution

6. Change chlorine solution **every 24 hours** OR if visible disturbed/soiled/turbid or whichever comes first and keep the solution out of the sunlight!

7. Ask for help when in doubt

8. Use only 0.5% solution for decontamination

Note: A detailed discussion of the preparation of a 0.5% chlorine solution can be found in Annex 2 of the 2015 National Infection Prevention and Control (IPC) Guidelines for Sierra Leone.

How to make chlorine solution

1. Using liquid household bleach

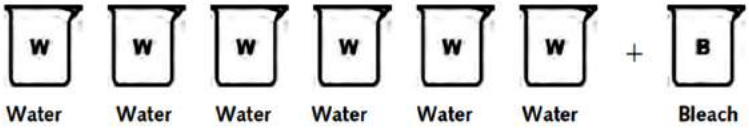
Chlorine in bleach comes in different concentrations. You can use any type of bleach, no matter what the concentration, to make a 0.5% chlorine solution by using the following formula:

[% active chlorine in liquid bleach ÷ 0.5%] - 1 = parts of water per part bleach

Note that "parts" can be used for any unit of measure (e.g., ounce, liter, or gallon) and need not even represent a defined unit of measure (e.g., a pitcher or container may be used).

Example: To make a 0.5% chlorine solution from bleach with 3.5% active chlorine, the calculation is as follows:

[3.5% ÷ 0.5%] - 1 = [7] - 1 = 6 parts water for each part bleach:



Therefore, you must use six parts water to one part bleach.

Annex 3: Bag and mask ventilation – skill-check

Complete this evaluation with learners before they attempt the OSCE evaluations. Use the comments below the numbered steps to score the performance. Note the number of steps done correctly on the first attempt. Give feedback to the learner. Repeat the evaluation until all steps are done correctly.

	Done	***Not done***
1. Check equipment and select the correct mask Test function of bag and mask. Make sure mask fits the baby's face.		
2. Apply the mask to make a firm seal Extend the head, place mask on the chin, then over the mouth and nose. A firm seal permits chest movement when the bag is squeezed.		
3. Ventilate at 40 breaths per minute The rate should not be less than 30 or more than 50 breaths per minute.		
4. Look for chest movement Check that every ventilation breath produces chest movement.		
***5. Improve ventilation if the chest does not move*:**		
a) Head – reapply mask and reposition head		
b) Mouth – clear secretions and open the mouth		
c) Bag – squeeze the bag		

Score on first attempt _____ of 7

All steps done correctly _____ (facilitator initials)

Annex 4: Action Plan Template for the Implementation of Essential Newborn Care Activities at Peripheral Health Units

NAME OF FACILITY:		DATE:
PERSON(S) RESPONSIBLE		
NAME	DESIGNATION	CONTACT NUMBER

KEY ACTIVITIES TO IMPROVE	WHAT ARE THE CHALLENGES	WHAT IMPROVEMENT WILL I MAKE?	CHANGES TO BE MADE BY…(DATE)
Compliance to hand hygiene protocol			
Effective processing(disinfection) of equipment			
Preparation for birth			
Delayed cord clamping			
The golden minute			

Ventilation with bag and mask			
Steps in improving ventilation			
Continuing skin to skin for one hour after birth			
Initiation of breastfeeding in the first hour			
Preventing disease – eye care, cord care, vitamin K within 90 minutes			
Assessment of baby – examine baby, weigh and record temperature within 90 minutes			

Supporting breastfeeding and giving advice about breastfeeding problems			
Improving thermal care			
Prolonged skin-to-skin			
Expression of breastmilk and feeding the low birth weight baby			
Giving parental guidance for home care and education on danger signs			
Recognition of danger signs **Recognition signs of sepsis and jaundice**			

Key References

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