



**Federal Ministry  
of Health**

**NATIONAL GUIDELINE FOR  
BASIC  
NEWBORN CARE**



November 2021 | First Edition



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of Health**

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**BASIC**  
**NEWBORN CARE**

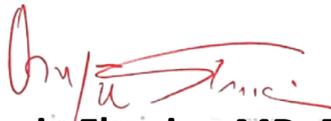
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# FOREWORD

Each year, over seven million babies are born in Nigeria, of which 240,000 die in their first month of life, with 94,000 lost on the day of birth. Though the country has made modest progress in reducing overall child mortality, there has been no significant decline in neonatal mortality rate. To achieve this goal the three main causes (Prematurity, Birth Asphyxia & Infections) of neonatal mortality need to be addressed.

The Global "Every Newborn Action Plan" underscores the need to focus on newborn interventions at the time of birth, for the greatest impact. According to the 2018 NDHS, delivery at health facility amounts to 39% and births attended to by skilled health care providers are 43%. Current interventions to address this weakness at this community and primary level of care, lack structured coordination. This National Guideline for Basic Newborn care (NGBNC) is developed to provide clear and structured guidelines, services and interventions to be delivered at community and primary levels of care, nationwide.

I therefore call on academia, professional associations, partners, civil society groups, donors, the private sector and other stakeholders, to work with government at community and primary levels, to implement the National Guideline for Basic Newborn Care in Nigeria, as a tool to support the achievement of reduction in neonatal mortality.



**Dr. Osagie Ehanire, MD, FWACS**  
Honourable Minister for Health

## ACKNOWLEDGEMENT

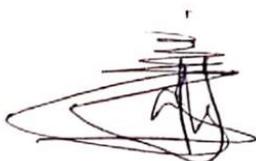
There is no doubt that, Nigeria under-five and neonatal mortality is remains unacceptably high. Thus, necessitate development of the National Guideline for Basic Newborn Care as a crucial turning point in the bid to end preventable stillbirth as well as newborn deaths.

The Federal Ministry of Health acknowledges all stakeholders who contributed invaluable to the development of the document.

I wish to sincerely recognize the outstanding contributions of the Nigeria Society of Neonatal Medicine (NISONM), Paediatric Association of Nigeria (PAN), Departments and Agencies of Government as well as the Development partners, to actualize Nigeria's quest towards providing quality care for the newborn.

Worthy of note is the immense support and collaboration from UNICEF and relevant Partners, who teamed up with the Child Health Division of Family Health Department of Federal Ministry of Health to actualize the development and production of this document.

My sincere appreciation goes to the officers of Child Health Division of the Department of Family Health for the concerted effort demonstrated from initial planning to development of the entire document. In these regards, the tireless efforts of Dr Stella NWOSU, Head, Child Health Division and the Newborn Desk led by Dr. Ovuoraye John are well recognized. Their tremendous commitment and unrelented efforts are highly commendable.



**Dr. Salma Ibrahim Anas-Kolo, MBBS, MWACP, FMCPH**  
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# ACRONYMS

<b>ANC</b>	Antenatal Care
<b>BCG</b>	Bacille Calmette – Guerin
<b>BEMoNC</b>	Basic Emergency Obstetrics Newborn Care
<b>BPM</b>	Beats per minute
<b>CHEW</b>	Community Health Extension Worker
<b>CHIPS</b>	Community Health Influencers, Promoters and Services
<b>CHW</b>	Community Health Worker
<b>CHX</b>	Chlorhexidine
<b>CORPs</b>	Community Resource Persons
<b>COVID -19</b>	Corona Virus Disease of 2019
<b>CSM</b>	Cerebrospinal Meningitis
<b>DT</b>	Dispersible Tablet
<b>EBF</b>	Exclusive Breastfeeding
<b>EBM</b>	Expressed Breast milk
<b>ECEB</b>	Essential Care for Every Baby
<b>ENC</b>	Essential Newborn Care
<b>ENCC</b>	Essential Newborn Care Course
<b>ECSB</b>	Essential Care for Small Baby
<b>G</b>	Gram
<b>HBB</b>	Helping Babies Breathe
<b>HCP</b>	Health Care Provider
<b>IM</b>	Intramuscular
<b>ITN</b>	Insecticide Treated Net
<b>KMC</b>	Kangaroo Mother Care
<b>KG</b>	Kilogram
<b>LBW</b>	Low Birth Weight
<b>LLIN</b>	Long Lasting Insecticide Treated Net
<b>MG</b>	Milligram
<b>ML</b>	Millilitres
<b>NURTW</b>	National Union of Road Transport Workers
<b>OPV</b>	Oral Polio Vaccine
<b>PHC</b>	Primary Health Care/Centre
<b>PMTCT</b>	Prevention of Mother to Child Transmission
<b>PPE</b>	Personal Protective Equipment
<b>PSBI</b>	Possible Severe Bacterial Infection
<b>SBA</b>	Skilled Birth Attendant
<b>TBAs</b>	Traditional Births Attendants
<b>UHC</b>	Universal Health Coverage
<b>VCMs</b>	Vaccine Community Mobilisers
<b>VHFs</b>	Viral Haemorrhagic Fevers
<b>VHWs</b>	Village Health Worker
<b>WRNP</b>	Where Referral is Not Possible

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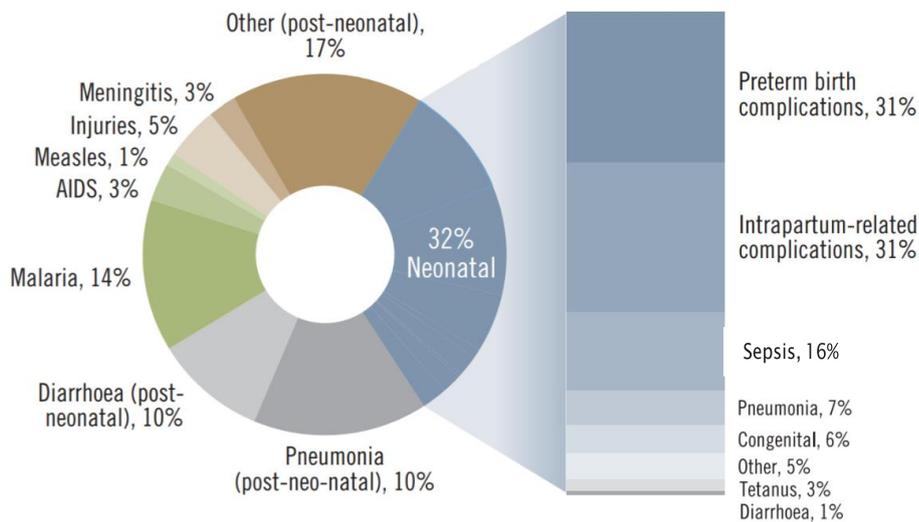
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# INTRODUCTION

Each year in Nigeria over seven million babies are born, of which 240,000 die in their first month of life with 94,000 dying on the day of birth. Although, the country has made some progress in decreasing child mortality, there has been no significant decline in neonatal mortality rate. Neonatal mortality contributes up to 32% of Under 5 mortality, with the leading causes of death being complications related to prematurity, perinatal asphyxia, infections, and neonatal jaundice. The first day of birth is the riskiest day of life because it is associated with numerous complications during delivery. About 39% of deliveries occur at the health facility while 59% are home births and only 43% of the deliveries are attended to by skilled birth attendants, significant numbers of whom are not skilled to prevent/manage complications from birth asphyxia, prematurity, birth injury and infections (NDHS 2018).

There are three (3) levels of health care delivery system namely Primary, Secondary and Tertiary and each is expected to complement the other. Of great importance is the community where 70% of the population resides and the closest to the first level of health care delivery, the Primary health care. Unfortunately, the community system is not well-defined resulting in little or no interaction with the broader health system. It is of note that the delivery of evidence-based interventions along the continuum of care from pregnancy to birth through these levels of health delivery care are still not optimal for neonatal survival.

## Causes of Under 5, Infant and Neonatal Mortality



**Figure 1.1: Causes of Under 5, Infant and Neonatal Mortality**

Source: WHO and Maternal and Child Epidemiology Estimation Group (MCEE) 2015 data.unicef.org;

Nigeria Every Newborn Action Plan, 2016.

As part of measures to improve newborn health in Nigeria, the Essential Newborn Care Course (ENCC) was introduced in 2008 by World Health Organization through a National Training of Trainers course. The ENCC is a set of evidence-based, high impact, cost effective interventions and standards that will enable health care workers give quality care to the baby during childbirth and postnatal period. Implementation of other training packages with varying methods and approaches necessitated a process of adaptation and harmonization of all the ENCC training packages (several trainings going on, though not at scale, included the WHO-ENCC, HBB, BEmONC, SCI, KMC etc) to form a blended ENCC curriculum for Nigeria. The ENCC packages that were “blended” included the WHO generic ENCC materials, Save the Children’s reference training manual for newborn care as well as the Helping Babies Survive series from the American Academy of Pediatrics. The harmonization and adoption process lasted till 2015 and the Nigeria adaptation of ENCC was formally adopted and launched during the World Prematurity Day Commemoration of 2016 by the then Honourable Minister of Health, Prof Isaac F. Adewole. A review and incorporation of new evidence into the modules were done in 2018 and this led to the development of the present second edition 2019 which accommodates community intervention such as the Possible Severe Bacterial Infection (PSBI) for Newborn where referral is not possible; resuscitation at birth (to help baby breathe); essential care for every newborn and care of the small baby.

## **Rationale for the guideline**

It is increasingly being recognized that attainment of Universal Health Coverage (UHC) is not feasible without investment in the community component of Primary Health Care. This component seeks to expand access to underserved populations and as well as raise awareness and stimulate demand for primary health care services. This community component can best be undertaken by community-based health workers residing in the community who would become mobilizers, influencers, promoters of positive health behaviours and basic service providers in their communities, ultimately linking the communities with services in primary health care facilities.

Therefore, the major need of this guideline is to standardize the provision of essential newborn care in the primary health centres and the community. This guideline will also respond to the need to engage the PHC system and the community activities that address newborn health care with the aim of reducing neonatal morbidity and mortality by guiding users to:

- Provide basic community-based interventions for pregnant women.

- Provide basic community-based interventions for newborn care
- Provide care at birth for all newborns including those of low birth weight.
- Provide neonatal resuscitation for all those who need it.
- Provide care for newborns with some problems
- Understand which newborns need referral and refer appropriately.

## **Target Audience/Users**

The guideline is designed for use by health workers in primary health care facilities across the Nation and the Community Health Influencers Promoters and Services (CHIPS) Agents. The CHIPS Agent is a harmonized nomenclature for all community health workers across different program areas, including but not limited to Traditional Births Attendants (TBAs), Community Resource Persons (CORPs), Village Health Workers (VHWs), Vaccine Community Mobilizers (VCMs), Role Model Mothers etc. It can also be used by Program managers at the National, State and LGAs, health training institutions for institutionalization of ENCC, Regulatory bodies and NGOs, private hospitals and faith-based institutions that have the capability to offer essential newborn care.

## **Structure of the guideline**

The guideline is structured to address basic newborn care at both community and facility levels and is presented in two (2) sections: Community and Primary Health Care.

The Community sections are centered on Infection prevention, Antenatal care, essential newborn care, postnatal visits, referral and follow up. The PHC sections are centered on standard precautions, infection control and safe injection practices. This is followed by sections on newborn resuscitation, essential care for all babies, routine care of baby with no problem, care of baby with some problems and what to do for a baby with danger signs including referral, discharge, and follow-up

# Section 1

## Community Based Interventions



# SECTION 1: COMMUNITY BASED INTERVENTIONS

## OVERVIEW

There is need to bring PHC services closer to household in communities in order to improve newborn outcome. This can be achieved by carrying out complementary community-level interventions to expand access to basic services and improve demand for health services. These interventions span from the antenatal period to postnatal period and are to be carried out by CHEWs and when CHEWs are not available, by CHIPS Agent.

# 1

## CHAPTER 1: INFECTION CONTROL

Infection is one of the major causes of ill-health and death among newborns. Every precaution must be taken to prevent infection at every contact with the newborn. Mothers are also to be taught on basic infection prevention strategies.

### HANDWASHING

This is the simplest and most effective method in preventing the spread of infections and needs to be included in delivery of newborn care service at all levels including community level. This is because the hands are ready route for movement of micro organisms from one person (e.g. health worker) to the newborn. Washing hands frequently using water and soap for at least 20 seconds prevents the risk of transmitting infection in the community. While washing the hands all jewelry such as wrist watches, bangles, bracelets and rings must be removed as this will allow for thorough washing of hands.

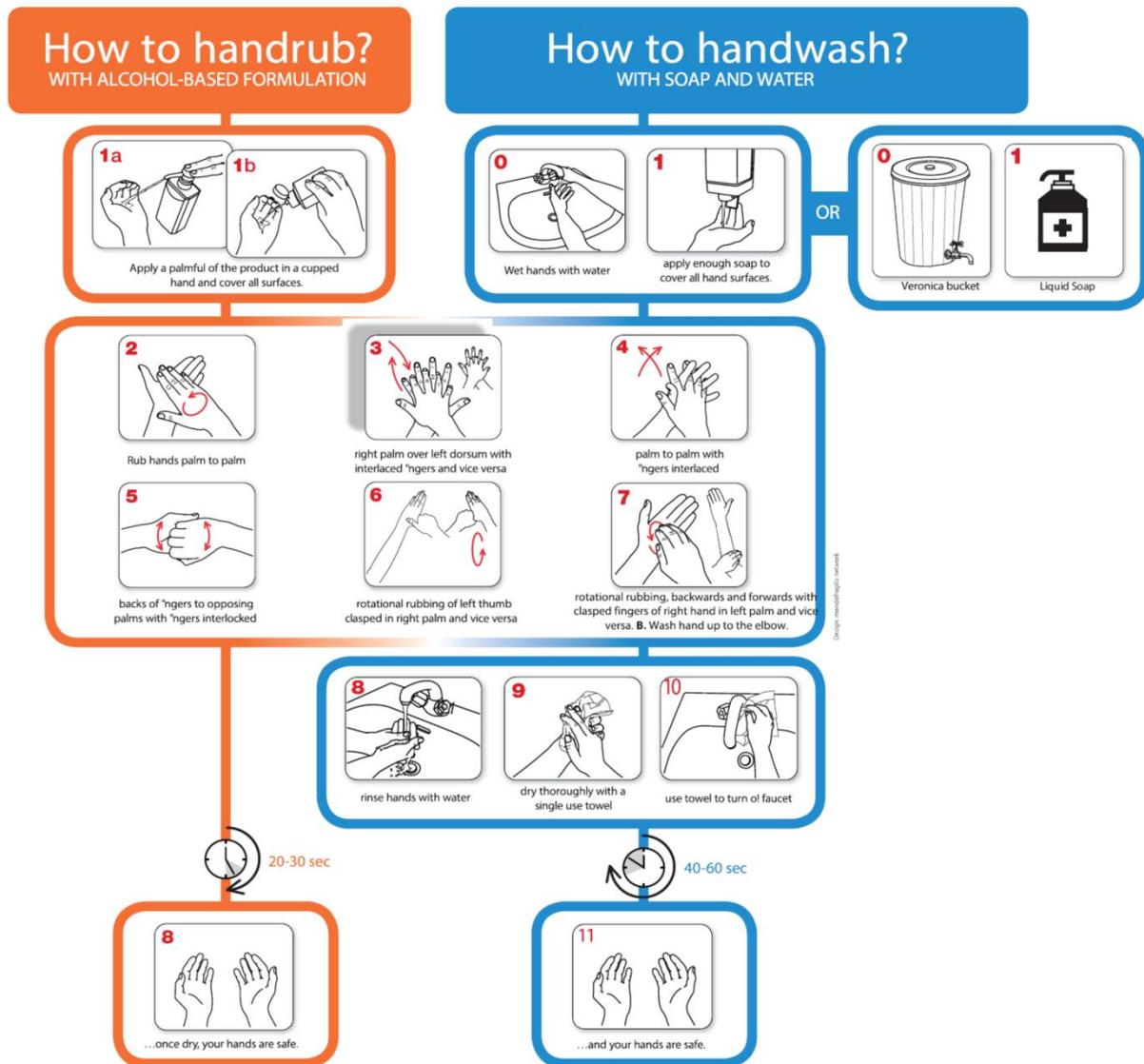
#### TEN STEPS IN HAND WASHING

1. **Wet your hands down to the elbows**
2. **Apply liquid soap generously to cover all hand surfaces**
3. **Rub your hands, palm to palm**
4. **Rub your hands, palm to dorsum of the hands, with interlaced.**
5. **Rub your hands, Palm to palm with fingers interlaced.**
6. **Scrub the tip of your fingers, back of your fingers and knuckles against your palm and vice versa**
7. **Rotational rubbing of the thumb and vice versa**
8. **Wash your wrists to the elbows**
9. **Rinse under running water**
10. **Dry using an appropriate method (Air drying, single use towel/ a clean towel to be washed after use) and turn off tap using towel.**

## When to wash hands

- Before and after caring for someone at home who is sick and between sick persons, whether or not gloves are worn.
- Immediately after gloves are removed.
- After contact with inanimate objects in the immediate vicinity of the patient.
- If hands are visibly soiled.
- After using the restroom.

### Hand washing and hand cleaning



**Figure 1.2: Steps in Handwashing.**

Adapted from Standard World Health Organization procedures of alcohol-based handrub and handwash with soap and water. Source: World Health Organization. How to Handrub? / How to Handwash



**Figure 1.3a**



**Figure 1.3b**



**Figure 1. 3c**

**Figure 1.3: Various hand washing methods in the community**

*Figure a: Source: [Co2balance.com/fighting-covid-19-tippy-taps-for-handwashing-in-mozambique-and-zambia/](https://www.co2balance.com/fighting-covid-19-tippy-taps-for-handwashing-in-mozambique-and-zambia/)*

*Figure b: Source: [en.wikipedia.org/wiki/Veronica\\_Bucket](https://en.wikipedia.org/wiki/Veronica_Bucket)*

*Figure c: Source: [worldvision.com.au/global-issues/work-we-do/water-sanitation/tippy-taps](https://www.worldvision.com.au/global-issues/work-we-do/water-sanitation/tippy-taps)*

## Personal Protective Equipment (PPE)

**Personal Protective Equipment (PPE)** personal protective equipment (PPE), are basic devices if worn appropriately protect health care providers from being infected by microorganisms or microbes and other highly infectious organisms. This has become imperative with the emergence of COVID -19 and other emerging health issues.

The PPE for this level of care include:

- Gloves,
- Masks and
- Face shields.

### Types of PPE that can be used in the Community

Type	Use
<p>GLOVES</p> 	Protect hands
<p>FACE MASK</p> 	Protect mouth/nose
<p>FACE SHIELD</p> 	Protect face and nose

# 2

## CHAPTER 2: ANTENATAL CARE

The **CHEW/CHIPS personnel** are expected to carry out the following activities:

1. Identify, refer and track all pregnant women in the community.
2. Make two targeted home visits to all pregnant women in the community:
  - a) **First visit to be made as early in pregnancy as possible. The aim of this visit is to:**
    - i. Encourage all pregnant women to go to the nearest health facility for antenatal care (ANC).
    - ii. Conduct health screening for maternal danger signs and refer as appropriate
    - iii. Distribute Long lasting insecticide-treated bed net (LLIN) where available
    - iv. Provide health education on maternal nutrition, and counselling on birth preparedness.
    - v. Provide counselling on breast care and breastfeeding (emphasis on exclusive breastfeeding)
  - b) **Second visit is conducted during the 7<sup>th</sup> to 9<sup>th</sup> month of pregnancy and aimed at carrying out the following activities:**
    - i. Use the 1000 days checklist to monitor ANC attendance
    - ii. Conduct health screening for maternal danger signs and refer as appropriate
    - iii. Review birth plan by:
      - Encourage all women to deliver in health facility.
      - Encourage HIV positive women to deliver in health facility that offers PMTCT services and ensure confidentiality
      - Discuss available options for facility delivery with women living far away or if referral is difficult in case of emergency e.g. to stay with relatives/ friends in order to be closer to a health facility.
    - iv. Provide health education on breast feeding and immunization.

The CHEW/CHIPs should use appropriate recording/data tools/standing orders for each of these visits.

**At every visit Reinforce Hand washing and use of 4%  
chlorhexidine gel for cord care**

# 3

## CHAPTER 3: ESSENTIAL NEWBORN CARE

Essential Newborn Care (ENC) is care that every newborn baby needs regardless of where it is born or its weight. ENC should be given immediately after the baby is born and continued for at least the first 7 days after birth. The ENC interventions are simple and can be provided by a Skilled Birth Attendant (SBA) or a trained Community Health Worker (CHW) such as Community Influencers, Promoters and Services (CHIPS). This care includes:

### 1. Temperature Maintenance

Maintaining the temperature of newborn and small babies is important for survival. Normal body temperature is 36.5 - 37.5°C. Cold Baby is when the body is cold to touch or as reported by the caregiver or thermometer reading of >35.5 - <36.5°C while Hot Baby is when the body is hot to touch or as reported by the caregiver or thermometer reading of greater than 37.5°C.

To ensure normal temperature:

- Keep warm: initiate skin-to-skin with mother, wear cap, and cover with a clean dry cloth within one hour after birth
- initiate breastfeeding within 30 minutes of birth

### 2. Prevention of disease- Eye and cord care

Eye care- apply 0.5% Erythromycin eye ointment once to both eyes to prevent eye infection



**Figure 2.1: Eye care: Application of 0.5% Erythromycin eye ointment**

### **Cord Care**

- Wash hands with soap and water before and after cord care
- Apply 4% chlorhexidine (7.1% chlorhexidine digluconate) gel in 25g tube to umbilical cord once daily until cord stumps falls off.
- Do not cover with dressing or diaper
- Do not apply methylated spirit or other medications or substances such as tooth paste, salt, engine oil and cow dung



***Figure 2.2: Cord care: Application of 4% Chlorhexidine gel***

### **3. Bathing**

- Delay bathing baby for the first 24 hours of life

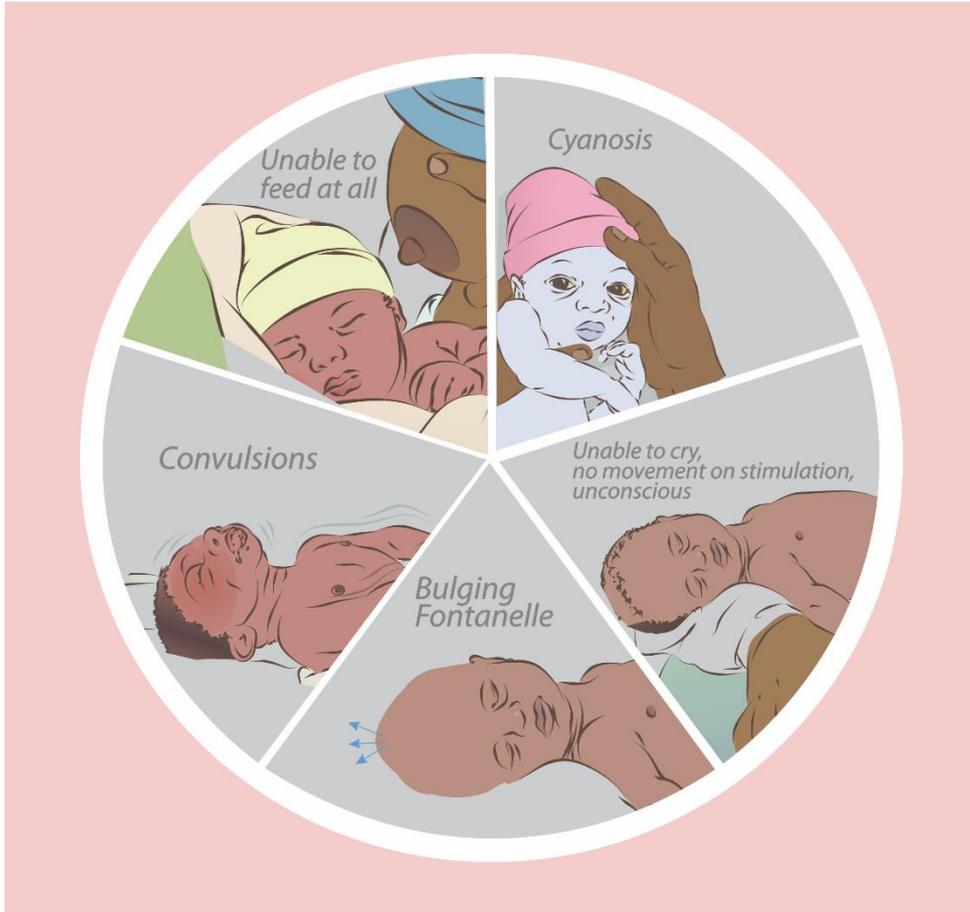
### **4. Identification of small newborn and danger signs:** The early identification of small babies as well as of danger signs in newborns is important to reduce deaths.

A small baby is one whose birth weight is less than 2.5Kg

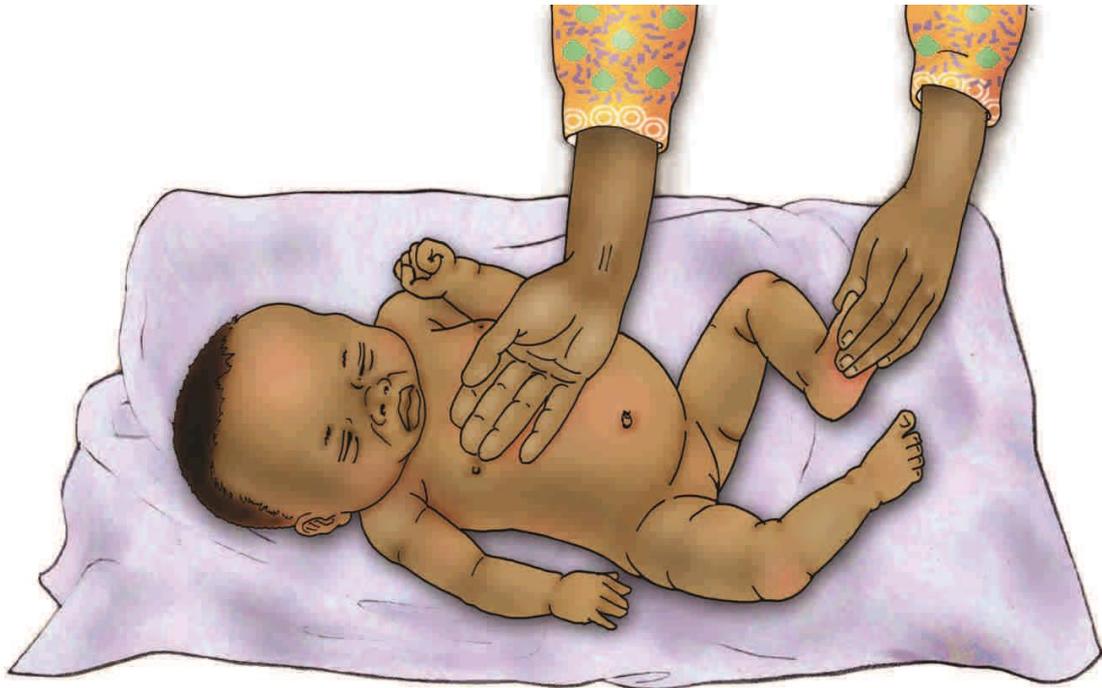
Danger signs to look out for include:

- Abnormal temperature – Cold or Hot
- Poor suckling or inability to suckle
- Breathing problem -Fast breathing and severe chest in drawing
- Yellowness of the hands and body
- Poor feeding or not feeding at all
- Bleeding from the cord / Redness around the cord stump
- No movement at all or only on stimulation
- Convulsions

If any of the danger signs is observed, the newborn should be urgently referred to the nearest PHC facility.



**Figure 2.3: Danger signs**



## **5. Referral and follow-up to health facility**

- Communicate/Liaise with health facility
- Fill out the community referral form (In triplicate)
- Assist to mobilize for transport (Emergency transport system)
- Keep newborn in skin-to-skin with the mother in KMC position
- Express breast milk and feed baby with cup
- Practice and maintain hygiene
- Follow-up with the patients.

# 4

## CHAPTER 4: POSTNATAL CARE VISITS

The postnatal period begins immediately after the birth of a newborn, extending to six weeks after delivery. This period is crucial for survival of the newborn. Proper care must be taken to avoid complications including death. The post-natal care visits days are 3, 5, 7, 9, 14, 21, 28

- If the birth weight of the baby is normal ( $>2.5\text{kg}$ ), at least three home visits are required on days 3, 7 and 14.
- If the birth weight of the baby is low ( $<2.5\text{kg}$ ), small baby, additional post-natal visit on day 2 thus at least 4 home visits are required in the first week of life on days 2, 3, 5, 7 and additional follow up visits on days 9, 14, 21,28

### **Initial postnatal visits: In the first week of life (up to day 7)**

Activities to be carried out at these visits include

1. Provision of essential newborn care
2. Assess for Danger signs and refer newborn to the health facility if any danger sign is seen/observed (Refer to Chapter3)
3. Discourage harmful traditional care practices: Harmful traditional practices are acts by a community that is based on their cultural heritage, beliefs and norms. These beliefs have been passed from generation to generation and have health and human rights implications. Examples of harmful traditional birth practices include:

- Pressing baby's head with hot water
- Massaging/pressing baby's breasts to remove "witch milk"
- Applying non-hygienic materials such as cow dung, engine oil, toothpaste to the baby's umbilical cord
- Making scarifications on baby's face/body to prevent convulsion
- Discarding of colostrum milk (First milk) as this is believed to be poisonous

Counsel mother against these harmful practices including the following:

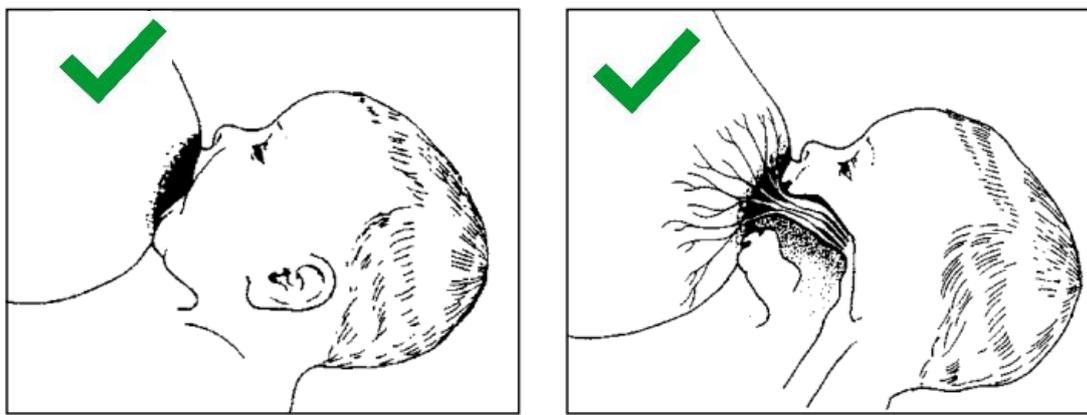
- i. Cord care - apply only CHX and discourage the use of other substances such as tooth paste or Cow dung to the cord.
  - ii. Colostrum is the yellowish coloured milk and should be given to the newborn because it protects the newborn from infection.
4. Promote Exclusive Breast Feeding - Exclusive breastfeeding means that a baby takes only breast milk with no additional foods or liquids, not even water (as breast milk is

predominantly water), except medicine if necessary, for the first 6 months when complementary feeding begins. Baby should be breastfed 8 – 12 times per day and on demand. Tell the mother the advantages of breast milk which includes:

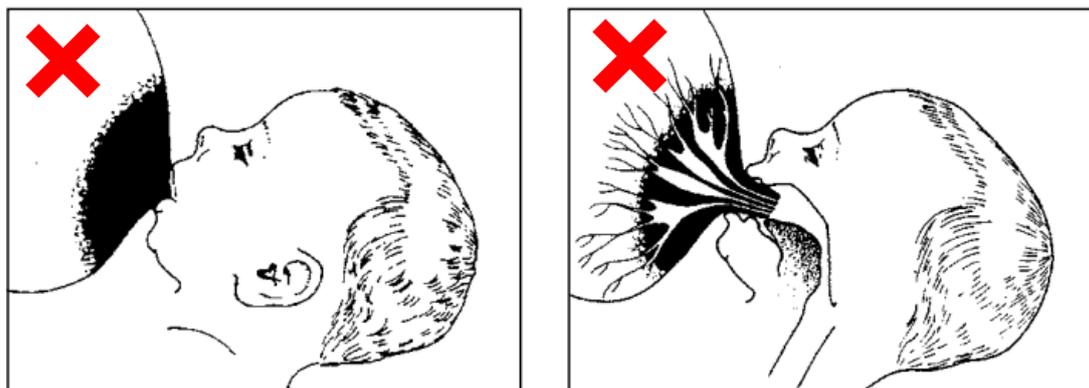
- It is the best food for the baby as it digests easily
- It protects newborn from infection
- It promotes bonding between the mother and the newborn

**The CHEW/CHIPS agent should:**

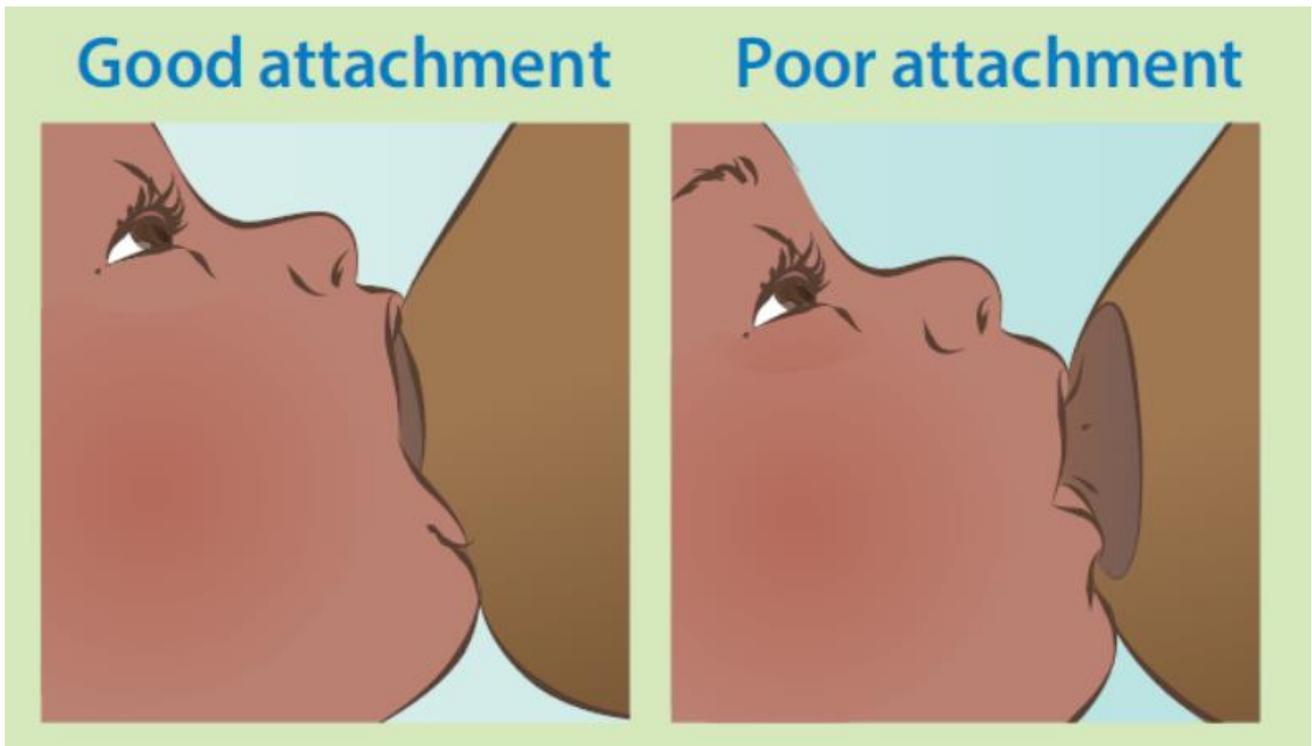
- Demonstrate good positioning and good attachment and discuss the importance of breastfeeding



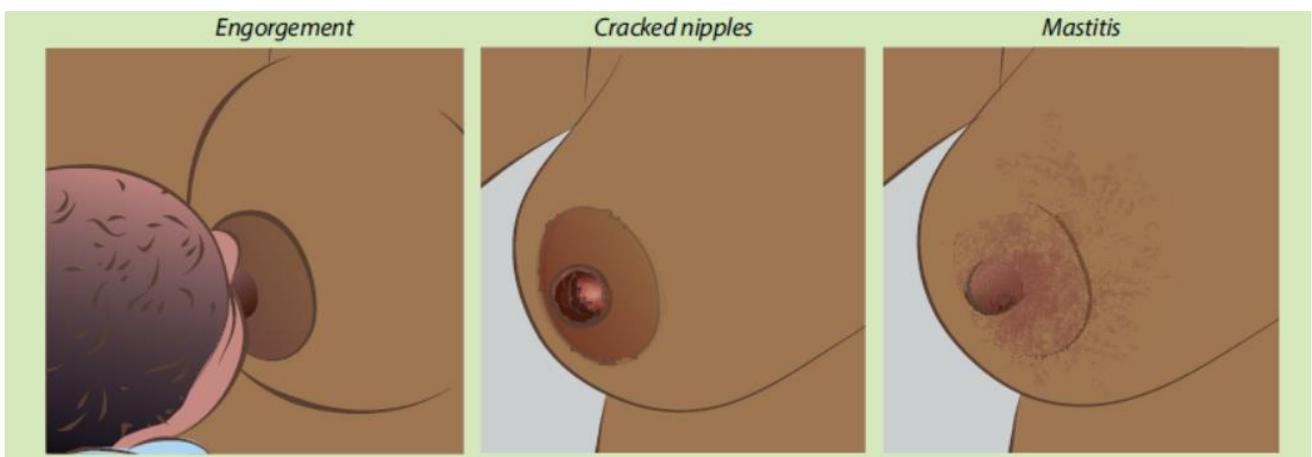
**Figure 3.1: Good attachment to the breast**



**Figure 3.2: Bad attachment to the breast**



Discuss common breast problems such as inadequate milk flow, inverted nipple, engorgement and mastitis and how to address them.



5. Promote Immunization: Newborns are particularly vulnerable to infections. Immunization is an important way to protect an infant's health. They prevent illnesses and diseases and failure to immunize may put the infant at risk of serious illness or even death
  - Check immunization status
  - Educate on the importance of immunization
  - Immunize newborns- applicable for ONLY oral immunization

Refer to health facility for appropriate immunization

Current immunization schedule in Nigeria - Refer to appendix I

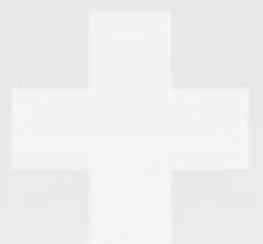
6. Register birth
7. Other scheduled visits
  - Second postnatal visit day 3
  - Third postnatal visit: day 7
  - Fourth visit: between day 14 – 21
  - Fifth visit: day 28
  - Sixth visit: day 42 (6 weeks)
8. Encourage care givers to talk, sing and play with the newborn



**At every visit, reinforce Hand washing**

# Section 2

## Facility Based (PHC) Interventions



# 5

## CHAPTER 5: STANDARD PRECAUTION

Infection prevention is an important part of every component of care of a newborn baby. Newborn babies are more susceptible to infections because their immune system is immature; thus, the consequences of failing to follow infection prevention principles are particularly devastating. The advent of new and reemerging diseases underscores the great importance of standard precautions

- Standard precautions are a set of infection control practices used to prevent transmission of diseases that can be acquired by contact with blood, body fluids, non-intact skin (including rashes), and mucous membranes.
- They are the minimum infection prevention practices that apply to all patient care regardless of suspected or confirmed infection status of the patient in any setting where health care is delivered
- They are designed to protect healthcare practitioner (HCP) and prevent HCP from spreading infections among patients, caregivers and themselves. These measures are to be used when providing care to all individuals.

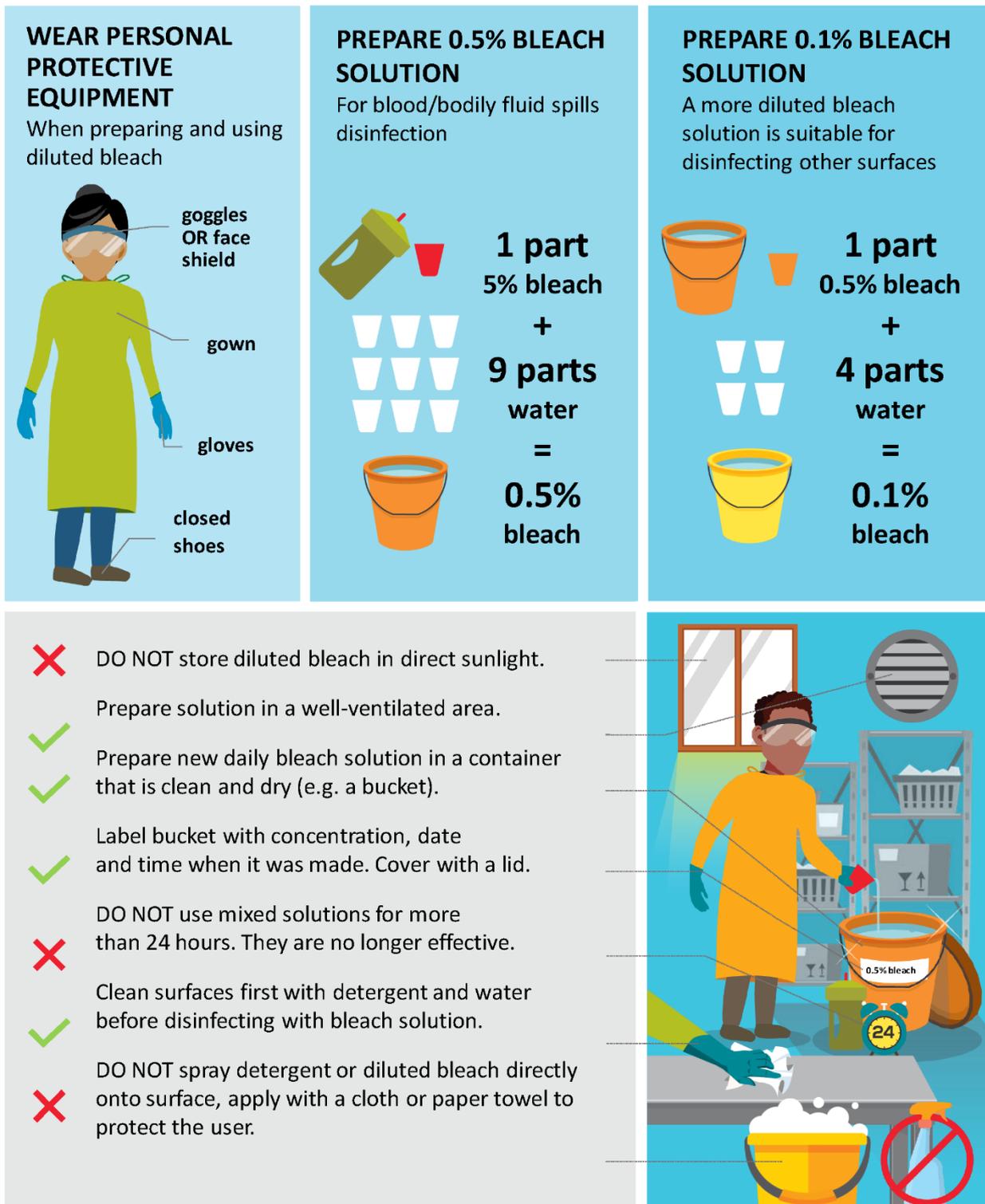
### Infection control policy

Every primary health care centre that offers basic newborn care should have a written infection control policy which should address:

- Methods and frequency of cleaning
- Policies for the supply of all cleaning and disinfectant products
- Disinfection/sterilization protocol
- Hand washing policy/protocol
- Visitation policy
- Use of personal protective equipment
- Waste disposal policy
- Care bundles for specific procedures
- Bed spacing policy – at least 1m apart between cots/incubators

### Disinfection

- The process that reduces the number of microorganisms (with exception of bacterial spores) on inanimate objects.
- Disinfectants commonly used include alcohol, chlorine and chlorine compounds, hydrogen peroxide and chlorhexidine. (See Fig 5.1 for preparation details of bleach solution).



**Figure 5.1: Bleach preparation for Disinfection**

**Source:** [https://www.who.int/docs/default-source/wpro---documents/wpro---pdf-infographics/covid-19/bleach-dilution-and-guidance-for-visitors-20200622.pdf?sfvrsn=4fcf7133\\_2](https://www.who.int/docs/default-source/wpro---documents/wpro---pdf-infographics/covid-19/bleach-dilution-and-guidance-for-visitors-20200622.pdf?sfvrsn=4fcf7133_2)

# Hand Hygiene

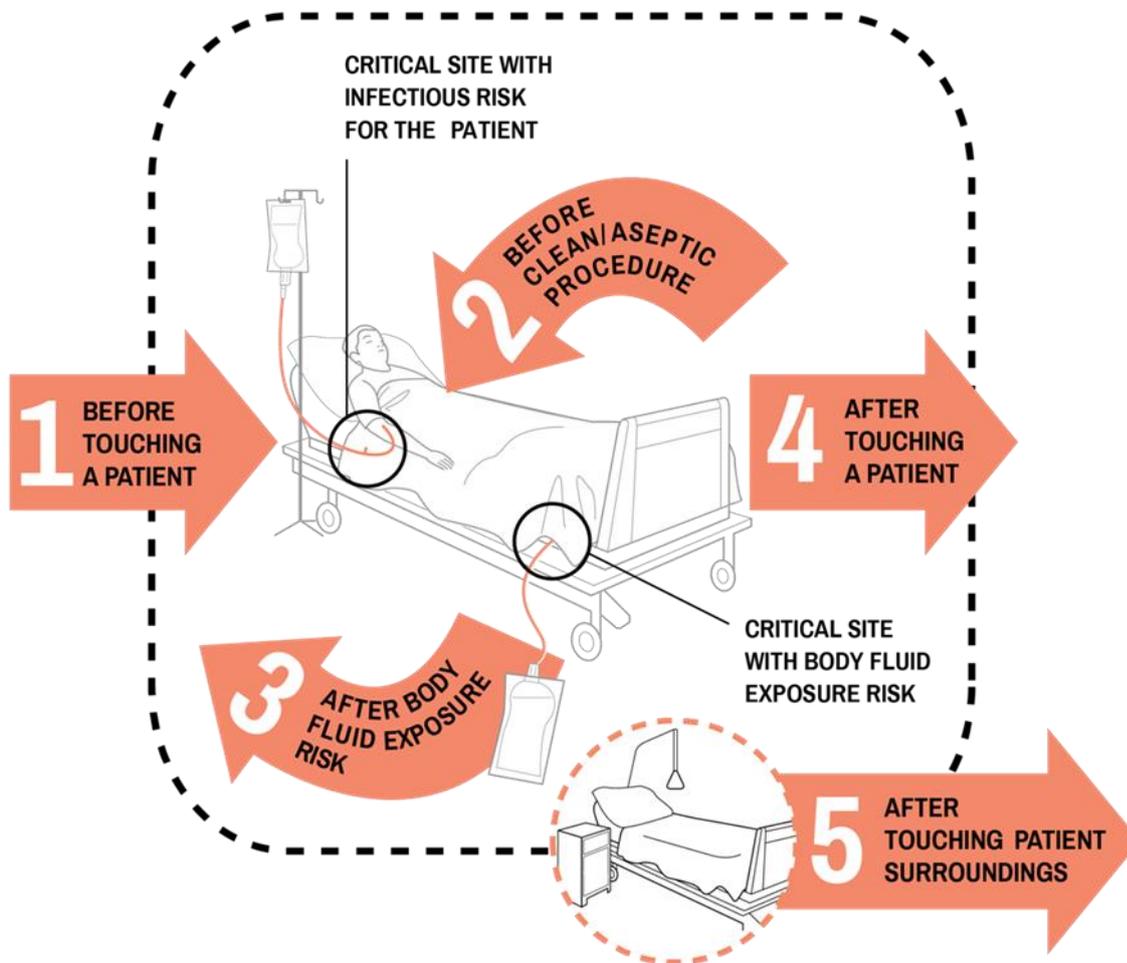
Hand hygiene refers to any activity that reduces the level of contamination with microorganisms. It is one of the most important ways to reduce transmission of infections in healthcare settings. Hand hygiene activities include: hand washing with antiseptic hand wash/soap, alcohol-based hand rub or surgical hand scrub.

**Hand washing:** Wash hands with soap and water for at least 40 to 60 seconds and air dry or dry using single or multiple use towel that has been washed, dried and ironed before use, making sure not to use clean hands to turn off the tap (Fig 5:3).

Adequate hand washing requires removal of rings, bracelets and wrist watches.

**Hand rubbing with alcohol:** Alcohol based hands rub (commonly called hand sanitizer) should be applied generously to cover hands completely and hands rubbed until dry (Fig 5:3).

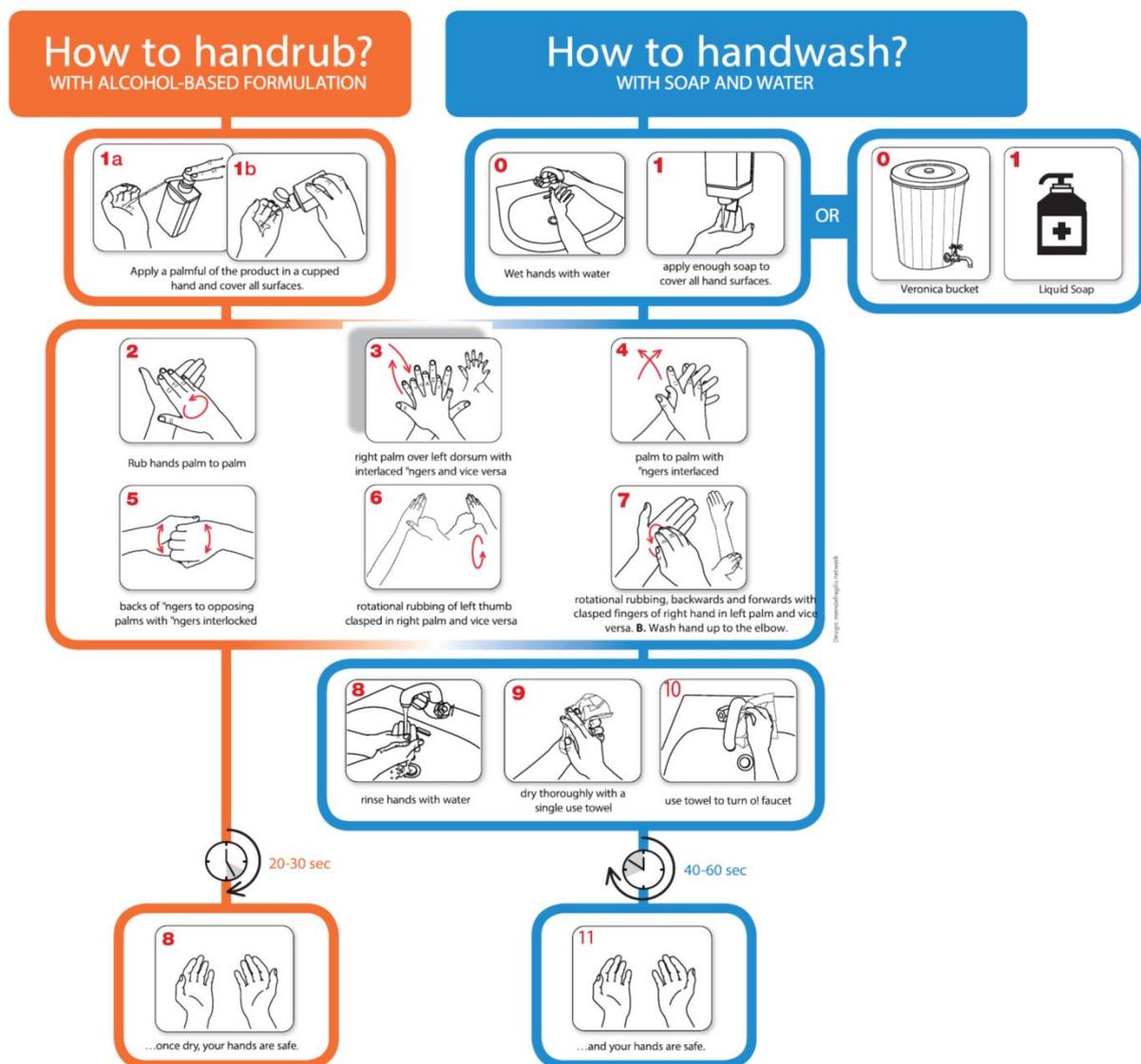
## Hand Hygiene Indications



*Figure 5.2: Indications for hand hygiene*

- Before and after any direct patient contact and between patients, whether or not gloves are worn.
- Immediately after gloves are removed.
- Before performing any procedure
- After touching blood, body fluids, secretions, excretions, non-intact skin, and contaminated items, even if gloves are worn.
- During patient care, when moving from a contaminated to a clean body site of the patient.
- After contact with inanimate objects in the immediate vicinity of the patient.
- If hands are visibly soiled, after using the restroom, or if potential exposure to spore-forming organisms

### Hand washing and hand cleaning



**Figure 5.3: Steps in Handwashing/Hand rubbing with alcohol**

Adapted from Standard World Health Organization procedures of alcohol-based handrub and handwash with soap and water. Source: World Health Organization. How to Handrub? / How to Handwash

## Waste Disposal

- All health care facilities should have policies and procedures in place for the correct management of all waste generated
- Waste should be removed from clinical areas at least three times each day and more frequently as needed, such as from specialized areas
- Segregate waste into colour – coded bins as shown in (Fig 5:4)
- Clinical waste should be placed in biohazard bags as soon as possible
- Dispose all wastes as per standard protocol
- Practice safe sharps disposal



**For non – infectious waste e.g.**

- Paper/packaging material
- Food



**For infectious waste e.g.**

- Gauze/dressings/bandages/  
cotton wool
- Blood/IV lines
- Gloves



**For highly infectious waste e.g.**

- Anatomical waste (human  
parts – teeth, placenta)
- Pathological waste (e.g.  
sputum containers, tubes  
containing specimens)

**Figure 5.4: Segregation of healthcare waste using standard colour – coded waste bins**

## Personal Protective Equipment (PPE)

- PPE includes items such as gloves, gowns, masks, respirators, and eyewear used to create barriers that protect skin, clothing, mucous membranes, and the respiratory tract from infectious agents (Table 5.1).
- The items selected for use depend on the type of interaction in the unit and the likely modes of disease transmission.

### GLOVES

- Gloves are worn to protect both HCWs and patients by reducing the spread of infection from bacteria on the hands. Gloves **do not** change the need to wash or sanitize one’s hands in-between patient interactions.
- Gloves should be worn only when necessary such as when:
  - Touching bodily fluids, non-intact skin and mucous membranes.
  - Performing invasive procedures.
  - Touching contaminated objects or surfaces.
- Used gloves should be disposed of immediately after use
- HCWs should not wear same pair of gloves for procedures for more than one baby as this is a main source of cross infection. It is advised to rather wash hands for routine procedures like feeding and checking of vital signs.
- Repeat hand washing or sanitizing immediately after removing gloves.

**Table 5.1: PPEs and their functions**

Types of PPE for use at Health Facilities	
Type	Use
GLOVES 	Protect hands
SURGICAL MASKS/RESPIRATOR 	Protect mouth /nose Protects respiratory tract from airborne infections

<p style="text-align: center;"><b>GOGGLES</b></p> 	<p>Protect eyes</p>
<p style="text-align: center;"><b>FACE SHIELD</b></p> 	<p>Protect face and should be used with the nose mask</p>
<p style="text-align: center;"><b>GOWN/APRON</b></p> 	<p>Protect skin/clothing</p>

<p><b>BOOT</b></p> 	<p>Protect the legs and feet</p>
--	----------------------------------

## Other Infection Control Measures

- Restrain hair in a manner that prevents its coming in contact with the infant.
- Keep jewelry to a minimum when caring for an infant (e.g. remove watches and rings)
- Do not eat, drink, or store food or drink within patient care areas in the well newborn nurseries.
- Provide a dedicated stethoscope for each infant in the well newborn nurseries
- Keep traffic (visitors, parents, and staff) to an absolute minimum
- Remove lab coats and jackets prior to entering the newborn unit and hang these outside of the patient care areas.
- Roll sleeves up above the elbows when having contact with babies in newborn unit/nurseries
- Keep mobile phone away from patient care areas
- Identify dedicated infection control officers/champions in the unit.
- Artificial /long nail and nail polish should not be used by health workers taking care of newborn

## Safe Injection Practices

- Injection safety, or safe injection practices, is a set of measures taken to administer injections in an optimally safe manner for patients, healthcare personnel, and others.

### ADMINISTERING INTRAMUSCULAR (IM) INJECTIONS

This is a method of administering medications directly into muscle tissue, usually with a needle and syringe.

#### SITE

Unless otherwise stated (e.g. in measles and yellow fever vaccine administration), the recommended site for IM injection in newborns and children is the upper, outer part of the thigh (anterolateral part). Do not use the gluteal region (buttocks).



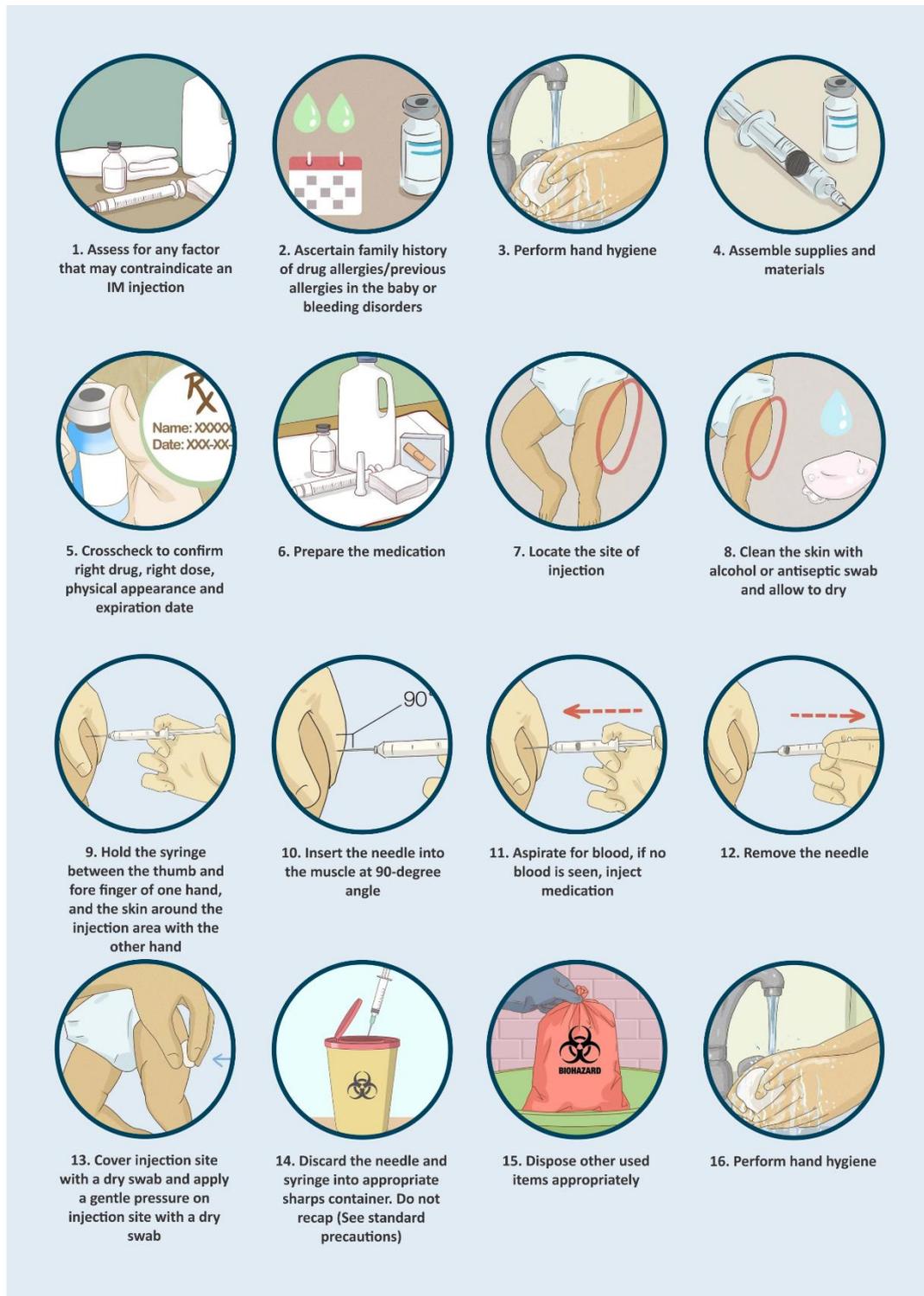
**Figure 5.5: Recommended site of intramuscular injection in neonates**

Source: <https://www.aboutkidshealth.ca/Article?contentid=997&language=English>

## STEPS IN ADMINISTERING IM INJECTIONS

- Assess for any factor that may contraindicate an IM injection
- Ascertain family history of drug allergies/previous allergies in the baby or bleeding disorders
- Perform hand hygiene
- Assemble supplies and materials
- Crosscheck to confirm right drug, right dose, physical appearance and expiration date
- Prepare the medication
- Locate the site of injection
- Clean the skin with alcohol or antiseptic swab and allow to dry
- Hold the syringe between the thumb and fore finger of one hand, and the skin around the injection area with the other hand
- Insert the needle into the muscle at 90-degree angle
- Aspirate for blood, if no blood is seen, inject medication
- Remove the needle
- Cover injection site with a dry swab and apply a gentle pressure on injection site with a dry swab

- Discard the needle and syringe into appropriate sharps container. Do not recap (See standard precautions)
- Dispose other used items appropriately
- Perform hand hygiene.



**Figure 5.6: Graphical representation of steps in administering IM injections**  
Adapted graphics from [wikihow.com](http://www.wikihow.com)

## SAFE SHARPS DISPOSAL PRACTICES

- Do not recap, bend or break needles after giving an injection
- Keep a puncture resistant container at every point where sharps are used (Fig 5:6)
- Drop all used needles, syringes, blades and other sharps into this container without recapping or passing to another person
- Empty or send for incineration when the container is three-quarter full
- Burn in a pit if incineration facilities are not available



*Fig 5.7: Samples of injection safety box*

- **Never** administer medications from the same syringe to more than one patient
- **Always** use aseptic technique when preparing and administering injections.

### DO NOTS

- Puncture/enter a medication vial, bag, or bottle with a used syringe or needle.
- Never use medications packaged as single-dose or single-use for more than one patient.

# OUTBREAK PREPAREDNESS AND RESPONSE

Outbreak prone diseases constitute a major threat to the health system. These include diseases such as cerebrospinal meningitis (CSM), Cholera, Viral haemorrhagic fevers (VHF such as Lassa fever, Ebola) and Corona virus disease 2019 (COVID – 19).

Primary Health Care workers, being the closest health care providers to the community play a critical role in curtailing community transmission of epidemic prone diseases. Thus, there is need to establish and adhere to measures that will guarantee:

- Health worker safety and protection
- Active detection of suspected cases
- Timely response to suspected cases
- Prevention of spread

Outbreak preparedness encompasses all the activities that are required to respond effectively to disease outbreaks. These activities include ensuring that facilities are equipped with:

- The right number and cadres of health workers
- The right commodities and supply
- The right clinic setting to provide services as required by patients

Steps recommended for Primary Health workers before, during and after the conduct of clinic sessions during an outbreak include:

## **A. BEFORE PATIENTS' ARRIVAL TO THE FACILITY**

### **1. PREPARE THE CLINIC**

- Know the helpline numbers for your State including alternative numbers to call
- Stay connected with information platforms in your state/LGA/ward to know the current situation in your community.
- Be extra vigilant if you hear of cases from your state/LGA/ward
- Obtain and maintain a stock of relevant IEC materials and basic supplies

### **2. PREPARE YOURSELF**

- Know about/read widely about the disease
- Ensure adequate PPEs and know how to use them
- Follow specific protective guidelines for the particular disease

### **3. COMMUNICATE WITH PATIENTS**

- Post signs at entrances and in waiting areas about preventive measures

### **4. PREPARE THE WAITING AREA/CONSULTING ROOMS**

- Provide appropriate supplies e.g. hand sanitizers, dust bins and hand washing posts
- Ensure the area is arranged in compliance with guidelines for the specific disease
- Ensure rooms are well ventilated, open all windows and doors

### **5. PREPARE AN ISOLATION ROOM/AREA**

- Identify a room where all suspected cases will be kept before referral is arranged

## **B. AT ARRIVAL OF PATIENTS**

- Have dedicated staff for triaging/screening to identify suspected cases. These must use appropriate PPEs.
- Suspected cases should be moved to the isolation area
- Notify the appropriate unit and organize referral immediately

### **C. AT THE END OF THE CLINIC**

- Clean all surfaces
- Clean and sterilize all equipments
- Clean yourself
- If stock is low, replenish supplies

# 6

## CHAPTER 6: BASIC RESUSCITATION SKILLS

### Introduction

Most newborns will breathe spontaneously at birth. About 10% will require some help to breathe while only 1% will require serious help to initiate breathing. Every delivery must have health personnel (called skilled birth attendant) whose only duty is to ensure and help baby to breathe within the first minute of life. Every birth attendant is expected to have basic resuscitation skills as taught in the ENCC module and outlined below:

#### 1. Preparation for Delivery

- Identify helper and review emergency plan (including transportation and communication)
- Ensure that the delivery room is clean, warm and well lighted
- Gather the needed materials/equipment for resuscitation
- Check and ensure that equipment are functioning well

#### 2. At Delivery

- Deliver the baby unto the mother's abdomen
- Dry thoroughly with a clean, dry towel; discard the wet towel immediately
- Assess the need for resuscitation: ask "is baby crying?"
- A baby that is crying needs routine care:
  - Keep warm (wear cap, keep in skin-to-skin with mother and cover with a clean, warm cloth)
  - Check/monitor breathing
  - Cut cord 1 – 3minutes after birth

#### 3. If baby is not crying:

- Position the baby with the neck slightly extended
- Clear secretions from the mouth and nose using a clean suction device or wipe (e.g Penguin suction – Fig 6.1)
- Stimulate breathing by gently rubbing the back once or twice
- If baby is still not breathing or is gasping, immediately cut the cord and move to ventilation area
- Ventilate with bag and appropriate sized mask for 60 seconds (Fig 6.1)
- If baby is still not breathing, improve ventilation and ventilate for another minute
- Check the heart rate:
  - If >100bpm and baby still not breathing or if heart rate is slow, continue ventilation and refer for advanced care



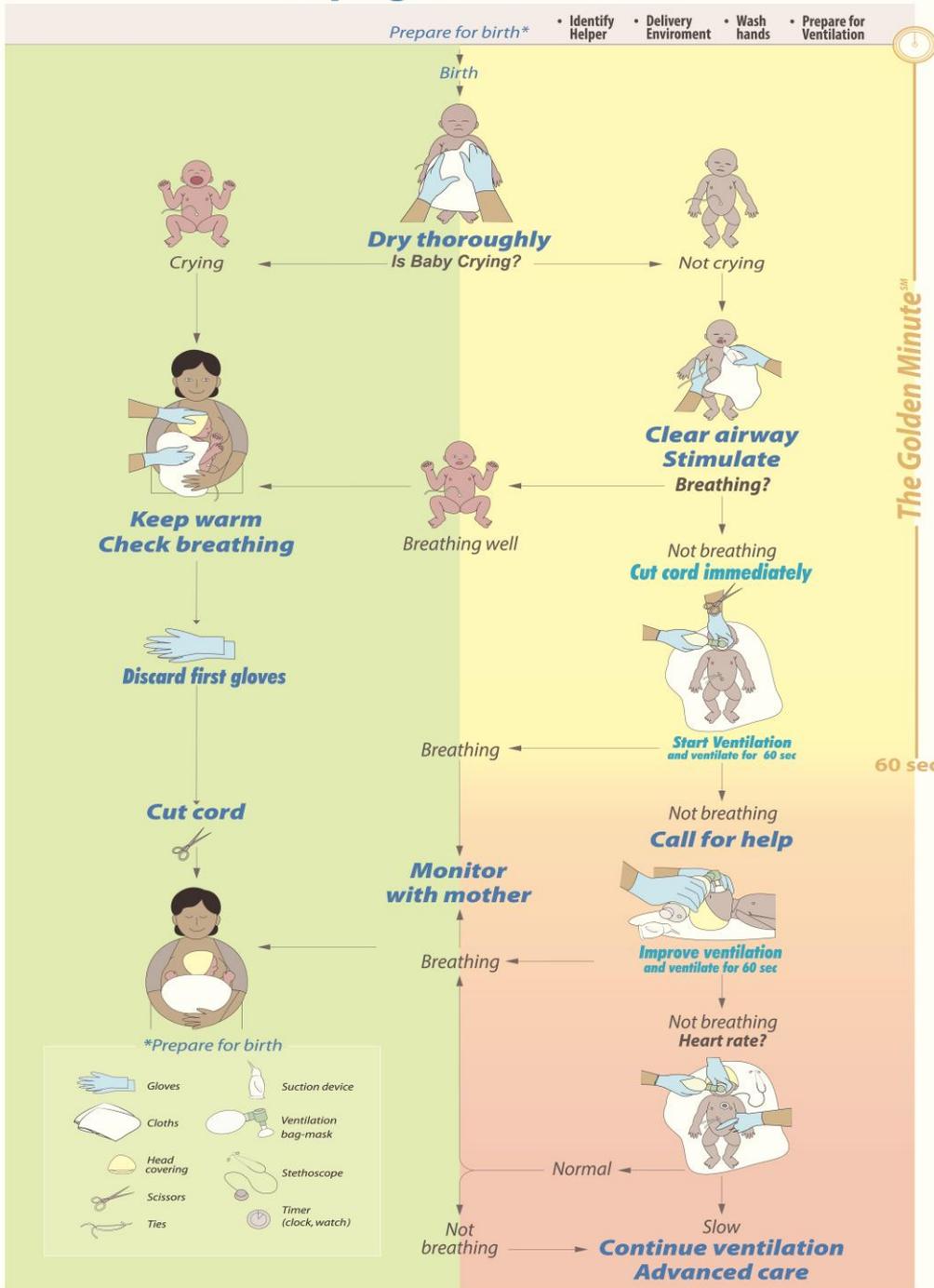
***Figure 6.1: Resuscitation of the newborn: suction airway; initiate bag and mask ventilation***



FEDERAL MINISTRY OF HEALTH NIGERIA

ACTION PLAN

Helping Babies Breathe

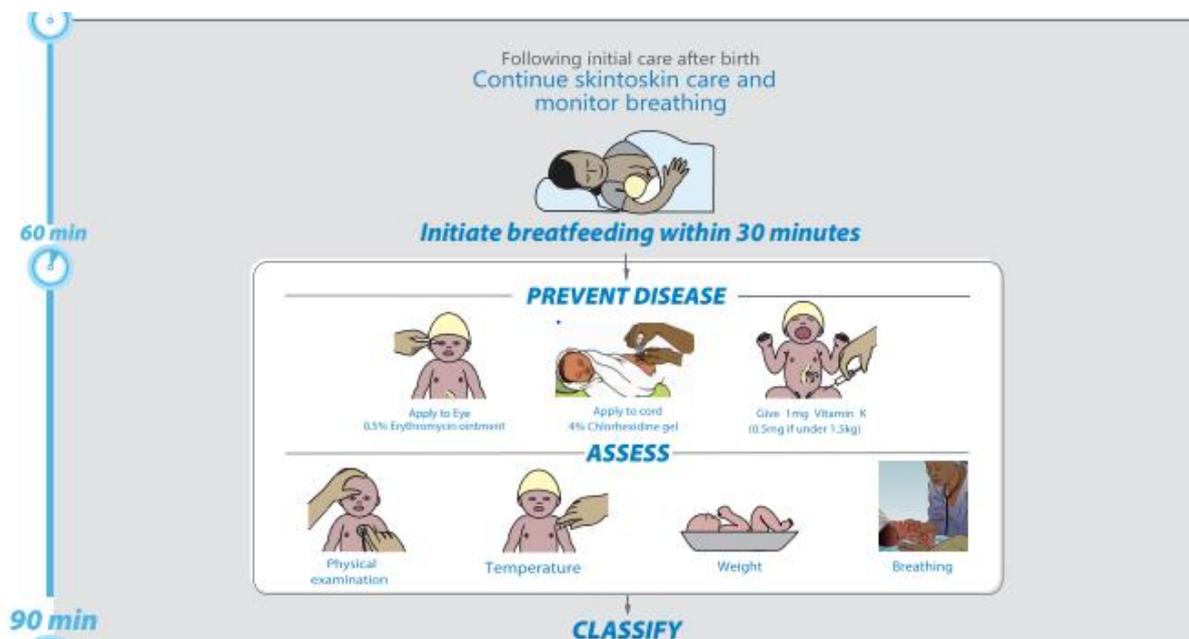


Adapted from: Helping Babies Survive  
American Academy of Pediatrics  
PUBLISHED BY THE MINISTRY OF HEALTH, NIGERIA

# 7

## CHAPTER 7: ESSENTIAL CARE FOR ALL BABIES

### Care in the First 90 Minutes Of Life



#### Initial Care

- Keep baby in skin-to-skin contact with the mother for at least one hour after birth
- Initiate breastfeeding within 30 minutes of birth

#### Prevention of disease

##### Eye care:

- Apply 0.5% Erythromycin eye ointment once to both eyes to prevent eye infection
- If newborn is an outborn with no record of eye care, administer the 0.5% Erythromycin eye ointment



**Figure 7.1: Eye care: Apply 0.5% Erythromycin eye ointment**

#### **Cord Care**

- Wash hands with soap and water before and after cord care
- Apply 4% Chlorhexidine (7.1 Chlorhexidine digluconate) gel in 25g tube to umbilical cord to prevent infection.
- Do not cover with a dressing or diaper
- Do not apply methylated spirit or other medications or substances.



**Figure 7.2: Cord care: Apply 4% Chlorhexidine gel**

### **Vitamin K1 Administration**

- To prevent haemorrhagic disease of the newborn (bleeding in newborn)
- Give IM Vitamin K1, 1mg start into the anterolateral thigh (0.5mg for babies <1.5kg)
- If baby is an outborn with no record of vitamin K1 administration, administer vitamin K1 injection

### **Bathing**

- Delay bathing till after 24 hours of life

### **Physical Examination**

- Conduct a thorough physical examination, paying attention to presence of birth defects
- Check breathing and count the respiratory rate (normal is 40 – <60 breaths/minute)
- Measure the temperature (normal is 36.5 – 37.5°C)
- Weigh the baby (normal is ≥2.5kg)
- Document your findings.

### **Classify Baby**

Based on findings at examination, classify baby into one of the following three categories:

1. Well newborn – will require routine care
2. Newborn with some problems – will require some interventions/support
3. Newborn with danger sign – will require prompt referral

### **IMPORTANT**

#### **DO NOT:**

- ❖ **Use oil to clean vernix (Olive oil, paraffin, palm kernel oil etc)**
- ❖ **Bathe baby within 24 hours of birth**
- ❖ **Give water, glucose water or any other liquid outside breastmilk**
- ❖ **Use Naphthalene balls (Camphor)**
- ❖ **Apply other substances except chlorhexidine on the cord**
- ❖ **Give routine drugs (ampiclox, gripe water, nospamine, native/herbal medication) except doctor's prescription**

# 8

## CHAPTER 8: ROUTINE CARE OF THE BABY WITH NO PROBLEM

### Introduction

A newborn with no problem is one who has:

- Normal body temperature (36.5 - 37.5°C)
- Normal respiratory rate (40 - 60 breaths/minute)
- Weight of ≥2.5kg
- Has no danger sign (See ENCC/ECEB Action plan)

### Further Care of the Newborn with No Problem

#### 1. Maintain normal temperature

- Skin – to – skin care or dress the baby in clean dry clothes, socks and cap, and wrap securely
- Keep the room warm
- Eliminate drafts and avoid contact with wet or cold surfaces or cold air in the room
- Keep away from direct sunlight

#### 2. Support breastfeeding

- Keep mother and baby together unless there is a strong reason not to do so
- Encourage breastfeeding whenever the baby shows sign of readiness to feed
- Ensure good positioning and good attachment
  - Good positioning** – means baby can attach well and mother is comfortable. This can be achieved when:
    - Head and body in a straight line
    - Baby is turned towards mother
    - Baby is close to mother
    - The whole body is supported
  - Signs of good attachment are:**
    - Baby's chin touching breast
    - Baby's mouth wide open
    - Baby's lower lip turned downward
    - More areola visible above than below baby's mouth



iii. **Ensure adequacy of feeds** – healthy babies should feed about every 2-3hours (8 - 12times a day).

a. A baby is getting enough milk per feeds if:

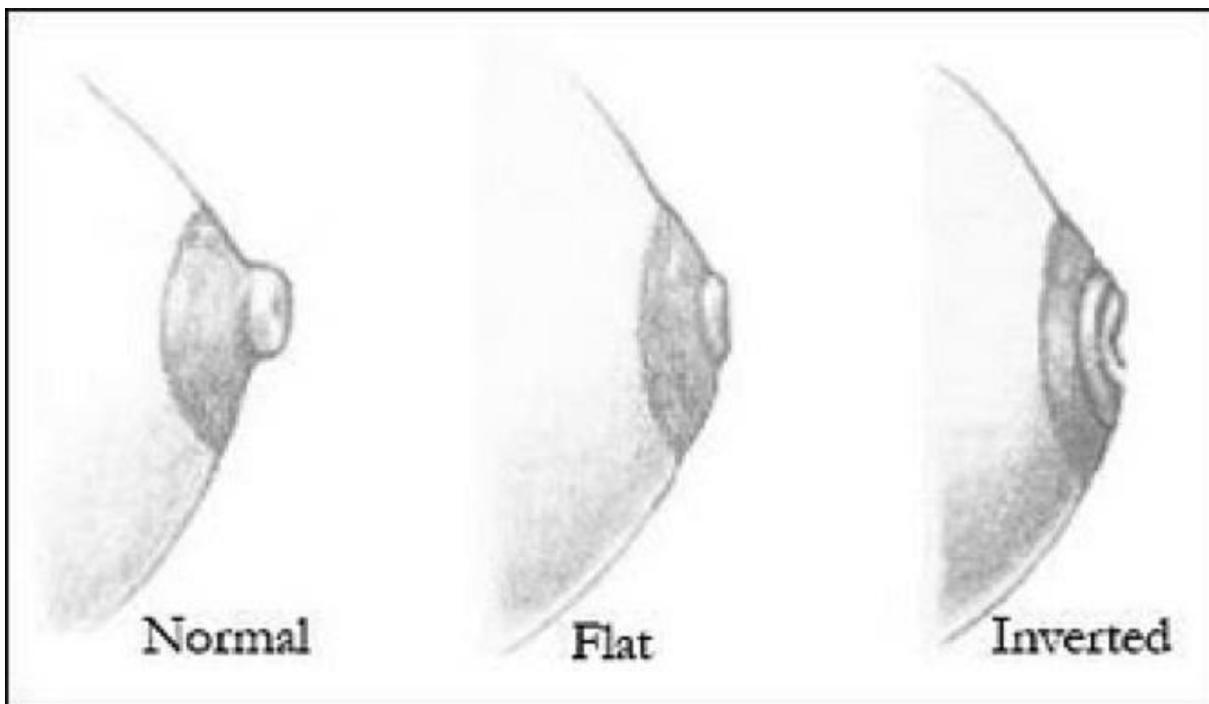
- Breasts soften with feeding
- Swallowing sounds are heard during feeding
- Baby sleeps well between feedings

**3. Provide psychological support for breastfeeding mother**

**4. Counsel mother about breastfeeding problems** - problems with the breast can prevent successful breastfeeding. Thus, advise mothers about prevention, recognition and treatment of common breast problems before discharge. These problems include:

**i. Inverted nipples**

- Mother to stimulate nipples before feeding and shape the breast before attachment



**Figure 8.1: Nipple problems**

Source: <https://www.morethanmilk.co.nz/blogs/help-advice/flat-inverted-nipples>

ii. **Breast engorgement** -Very full, tight and shiny breasts

- Advise mother to feed more often and/or express milk prior to attachment
- Encourage proper breast support by wearing firm brassier.



**Figure 8.2: Engorged breast**

Source: <https://tulamama.com/engorgement/>

- iii. **Sore or cracked nipples** – usually results from poor attachment or skin infection.
- Advise mother to wash her breasts once a day and to avoid soaps, medicated lotions and ointments
  - Teach and encourage good attachment
  - Encourage mother to continue breastfeeding and/or express breast milk to feed baby
  - Treat by applying drops of breast milk to the skin of the nipple



**Figure 8.3: Sore/Cracked nipple**

Source: [babycenter.ca](http://babycenter.ca)

- iv. **Mastitis** – occur when there is a blocked duct or from infection.
- Usually affects one breast with a well-defined red, painful sore and swollen or hardened area.
  - Encourage mother to breastfeed frequently or express breast milk
  - mothers with fever should go to health facility for further treatment



**Figure 8.4: Mastitis**

Source: <https://www.babycentre.co.uk/a251/mastitis>

- v. **Inadequate milk volume** - increase milk supply by increasing frequency of breastfeeding and encourage adequate maternal fluid intake.
  - Increase flow of milk by applying warm compress to the breasts, massaging the back, neck, breasts and nipples.
5. **Begin immunizations** – BCG, OPV and hepatitis B vaccine to be given within 24 hours of delivery. Give appointment for subsequent immunization visit.
6. **Ensure there are no obvious congenital anomalies**, if there is any, refer.
7. **Reassess the baby** - conduct a second complete examination of the baby and document
8. **Reassess breastfeeding**
9. **Give parents guidance for home care** – review key messages to enable mother to:
  - Practice exclusive breastfeeding for six months
  - Recognize and manage common breast problems
  - Practice hand washing
  - Use only 4% chlorhexidine gel for cord care; do not apply any other substance on the cord.
  - Encourage birth registration.
  - Complete immunization schedules
  - Recognize danger signs and present at health facility
  - Avoid harmful traditional practices {tribal marks, female genital mutilation, uvulectomy, (local cutting for “tongue tie”), hot compresses, herbal medications}

# 9

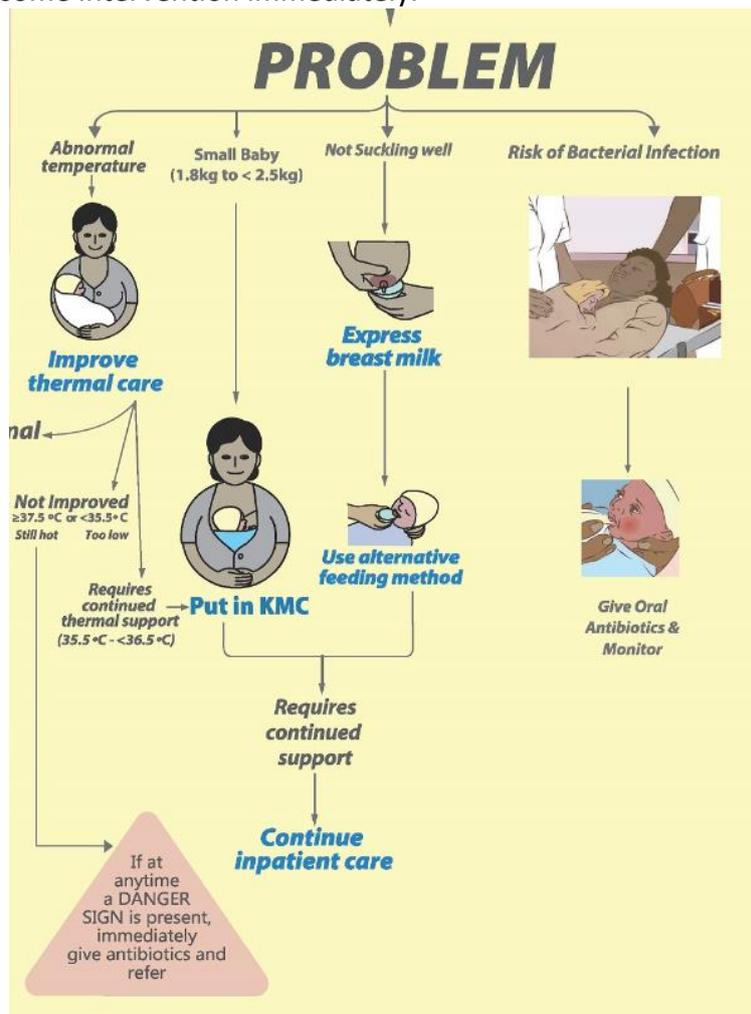
## CHAPTER 9: CARE OF THE BABY WITH SOME PROBLEMS

### Introduction

A baby classified as having some problems is one who either:

- i. Have abnormal temperature ( $>35.5$  -  $<36.5^{\circ}\text{C}$ ) or  $>37.5^{\circ}\text{C}$  OR
- ii. Weigh  $\geq 1.8\text{kg}$  to  $<2.5\text{kg}$  OR
- iii. Is breastfeeding poorly OR
- iv. Is at risk of bacterial infection

Such babies require some intervention immediately.



## i. Care of Baby with Abnormal Temperature

### For babies with temperature $>35.5$ - $<36.5^{\circ}\text{C}$

Improve thermal care with the following steps:

- Restart or improve skin-to-skin care
- Ensure baby is dry and is in clean dry clothing
- Wrap and cover baby's head with a cap; add an extra layer of clothing and socks
- Ensure that the room is warm (at least  $25^{\circ}\text{C}$ ) and is without drafts
- Continue feeding baby during re-warming
- If temperature does not improve after one hour of re-warming, treat baby as one with danger sign
- If temperature is improving but baby cannot maintain normal temperature when wrapped, put in Kangaroo Mother Care (KMC – see Chapter 10)

### For babies with temperature $>37.5^{\circ}\text{C}$

Improve thermal care with the following steps:

- Expose baby
- Remove extra clothing or wraps
- Control environmental temperature
- If temperature does not improve after one hour of exposure, treat baby as one with danger sign

Monitor temperature hourly until it is normal.

If temperature does not improve after one hour of warming, treat baby as one with danger sign.

If temperature is improving but baby cannot maintain normal temperature when wrapped, put in KMC.

## ii. Care of Baby Weighing $\geq 1.8\text{kg}$ to $<2.5\text{kg}$

- Commence KMC (see details in chapter 10)
- Continue feeding the baby

## iii. Care of Baby with Poor Feeding

## Express Breast Milk

For a baby who cannot feed directly from the breast but can coordinate suckling and swallowing, teach the mother how to express breast milk as follows:

- Wash hands with soap and water
- Sit comfortably and hold a clean container under the nipple
- Put her thumb on her breast *above* the areola, and her index finger on the breast *below* the areola, opposite the thumb and supports the breast with her other fingers.
- Press her thumb and index finger slightly inwards towards the chest wall.
- Press her breast between her index finger and thumb.
- Press and release. This should not hurt - if it hurts, the technique is wrong. At first no milk may come, but after pressing a few times, milk starts to drip out or flow in streams.
- Press the areola in the same way from the *sides*, to make sure that milk is expressed from all

segments of the breast.

- Avoid rubbing or sliding her fingers along the skin. The movement of the fingers should be more like rolling.
- Express one breast for at least 3 - 5 minutes until the flow slows; then express the other side; and then repeat both sides. She can use either hand for either breast or change when they tire.



**Figure 9.1: How to express breast milk**

Source: <https://www.slideserve.com/morey/alternative-methods-of-feeding-for-small-or-sick-neonates>

- Explain that to express breast milk adequately takes 20 - 30 minutes, especially in the first few days when only a little milk may be produced.
- It is important not to try to express in a shorter time.
- Massage breasts and apply warm compresses prior to expressing breast milk, this helps to improve milk flow.
- Label the storage containers indicating time breastmilk was expressed.

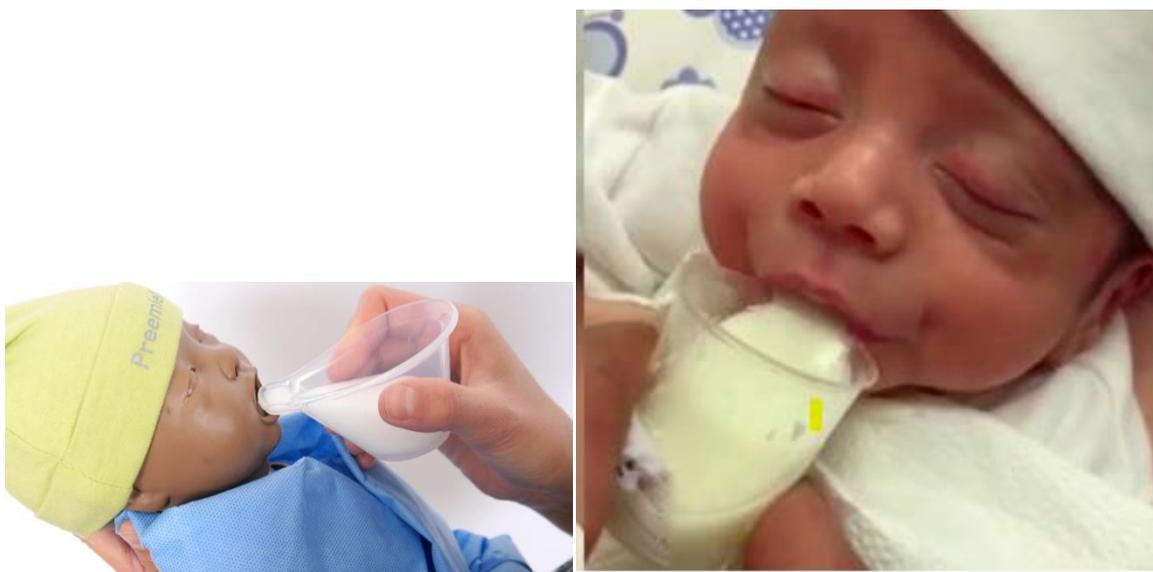
### Storing Breast Milk

Expressed breast milk should be stored in a clean, covered container and kept in a cool place for not more than 6hours. Discard after 6hours.

EBM can also be stored in a refrigerator for up to 24hours.

### Alternative Feeding Method

- A baby that cannot suck effectively should be fed expressed breast milk using an alternative method such as cup.
  - Steps in cup feeding a newborn
    - Hold the baby sitting upright or semi-upright on your lap.
    - Measure the appropriate volume of breast milk into a small cup
    - Hold the small cup of milk to the baby's lips. Tip the cup so that the milk just reaches the baby's lips, the cup rests lightly on the baby's lower lip, and the edges of the cup touch the outer part of the baby's upper lip (Fig 9.2).
    - The baby becomes alert and opens his mouth and eyes.
    - A baby starts to lick the milk into his mouth with his tongue.
    - DO NOT POUR the milk into the baby's mouth. Just hold the cup to his lips and let him lick.
    - When the baby has had enough, he closes his mouth.
    - Burp the baby after feeding.



**Figure 9.2: Cup feeding a baby**

Source: ENCC series/<https://sg.theasianparent.com/alternative-cup-feeding>

## Quantity and Frequency of Feeds

- The amount of each feed volume (to be given every 2 hour) is calculated on the basis of daily fluid requirements.
- Aim to get to about 150mls/ kg by the end of the first week depending on the baby's clinical condition.
- The frequency of feeding depends on the quantity of milk the baby can tolerate per feed and the required daily amount according to weight.
- As a guide, the amount per feed for small babies should be steadily increased by 5ml daily or every other day.
- The following tables provide a guide to the volume and frequency of feeding based on weight and day of life.
- Consumption of expressed breastmilk should follow the sequence with which they were expressed.

**Table 9.1: Suggested feeding volumes in ml per feeding (Adapted from ECSB Provider Guide)**

Birth weight (Kg)	Frequency of feeding	Day 1 Day of birth	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1.8 – 2.0	Every 3h	10	15	20	25	30	35	35+
2.0 – 2.5	Every 3h	15	20	25	30	35	40	40+

### iv. Risk of Bacterial Infection

Babies with risk factors for infection should be identified and treated early to prevent them from developing infection. Such risk factors include:

- Rupture of membrane >18hours before delivery and baby is less than a day old OR foul-smelling liquor
- Mother on antibiotics for infection within 2 days of delivery
- Fever (>38° C) in mother within 2 days of delivery
- Twin delivery where one of them develops fever

Treatment:

Give Amoxicillin dispersible tablet twice daily for 5days. Dosing as shown in Table 9.2:

**Table 9.2: Dose of Amoxicillin DT (Adapted from ECEB Provider Guide)**

<b>AMOXICILLIN</b> Desired range: 75 – 100mg/kg/day divided into 2 daily oral doses Give twice daily for 5days			
<b>Weight</b>	<b>Dispersible tablet (250mg) Per dose</b>	<b>Dispersible tablet (125mg) Per dose</b>	<b>Syrup (125mg in 5ml) Per dose</b>
1.5 – 2.4kg	½ tablet	1 tablet	5ml
2.5 – 3.9kg	½ tablet	1 tablet	5ml
4.0 – 5.9kg	1 tablet	2 tablets	10ml

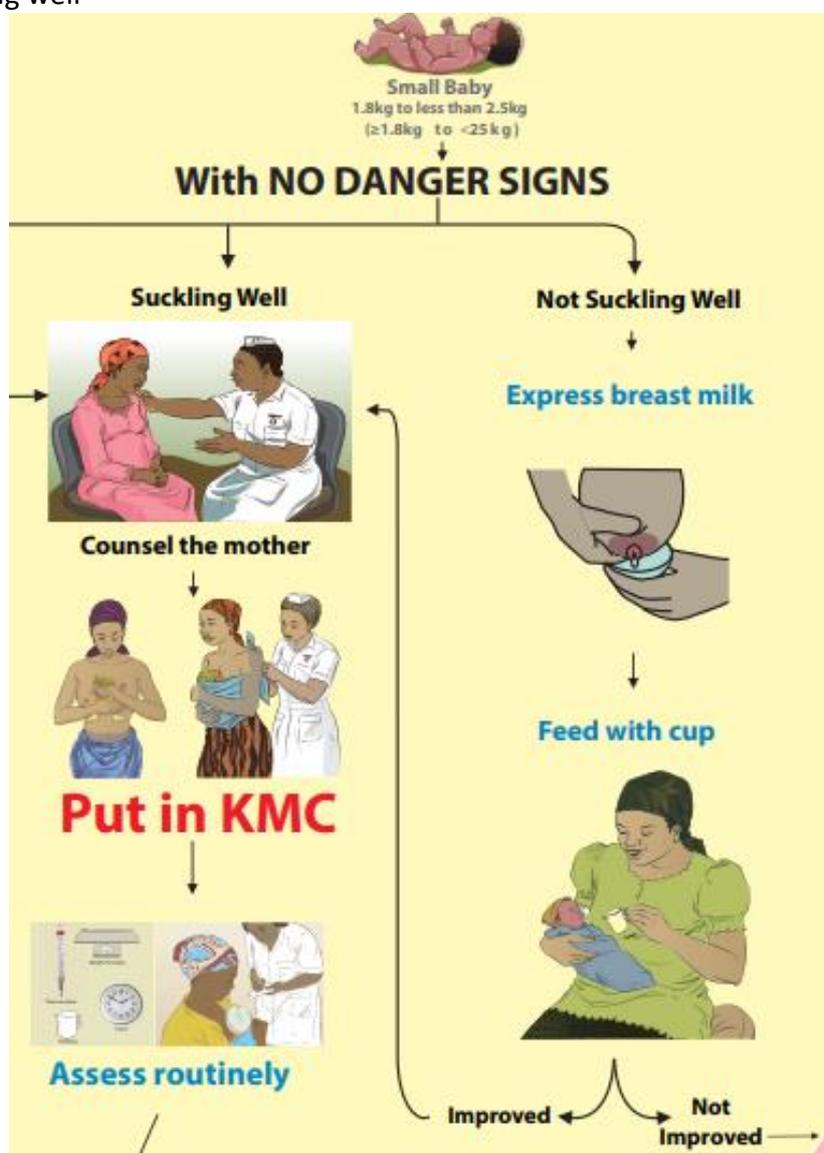
# 10

## CHAPTER 10: CARE OF A SMALL BABY WITH NO DANGER SIGN

### Features of a Small Baby with No Danger Sign

This is a small baby who:

- Weighs between 1.8kg to 2.5kg
- Maintains a normal temperature with thermal care
- Is breathing well



## Thermal Care of a Small Baby with No Danger Sign

### Kangaroo Mother Care (KMC)

- Care of preterm baby carried skin-to-skin with the mother or substitute
- Components include:
  - Early, prolonged, and continuous skin-to-skin contact between the mother (or substitute) and her low birth weight/premature infant
  - Initiated in the hospital and can be continued at home after discharge
  - Exclusive breastfeeding
  - Adequate support for mother and proper follow-up

It is recommended that all health facilities where deliveries take place should have designated KMC unit/corner.

#### Health worker should:

- Encourage mothers with LBW babies to do KMC
- Counsel mother and family on KMC and its advantages
- Counsel at admission, during stay in KMC unit, at discharge and at follow up

#### Who can provide KMC?

- KMC can be provided by mothers, fathers and other adult family members.
- The KMC provider should be willing, in good health, free from serious illness and should maintain basic standards of hygiene such as hand washing, daily bath, clipped fingernails, tied up hair and clean clothes.
- It is recommended that jewelry must be removed as they may be a barrier to maintain hygiene and might cause injury to the baby

#### Which babies are eligible for KMC in PHC?

Babies who weighs 1.8kg to <2.5kg and do not have any danger sign

#### When should KMC be commenced?

Immediately after birth (after the initial care of the first 90 minutes of life)

## Steps in Initiating KMC

### 1. Admission into KMC unit

#### ADMISSION OF A LBW BABY TO THE KMC UNIT

1. Explain what you are going to do and encourage mother to ask questions
2. Dress the baby in nappy, hat and socks
3. Review records (From labour ward or referral notes)
4. Perform the quick assessment of the baby's condition including colour and vital signs
  - Temperature
  - Respiratory rate
  - Heart rate
5. Weigh the baby
6. Perform physical examination of the baby
7. Communicate findings to the mother regarding the physical examination
8. Counsel the mother about KMC:
  - KMC initiation
  - Maintenance of KMC
  - Feeding
  - KMC positioning
  - Advantages of KMC
  - Danger signs

### 2. Prepare mother and baby

#### Mother will need:

- Any front-open blouse or dress that is culturally acceptable.
- A suitable wrap that can retain the baby for extended periods of time. This can be adapted locally or inexpensive "KMC wrap" adapted
- It is not mandatory to have any special dress, garment or binder for KMC so that initiation of KMC is not delayed.
- KMC can be provided using any clean suitable clothing that is available, acceptable and affordable to the mother and the family.



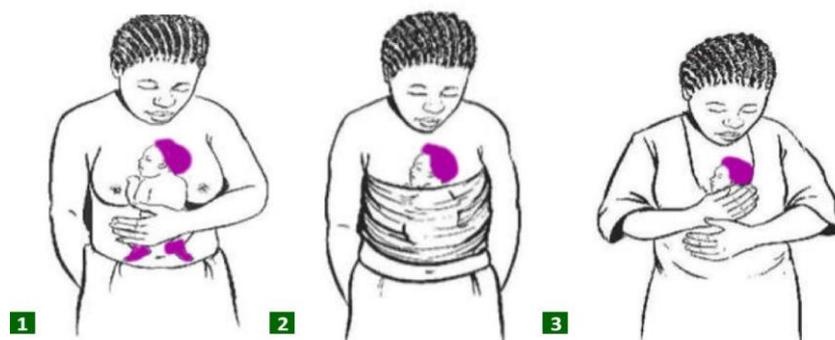
**Baby will need:**

- A cap, nappy/diaper and a pair of socks

**KMC Position**

**Position baby:**

- Ensure mother's chest is bare
- Baby is naked except for cap, socks and diapers
- Place baby upright (with skin-to-skin contact with the mother) in between mother's breast and in frog-like posture
- Ensure mother support baby with her hands
- Cover the baby with a wrap or KMC wrap. The top of the wrap should be under the baby's ear while the bottom is tucked under the baby's buttocks.
- The tight part of the wrap should be over the baby's back
- Ensure baby's abdomen is not constricted and baby is breathing freely
- Tie the wrap securely at the mother's back
- Cover the baby with blanket or shawl
- Mother now wears her top with front opening



**Figure 10.1: Positioning a baby in KMC**  
(Adapted from WHO KMC Manual)



**Figure 10.2: Babies in KMC**

Source: <https://apps.who.int/iris/bitstream/handle/10665/42587/9241590351.pdf;jsessionid=9BBB A7F8EFD0FEC65377EEC4E3F5176F?sequence=1>

### Monitoring of the Baby on KMC (With the aid of KMC chart)

- Babies must remain in KMC position throughout the day except when mother is showering, going to the convenience or cooking with firewood.
- Monitor temperature every 4 hours
- Observation of breathing pattern, heart rate and general wellbeing of the baby.
- Weight monitoring.
- Monitor daily feeds – frequency, volume, tolerance
- Monitor output – wet diapers, stools
- Document treatment given if any.
- Monitor mother's well being
- If baby develops danger sign at any time, refer immediately

### KMC Feeding

#### Breast Feeding

- Breast milk is the best food for preterm/LBW infants and breastfeeding is the best method of feeding.
- Mothers should be supported to breast feed exclusively
- Mothers whose babies require feeding by alternative method should be taught how to express breast milk.

### KMC Support

Mothers of preterm infants need a lot of physical and emotional support which can be provided through encouragement and reassurance and by listening to their worries and concerns with attempts to find solution to them. There may be need to regularly engage the husbands and other major stakeholders such as grandmothers, in-laws, aunties to ensure optimal physical support for them

### Ambulatory KMC

This refers to the KMC which is given after the infant has been discharged home from the clinic to continue KMC at home. Before baby is considered for ambulatory KMC, the following criteria must be met:

#### Baby

- Respirations are normal without any difficulty breathing.

- Temperature is within the normal range in the KMC position for at least three consecutive days (axillary temperature of 36.5-37.5°C).
- There are no signs of infection, illness, or other danger signs.
- There is appropriate weight gain (15 grams/kg/day) for 3 consecutive days (after birth weight regained).
- The baby feeds well and is exclusively breastfeeding.

#### **Mother**

- Is capable of adequately feeding the baby either through breastfeeding or cup feeding using expressed breast milk.
- Is proficient in putting and maintaining baby in KMC position
- Accepts the method, is willing to continue with KMC at home and has support from family, and is able and willing to come for follow-up visits

#### **Follow Up**

All LBW newborns <2000g should have follow-up appointment to assess temperature and weight gain. Babies should be seen in clinic as follows [unless otherwise indicated]:

- Two follow-up visits per week until 37 weeks
- One follow-up visit per week after 37 weeks

If this is not possible, the discharge may need to be delayed until fewer visits are required.

Subsequently, once baby attains the weight of 2500g or 40weeks post-conception age, he shall be seen at the routine well newborn clinic.

#### **Re-Admission during KMC Follow-Up Visit**

Any baby who developed any danger sign during follow-up should be referred immediately for appropriate treatment.

#### **Discontinuing KMC**

KMC should be discontinued when/if:

- The baby reaches term (gestational age 40 weeks) or weighs 2500g
- The mother is sick and unable to continue and no one else is willing to continue KMC on her behalf OR
- The baby is sick.

***FOR DETAILED GUIDE ON KMC, SEE THE NATIONAL KMC OPERATIONAL GUIDELINE***

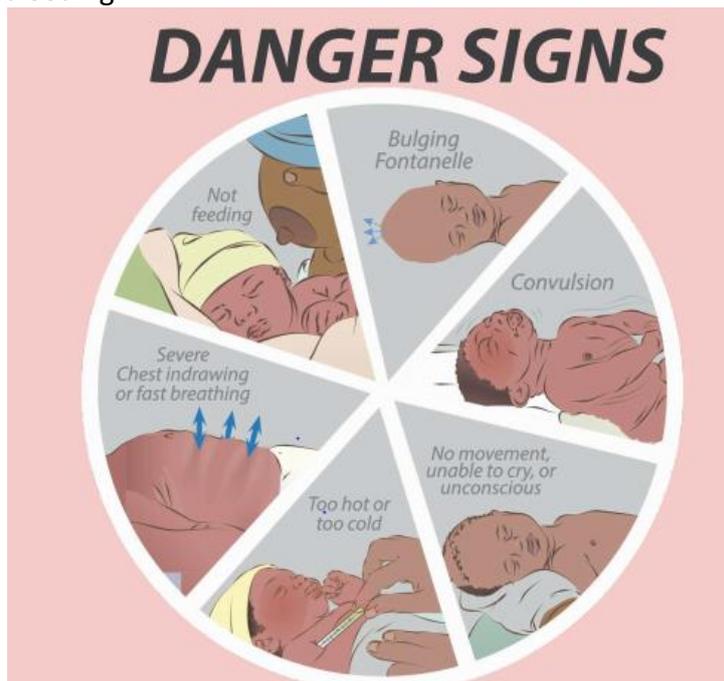
# 11

## CHAPTER 11: CARE OF BABY WITH DANGER SIGN

Danger signs are caused by infections or other serious conditions which may kill the baby if no prompt intervention.

All babies must be assessed for danger signs within the first 90 minutes of life and frequently while still in the hospital.

- Mothers must be taught how to identify danger signs
- Danger signs include:
  - Fast breathing – breathing rate greater than 60 breaths per minute
  - Chest in-drawing – spaces between, above or below the ribs indent with each breath
  - Bulging fontanelle (raised anterior frontanelle)
  - Convulsion – repeated back and forth abnormal movement of the arms and legs that cannot be stopped by holding the arm or leg, staring or blinking of the eye or lip smacking.
  - Temperature that is too low (<35.5°C)
  - Temperature that is high (>37.5°C)
  - Not feeding
  - No movement or very little movement
  - Unconsciousness
  - Jaundice – yellowness of any part of the baby's body
  - Weight <1.8kg
  - Persistent bleeding



## What to Do:

- **Communicate with parents/caregiver:**
  - The need for referral
  - The referral hospital
  - Available continued care for the mother (if needed) at the referral hospital
  - Obtain their consent for referral
- **Give antibiotics** – IM gentamicin and benzyl penicillin at dose given as shown in Table 11.1:

**Table 11.1: Reconstitution/dosage of Gentamicin and Benzyl – Penicillin (Adapted from ECSB Module)**

	Gentamicin ampoule (80mg/2ml) Desired range is 5 – 7.5mg/kg/day. Dilution: withdraw 1ml of gentamicin and add 1ml of sterile water = 20mg/ml	Benzyl – Penicillin Dose: 50,000Unit/kg Dilution: To a vial of 600mg (1000000Units)	
Weight in Kg	Volume per dose	Add 2.1ml sterile water = 2.5ml at 400,000Units/ml	Add 3.6ml sterile water = 4ml at 250,000Units/ml
1.5 – 2.4	0.4ml	0.2ml	0.4ml
2.5 – 3.9	0.8ml	0.4ml	0.6ml
4.0 – 5.9	1.2ml	0.6ml	1ml

- **Stabilize the baby:**
  - Check blood glucose level: if <45mg/dl, do either of the following:
    - If baby is fit to take orally, feed with expressed breast milk OR give 2ml/kg of 10% Dextrose
    - If baby is not fit to take orally, establish an intravenous line and give 2ml/kg of 10% Dextrose slowly.
  - If baby is convulsing, give IM Phenobarbitone 20mg/kg start
  - If there is persistent bleeding, apply pressure dressing
  - If there is fast breathing or chest in-drawing, check SPO<sub>2</sub>, if <90%, commence intranasal oxygen
- **Refer immediately for advanced care in KMC position**, feed with expressed breastmilk in transit if feasible.

# 12

## CHAPTER 12: SPECIAL CONSIDERATIONS

### NEWBORNS WITH CONGENITAL DEFECTS

Babies with major congenital defects should be referred for advance care immediately after stabilizing them. Such defects include:

#### 1. Open abdominal wall defects (Fig 12.1):

- Ensure baby takes nothing by mouth
- Place baby in a plastic bag or wrap. If a bag is used, the baby's body is placed in the bag (legs first) up to the area just above the nipple line. The hands are left outside of the bag (Fig 12.2a).  
OR  
Wrap a clean plastic bag around the defect (Fig 12.2b)  
OR  
Cover the defect with sterile gauze soaked with warm normal saline and keep the gauze moist
- Keep the baby warm
- Refer immediately



**Figure 12.1: Anterior abdominal wall defects: Omphalocele and Gastroschisis**



**Fig 12.2a**



**Fig 12.2b**

**Figure 12.2: Preparing a baby with open abdominal wall defect for referral**

## 2. Neural tube defects e.g. Spina bifida (Fig 12.3)

This is an open spinal cord defect in which there is an opening in the vertebral body (the bone that surrounds the spinal cord) usually in the lower back but can be located anywhere from the upper back to the very bottom of the spine.

- Cover the lesion with sterile gauze wet with saline.
- Keep the patient in lateral (side-lying) or prone position to avoid pressure on the sac or nerves.
- Ensure baby is kept warm
- Refer immediately



**Figure 12.3: Neural tube defect – Spina bifida**

### 3. Imperforate Anus (Fig 12.4)

This is a congenital defect in which a normal anal opening is absent at birth. It is usually identified during the first complete physical examination within the first 90 minutes of life. If not recognized early, baby develops abdominal distension, vomiting and failure to pass meconium.

- Baby should not receive anything by mouth
- Refer immediately



**Figure 12.4: Imperforate anus**

### 4. Abdominal distention (Fig 12.5)

Abdominal distention is a common manifestation in newborns and can be life-threatening in severe cases. It is usually due to congenital anomalies of the gastrointestinal tract or sepsis. The infant may have other symptoms such as vomiting, failure/delayed passage of meconium, fever, tachypnoea.

- Baby should not receive anything by mouth
- Pass a nasogastric tube for decompressing the abdomen and set up an intravenous line for fluid administration (these should be done only if a senior cadre medical personnel- a nurse or doctor with expertise in these interventions is available)
- Check blood glucose and correct as indicated
- If there are features suggestive of sepsis, give pre-referral antibiotics (Table 11.1)
- Keep baby warm
- Refer immediately



**Figure 12.5: Newborn with abdominal distention**

Source: <https://neoreviews.aappublications.org/content/15/9/e419>

5. **Newborns with other birth defects such as Cleft lip/palate (Fig 12.6) and Club foot (Fig 12.7)** should be referred for specialist care. Such babies should be allowed to breastfeed or be fed by EBM.



**Figure 12.6: Cleft lip and cleft palate**

Source: <https://www.chop.edu/conditions-diseases/cleft-lip-and-palate>



**Figure 12.7: Club foot**

# 13

## CHAPTER 13: REFERRAL

A **referral** can be defined as a process in which a health worker at a one level of the health system, having insufficient resources (drugs, equipment, space, skills) to manage a clinical condition, seeks the assistance of a better or differently resourced facility at the same or higher level to assist in, or take over the management of, the client's case. Key reasons for deciding to refer either an emergency or routine case include seeking:

- Expert opinion regarding the patient
- Additional or different services for the client
- Admission and management of the client
- The use of diagnostic and therapeutic tools

### When to Refer

All babies with danger sign must be referred for advanced care immediately (Refer to red zone in ENCC guidelines)

#### Pre-Referral Stabilization

- Ensure baby is breathing and kept warm- skin to skin
- Give pre-referral antibiotics when indicated
- Give anti-convulsant as indicated
- Apply pressure dressing over a bleeding site
- Ensure breastfeeding/EBM if there is no contraindication to oral intake

#### Communication

- Counsel the family
- Contact the receiving facility in advance (usually by phone) and confirm the capacity to receive the baby
- Fill the two-way referral form in triplicate

#### Documentation

- Use the PHC two-way referral form for all referrals
- Document referral in the facility register
- Write the condition of the baby, all that was done, the current state of the baby and reason for referral

## Transportation

- Arrange for appropriate mode of transportation, leveraging on the community transport systems and NURTW network where possible
- Health worker to accompany when feasible/indicated e.g. a baby that requires bag and mask ventilation must be accompanied by HCW
- Transport in KMC position preferably or use transport incubator if KMC position is not feasible

## Where referral is not possible

Referral for advanced care is the preferred option for management of babies with danger sign and HCWs must do everything possible to ensure that such babies are referred. However, there are cases where referral may not be immediately possible due to reasons such as geographical barrier, security issues and some logistics issues. While trying all available means to ensure that referral becomes possible, the health worker should implement the following steps:

- A. Re – Classify baby:** based on the danger sign present, re – classify baby into one of three groups as shown in table below:

**Table 12.1: Re – classify a baby with danger signs (Adapted from ECEB Provider Guide)**

SEVERE PNEUMONIA	CLINICAL SEVERE INFECTION	CRITICAL ILLNESS
<ul style="list-style-type: none"><li>• Fast breathing (&gt;60bpm) in a baby 0 – 6 days old</li></ul>	<ul style="list-style-type: none"><li>• Movement only when stimulated</li><li>• Not feeding well on observation</li><li>• Temperature <math>\geq 38^{\circ}\text{C}</math></li><li>• Temperature <math>&lt; 35.5^{\circ}\text{C}</math></li><li>• Severe chest in-drawing</li></ul>	<ul style="list-style-type: none"><li>• Convulsions</li><li>• Unable to feed at all</li><li>• Unable to cry</li><li>• No movement on stimulation</li><li>• Cyanosis</li><li>• Bulging fontanelle</li></ul>

**B. Commence treatment for each category as follows:**

**A. SEVERE PNEUMONIA**

- Commence oral Amoxicillin DT for seven days at doses shown in Table 9.2
- Explore all possibilities to ensure referral is possible
- Promote exclusive breastfeeding (EBF)
- Ensure baby is kept warm
- Ensure baby is assessed daily. Assessment on day 4 is mandatory to determine if baby is improving or not
- At every assessment, look for any new sign and re-classify as appropriate
- Refer as soon as referral becomes possible

**B. CLINICAL SEVERE INFECTION**

- Re – emphasize and support referral
- Give IM Gentamicin for two days at doses shown in Table 11.1 and commence oral Amoxicillin DT for seven days at doses shown in Table 9.2
- Counsel mother to return immediately if baby's condition worsens

- Promote exclusive breastfeeding (EBF)
- Ensure baby is kept warm
- Ensure baby is assessed daily. Assessment on day 4 is mandatory to determine if baby is improving or not
- At every assessment, look for any new sign and re-classify as appropriate
- Refer as soon as referral becomes possible

### **C. CRITICAL ILLNESS**

- Advanced care remains the first and the best option for this category of babies
- Give first dose of IM Benzyl – Penicillin and IM Gentamicin at doses shown in Table 11.1
- Make extensive efforts to ensure that referral is possible
- If referral remains impossible despite all efforts, continue IM Benzyl – Penicillin and IM Gentamicin daily for seven days or until referral becomes possible whichever comes first
- Assess baby daily until referral becomes possible
- Promote exclusive breastfeeding
- Ensure baby is kept warm
- Refer as soon as referral becomes possible

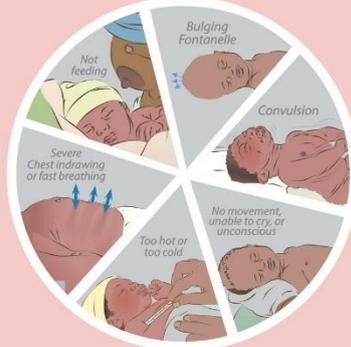


FEDERAL MINISTRY OF HEALTH NIGERIA

ACTION PLAN

Where Referral is Not Possible

DANGER SIGNS



RE-CLASSIFY

Severe Pneumonia



Fast breathing ( $\geq 60$  bpm) in infants (0-6 days old)

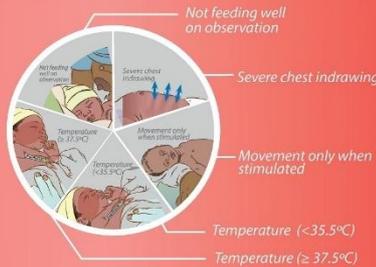


Give oral Amoxicillin DT for 7 days Advise the mother to return for follow up on day 4



Put in KMC + EBM

Clinical Severe Infection



Re-emphasize referral

If referral still not possible

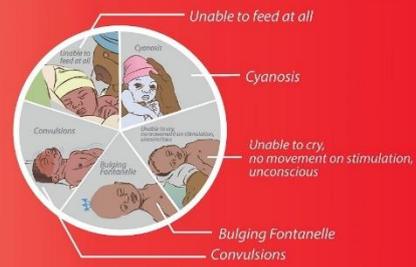


Give I.M. Gentamicin (2days) & Oral Amoxicillin DT (7days)



Daily Reassess & Re-emphasize referral till referral is possible

Critical Illness



Re-emphasize referral

If referral still not possible



Give I.M. Gentamicin (7days) + I.M. Benzyl Penicillin (7days)



Daily Reassess, Reemphasize referral till referral is possible

As soon as Referral becomes possible, put in KMC + EBM

Key  
KMC = Kangaroo Mother Care  
EBM = Feed with Expressed Breast Milk by cup  
I.M. = Intramuscular

# 14

## CHAPTER 14: DISCHARGE AND FOLLOW UP

### Discharge

- Examine the baby and confirm that the baby meets the requirements for discharge.
- In general, discharge the baby when the:
  - Baby is breathing without difficulty and has no other ongoing problems that cannot be managed on an outpatient basis
  - Baby's body temperature is being maintained in the range of 36.5 °C to 37.5 °C (using a method that can be continued at home if the baby is small [less than 2.5 kg at birth or born before 37 weeks gestation])
  - Mother is confident about her ability to care for the baby
  - Within the period of mother's stay in the center breastfeeding should have been initiated, good positioning and attachment established with at least 8-12 times breastfeeding sessions within 24hrs with continuous support. Within this time, mother would be observed for breastfeeding issues e.g flat nipples; Baby would have passed meconium and urine
  - Baby observed for emergence of jaundice, bleeding cord, birth trauma, resolving caput, eye discharge and Baby's colour should be pink and good
  - HIV exposed Infant should be managed according to National PMTCT guideline;
  - Mother has been taught and recognizes danger signs as shown on the discharge guide (give the mother a copy of the discharge guide – Appendix II)
- Advise the mother to return with the baby immediately if the baby develops any danger sign
- Ensure that the baby has received the necessary immunizations
- Advise the mother on home care (normal newborn care and breastfeeding, proper position for sleeping, danger signs, when and where to go if danger signs occur, etc.) Give her an appointment for a follow-up visit.
- Discuss with the mother support systems at home or in the community, especially if mother is adolescent, single or a first-time mother.
- Complete the baby's clinical record and discharge guide with discharge information, including weight, discharge diagnosis, and the plan for follow-up.
- Complete a discharge form (Summary) if available.



## Follow Up

### FOLLOW UP VISIT AS FOLLOWS

- Second postnatal visit day 3
- Third postnatal visit: day 7
- Fourth visit: between day 14 – 21
- Fifth visit: day 28
- Sixth visit: day 42 (6 weeks)
- And anytime the mother sees danger signs or has any concerns

### AT FOLLOW UP VISIT, CHECK;

- Technique and adequacy of breastfeeding
- Weight (weigh and plot on growth chart (intergrowth chart – appendix iii))
- Cord examination
- Eye examination
- Immunization status

### Conduct a general examination and look for danger signs

- if baby is not seen on any of the follow up days, do home visit

# APPENDIX I



## Current EPI Schedule in Nigeria

Minimum Target Age of Child	Type of Vaccine	Dosage	Route of administration	Site
<b>At birth</b> 	BCG	0.05ml	Intra dermal	Left Upper Arm
	*OPV0	2 drops	Oral	Mouth
	**Hep B birth	0.5ml	Intra muscular	Antero-lateral aspect of Right thigh
<b>6 weeks</b> 	Pentavalent (DPT, Hep B and Hib) 1	0.5ml	Intra muscular	Antero-lateral aspect of left thigh
	Pneumococcal Conjugate Vaccine 1	0.5ml	Intra muscular	Antero-lateral aspect of Right thigh
	OPV1	2 drops	Oral	Mouth
	Rota 1	1ml	Oral	Mouth
<b>10 weeks</b> 	Pentavalent (DPT, Hep B and Hib) 2	0.5ml	Intra muscular	Antero-lateral aspect of left thigh
	Pneumococcal Conjugate Vaccine 2	0.5ml	Intra muscular	Antero-lateral aspect of Right thigh
	OPV2	2 drops	Oral	Mouth
	Rota 2	1ml	Oral	Mouth
<b>14 weeks</b> 	Pentavalent 3 (DPT, Hep B and Hib)	0.5ml	Intramuscular	Antero-lateral aspect of left thigh
	Pneumococcal Conjugate Vaccine 3	0.5ml	intra muscular	Antero-lateral aspect of Right thigh
	OPV3	2 drops	Oral	Mouth
	IPV	0.5ml	Intramuscular	Antero-lateral aspect of Right thigh (2.5cm apart from PCV)
<b>6 months</b>	Vitamin A 1st dose	100,000 IU	Oral	Mouth
<b>9 months</b> 	Measles 1st dose	0.5ml	Subcutaneous	Left upper arm
	Yellow Fever	0.5ml	Subcutaneous	Right upper arm
	Meningitis Vaccine	0.5ml	Intramuscular	Antero-lateral aspect of Left thigh
<b>15 months</b> 	Vitamin A 2nd dose	200,000 IU	Oral	Mouth
	Measles 2 dose (MCV2)	0.5ml	Subcutaneous	Left upper arm

\*OPV0 must be given before the age of two weeks \*\*Hep B at birth should be given preferably within 24 hours of birth but can be given up to 14 days of birth. BCG should be given within two weeks of birth and can be given up until 11 months.

# APPENDIX II: DISCHARGE GUIDE



After birth, all mothers and newborns need to stay in the facility for at least 24 hours to receive necessary health checks, counseling, and care before discharge.



## Before Discharge, Every Mother and Newborn Needs Counseling and Care

Make sure the following criteria have been met before they leave the facility.

### For all mothers and newborns:

- ☑ It has been more than 24 hours since an uncomplicated vaginal birth.
- ☑ The mother has been counseled on exclusive breastfeeding, hygiene, newborn care, maternal nutrition, postpartum depression, protection from mosquitos, follow-up care for the mother for any medical conditions (e.g., high blood pressure), resuming sexual relations, and ensuring safe sex.
- ☑ The mother and family have been counseled on and can recognize danger signs for the mother and baby and know where to seek help.
- ☑ The mother has been counseled on postpartum family planning (including the benefits of spacing births at least 3 years apart), has been offered a contraceptive method of choice (as available), and has been referred for family planning follow-up.
- ☑ The baby has received eye care, cord care, vitamin K, and immunizations per national guidelines, and has been linked to the immunization register.
- ☑ If the mother is living with HIV, she and the newborn have received ARVs. If the mother has had a positive serologic test for syphilis, she and her newborn are completing treatment per protocol; if the baby has signs of congenital syphilis, the family has been referred for specialty care.
- ☑ Follow-up has been scheduled for postnatal care (at 48–72 hours, at 7–14 days, and at 6 weeks), immunization, and family planning.



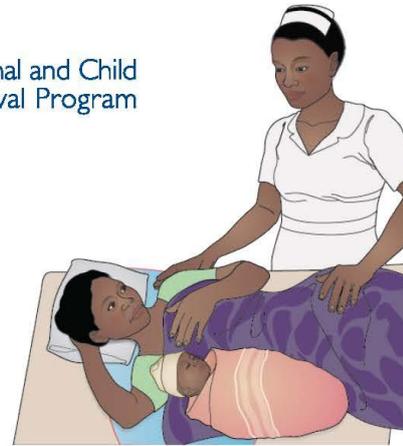
### A mother with any of the following should stay in the facility for more care:

- ☑ Any danger sign: heavy bleeding, severe abdominal pain, unexplained pain in the chest or legs, disorientation, visual disturbance, severe headache, breathing difficulty, fever, chills, or vomiting
- ☑ Bleeding that is heavy or has increased since birth (e.g., bleeding soaks a pad in less than 5 minutes)
- ☑ Any abnormal vital sign: high blood pressure (SBP  $\geq$  140 mmHg or DBP  $\geq$  90 mmHg), low systolic blood pressure  $<$  100 mmHg, temperature  $<$  36.0°C or  $\geq$  38.0°C, or heart rate  $\geq$  90 beats per minute
- ☑ Inability to urinate easily or leaking urine
- ☑ Treatment for a complication and a condition that has not stabilized (e.g., vital signs are not normal or she has a danger sign)

### A newborn with any of the following should stay in the facility for more care:

- ☑ Feeding poorly or refusing to eat
- ☑ Convulsions
- ☑ Fast breathing ( $\geq$  60 breaths/minute)
- ☑ Severe chest in-drawing
- ☑ Fever (temperature  $>$  37.5°C axillary)
- ☑ Hypothermia (temperature  $<$  36.5°C)
- ☑ No movement or movement only on stimulation
- ☑ Any yellowing (jaundice) of the skin or mucous membranes (eyes, mouth)
- ☑ Umbilical stump that is bleeding or has discharge, foul odor, or redness around it
- ☑ Has not passed urine and/or stool, or
- ☑ Weight of  $<$  2,500 g





# POSTNATAL CARE PRE-DISCHARGE CHECKLIST

Mothers and newborns should stay in the facility at least 24 hours after delivery.

Complete checklist items below for every mother and newborn, regardless of when they are discharged from the maternity.

Assess Mother for Problems	No	Yes	Recommended Actions
The mother has a danger sign: <ul style="list-style-type: none"> <li>• Heavy bleeding</li> <li>• Severe abdominal pain</li> <li>• Unexplained pain in chest or legs</li> <li>• Disorientation</li> </ul>		→	Assess the cause(s) and initiate care or refer. Delay discharge until all danger signs have been resolved for at least 24 hours and ensure there is a follow-up plan in place at the time of discharge.
The mother's bleeding is heavy or has increased since birth (e.g., bleeding soaks a pad in less than 5 minutes).		→	Administer a uterotonic and evaluate and manage possible causes of bleeding (e.g., uterine atony [not contracted], retained placenta, or vaginal/cervical tear). Delay discharge.
The mother has an abnormal vital sign: <ul style="list-style-type: none"> <li>• High blood pressure (SBP <math>\geq</math> 140 mmHg or DBP <math>\geq</math> 90 mmHg) or low blood pressure (SBP <math>&lt;</math> 100 mmHg)</li> <li>• Temperature <math>&lt;</math> 36.0°C or <math>\geq</math> 38.0°C</li> <li>• Heart rate <math>\geq</math> 90 beats per minute</li> </ul>		→	Evaluate the cause of abnormal vital sign(s) and treat or refer. Delay discharge until vital signs have been normal for at least 24 hours and no danger signs remain.
The mother is not able to urinate easily or is leaking urine.		→	Delay discharge; continue to monitor and evaluate the cause; treat or refer as needed.
The mother is being treated for a complication, and her condition has not stabilized (e.g., vital signs are not normal or she has a danger sign).		→	Delay discharge until the mother's condition has been stable for at least 24 hours, her vital signs have returned to normal, and no danger signs remain. Refer her for specialty care if necessary.
Assess Baby for Problems	No	Yes	Recommended Actions
The baby has any of these danger signs: <ul style="list-style-type: none"> <li>• Feeding poorly or refusing to eat</li> <li>• Convulsions</li> <li>• Fast breathing (<math>\geq</math> 60 breaths/minute)</li> <li>• Severe chest in-drawing</li> <li>• Fever (temperature <math>&gt;</math> 37.5°C axillary)</li> </ul>			Assess the cause of danger signs and initiate care or refer. Treat illness and delay discharge per protocol; ensure there is a follow-up plan in place at the time of discharge.
			<ul style="list-style-type: none"> <li>• Hypothermia (temperature <math>&lt;</math> 36.5°C)</li> <li>• No movement or movement only on stimulation</li> <li>• Any yellowing (jaundice) of the skin or mucous membranes (eyes, mouth)</li> </ul>
The baby is not breastfeeding at least every 2–3 hours (day and night).			Delay discharge and evaluate causes. Treat or refer. Delay discharge until the baby has been breastfeeding well for at least 24 hours.
The baby weighs $<$ 2,500 g			Delay discharge. Initiate appropriate care for small babies or refer for advanced care.

Assess Baby for Problems	No	Yes	Recommended Actions
The baby has not passed urine and/or stool.			Delay discharge, evaluate the cause, and monitor or refer as needed.
The baby's umbilical stump is bleeding or has discharge, a foul odor, or redness around it.			Delay discharge. Ensure that appropriate care is started.

### ESSENTIAL ACTIONS FOR EVERY MOTHER AND BABY BEFORE DISCHARGE

Action	Initial
<p>Examine the mother and baby (thorough physical exam, including head circumference, weight check, evaluation for gross congenital malformations). Verify normal vital signs.</p> <p>Mother:</p> <ul style="list-style-type: none"> <li>• Temperature <math>\geq 36.0^{\circ}\text{C}</math> and <math>\leq 38.0^{\circ}\text{C}</math></li> <li>• SBP <math>\geq 100</math> mmHg and <math>&lt; 140</math> mmHg; DBP <math>&lt; 90</math> mmHg</li> <li>• Heart rate <math>&lt; 90</math> beats per minute</li> </ul> <p>Newborn:</p> <ul style="list-style-type: none"> <li>• Respiration <math>&lt; 60</math> breaths per minute</li> <li>• Temperature <math>36.5\text{--}37.5^{\circ}\text{C}</math> axillary</li> </ul>	
Confirm newborn immunizations given and recorded in the immunization register. Confirm provision of eye care, cord care, and vitamin K, according to national guidelines.	
Assess breastfeeding and provide support if needed (e.g., positioning of baby, nipple care).	
<p>Confirm that the mother has been counseled on postpartum family planning, including the benefits of spacing births at least 3 years apart. Confirm that the woman has started her contraceptive method of choice (as available), or that she has a plan to start later and has been referred for family planning follow-up.</p> <p><i>Note: Pre-discharge postpartum contraceptive options include the lactational amenorrhea method (LAM), intrauterine device (IUD), progesterone-only pills, implants, condoms (which also protect against sexually transmitted infections), and permanent methods. Injectables may be started at 6 weeks postpartum and combined oral pills may be started after 6 months or at 6 weeks postpartum if the mother has ceased breastfeeding.</i></p>	
<p>Counsel the mother and family on the following:</p> <ul style="list-style-type: none"> <li>• Hand washing, general hygiene, and cord care</li> <li>• Keeping the baby warm</li> <li>• Danger signs for the baby and mother (see above) and where to go if any danger signs occur</li> <li>• Exclusive breastfeeding for first 6 months and avoiding prelacteal feeds</li> <li>• Healthy eating for the mother and iron supplementation through 3 months</li> <li>• Signs of postpartum depression and how to get help</li> <li>• Sleeping under long-lasting insecticide treated nets</li> <li>• Follow-up care for the mother for any medical conditions</li> <li>• Resuming sexual relations and using condoms for protection from HIV and other sexually transmitted infections</li> </ul>	
Confirm HIV/syphilis results. If mother is living with HIV, verify that antiretrovirals have been given to the mother and baby per protocol, and that a follow-up plan is communicated. If the mother has or had a positive serologic test for syphilis, treat the mother and newborn per protocol; refer babies with signs of congenital syphilis for specialty care.	
<p>Review the follow-up plan for routine care and review the complication readiness plan in case any danger signs occur (mother or baby). Link to community postnatal services, if possible. Remind family about:</p> <ul style="list-style-type: none"> <li>• Postnatal care visits at 48–72 hours, 7–14 days, and 6 weeks after birth, or according to national guidelines</li> <li>• Baby's immunizations</li> <li>• Follow-up family planning</li> </ul>	
If there are no problems and all of the essential actions have been completed, the mother and baby may be discharged. Thank the woman and her family for coming to give birth at the facility. Encourage her to give feedback on her birth experience. Be sure to document all care in the mother's and newborn's records.	

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

This job aid is made possible by USAID, the Maternal and Child Survival Program, and the Maternal and Child Health Integrated Program, and does not reflect the views of USAID or the United States Government.

Illustration by: Kimberly Battista

## NEONATAL DISCHARGE CHECKLIST

### **Things to do 1 week before discharge:**

- Mother's maiden name \_\_\_\_\_
- Father's name \_\_\_\_\_
- Pediatrician's name and phone number \_\_\_\_\_  
*\*\*Remind parents with HMOs that they need a referral from their primary physician for any specialty appointments.*
- Prescriptions (including for specialty formulas such as Neocate, Elecare, Pregestimil, Neosure, Enfacare) \_\_\_\_\_
- Car seat testing \_\_\_\_\_ • WIC form (if needed) \_\_\_\_\_
- Home health equipment (DME) form/order and training scheduled (by Case Manager or Social Worker) \_\_\_\_\_

### **Things to do 1–3 days before discharge:**

- Blood pressure \_\_\_\_\_ • Head circumference \_\_\_\_\_
- Chest circumference \_\_\_\_\_ • Weight \_\_\_\_\_
- Length \_\_\_\_\_ • Newborn screen \_\_\_\_\_
- Appointments \_\_\_\_\_
- Home health referral (if needed) \_\_\_\_\_
- Discharge follow-up instructions \_\_\_\_\_
- Medication schedule \_\_\_\_\_

### **Things to do the day of discharge:**

- Delayed infant discharge form (if infant is discharged home with mother) \_\_\_\_\_
- Release of patient to person other than natural mother form (if infant is discharged home without mother) \_\_\_\_\_
- EPIC discharge note \_\_\_\_\_

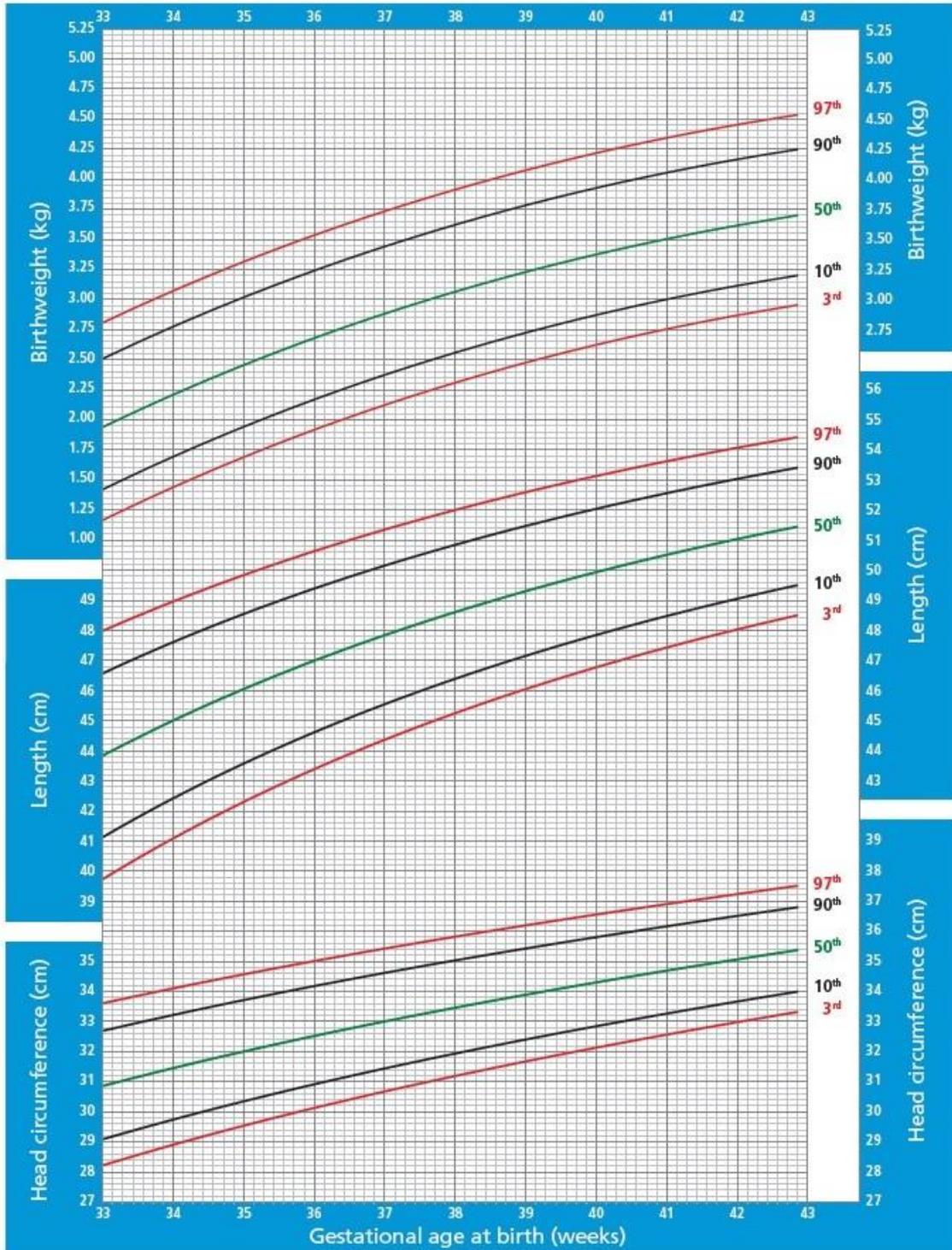
### **Things to send home with parents:**

- Gift pack
- Patient's belongings
- Digital thermometer
- Bulb syringe
- Oral medication syringes
- Additional supplies if necessary
- Discharge folder to include the following:
  - Discharge instructions
  - Scheduled appointments
  - Medication schedule
  - Medication teaching sheets
  - Formula preparation sheets
  - Completed immunization card
  - Admission and discharge summaries for parents
  - Additional teaching materials as needed

# APPENDIX III: INTERGROWTH CHART



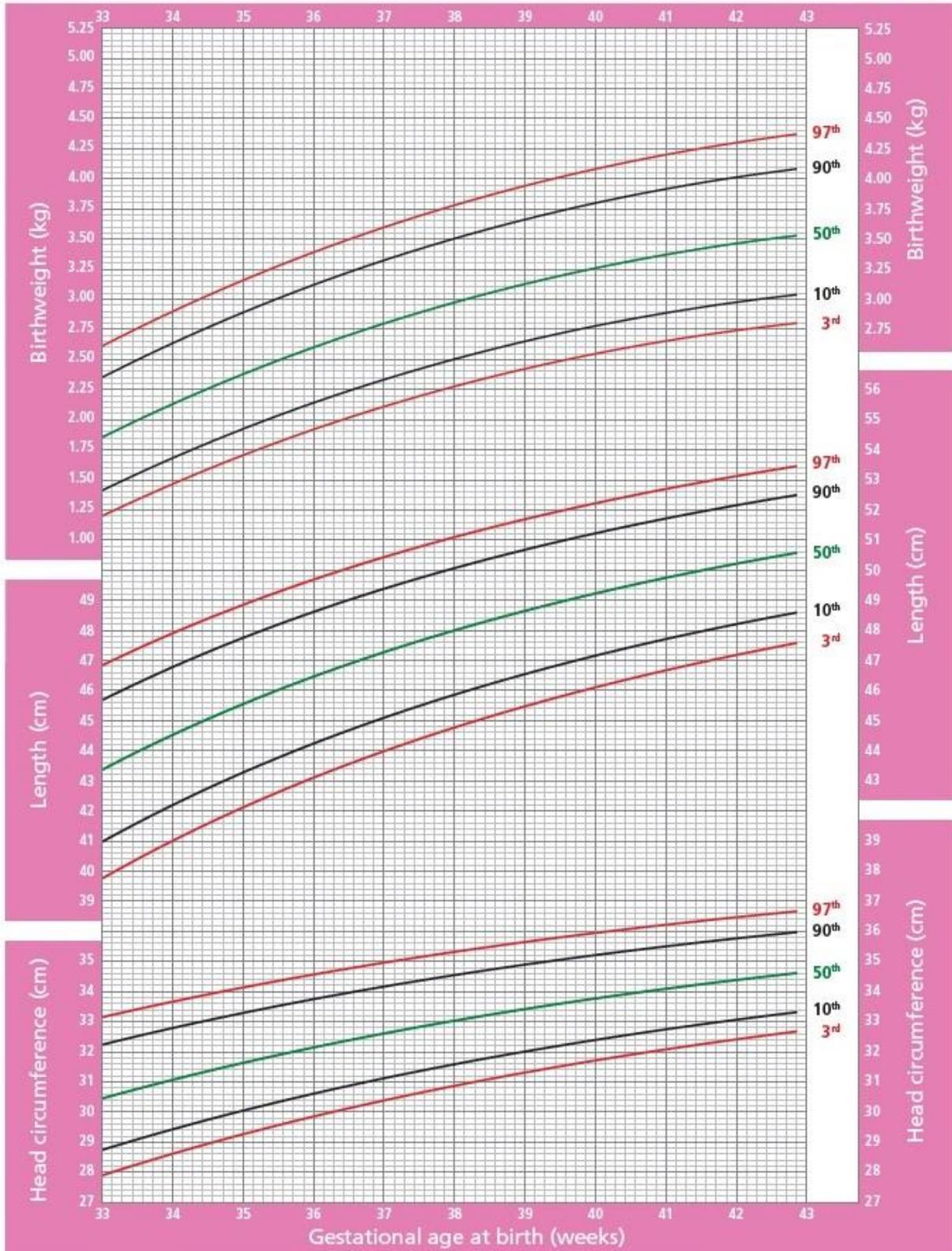
## International Standards for Size at Birth (Boys)

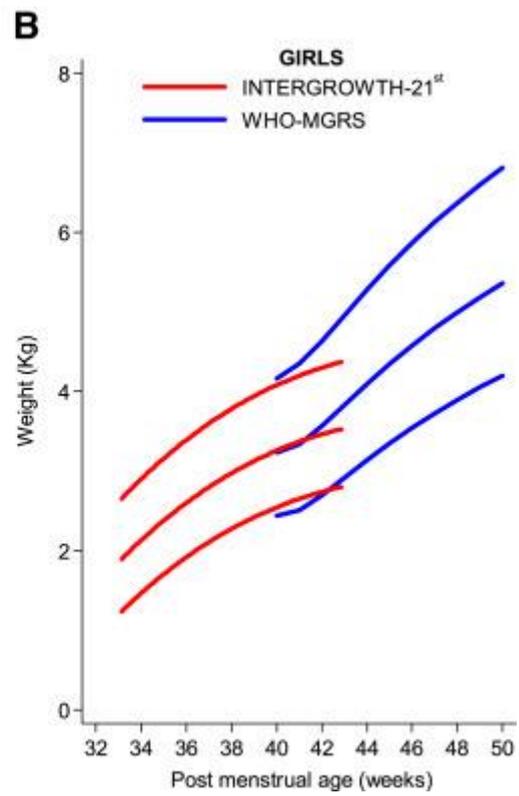
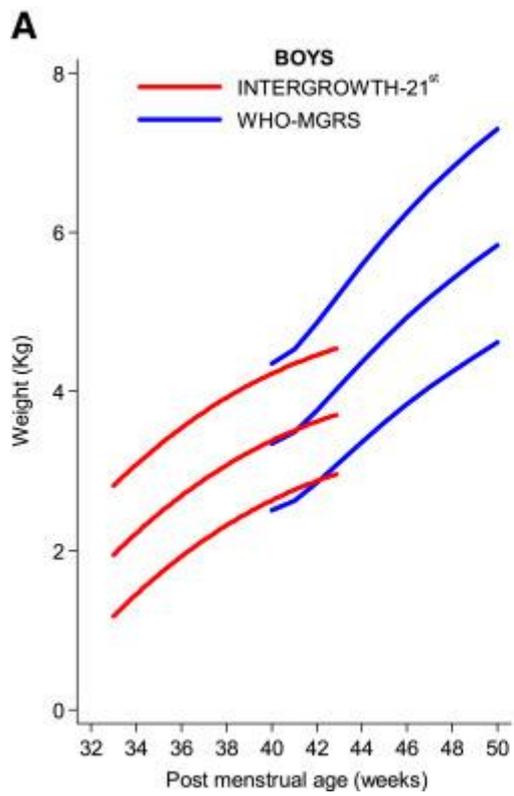


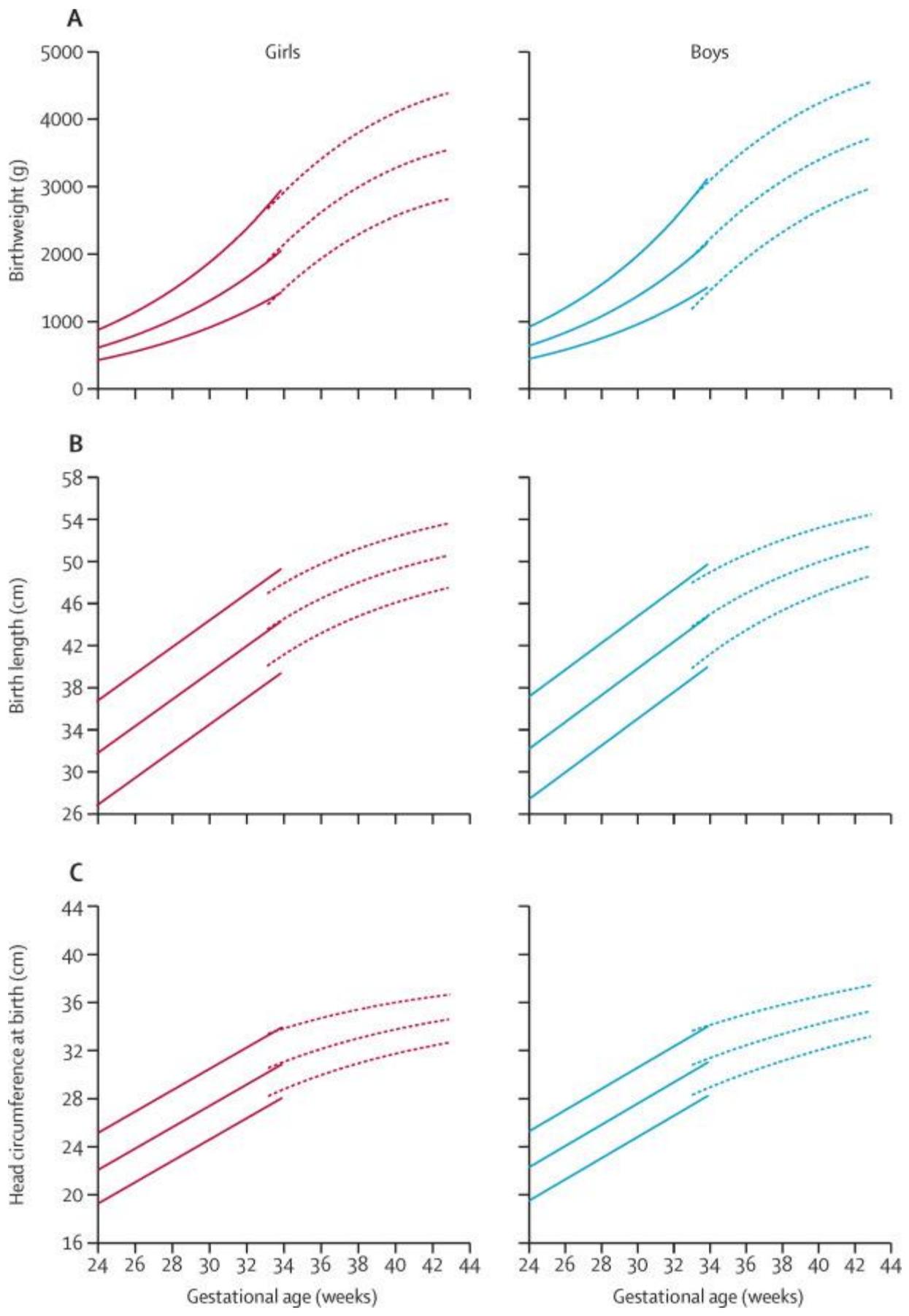
© University of Oxford

Ref: Villar J et al. Lancet 2014; 384: 857-868

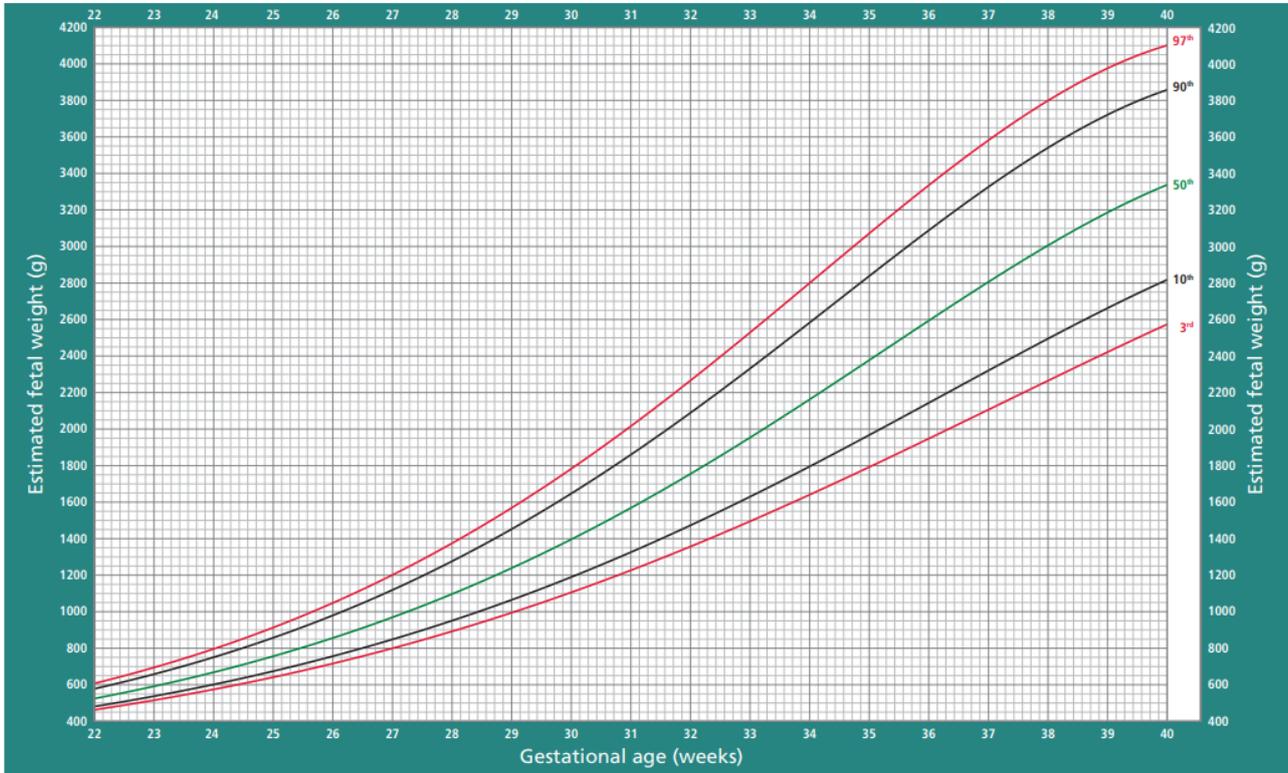
# International Standards for Size at Birth (Girls)







# International Fetal Growth Standards Estimated Fetal Weight



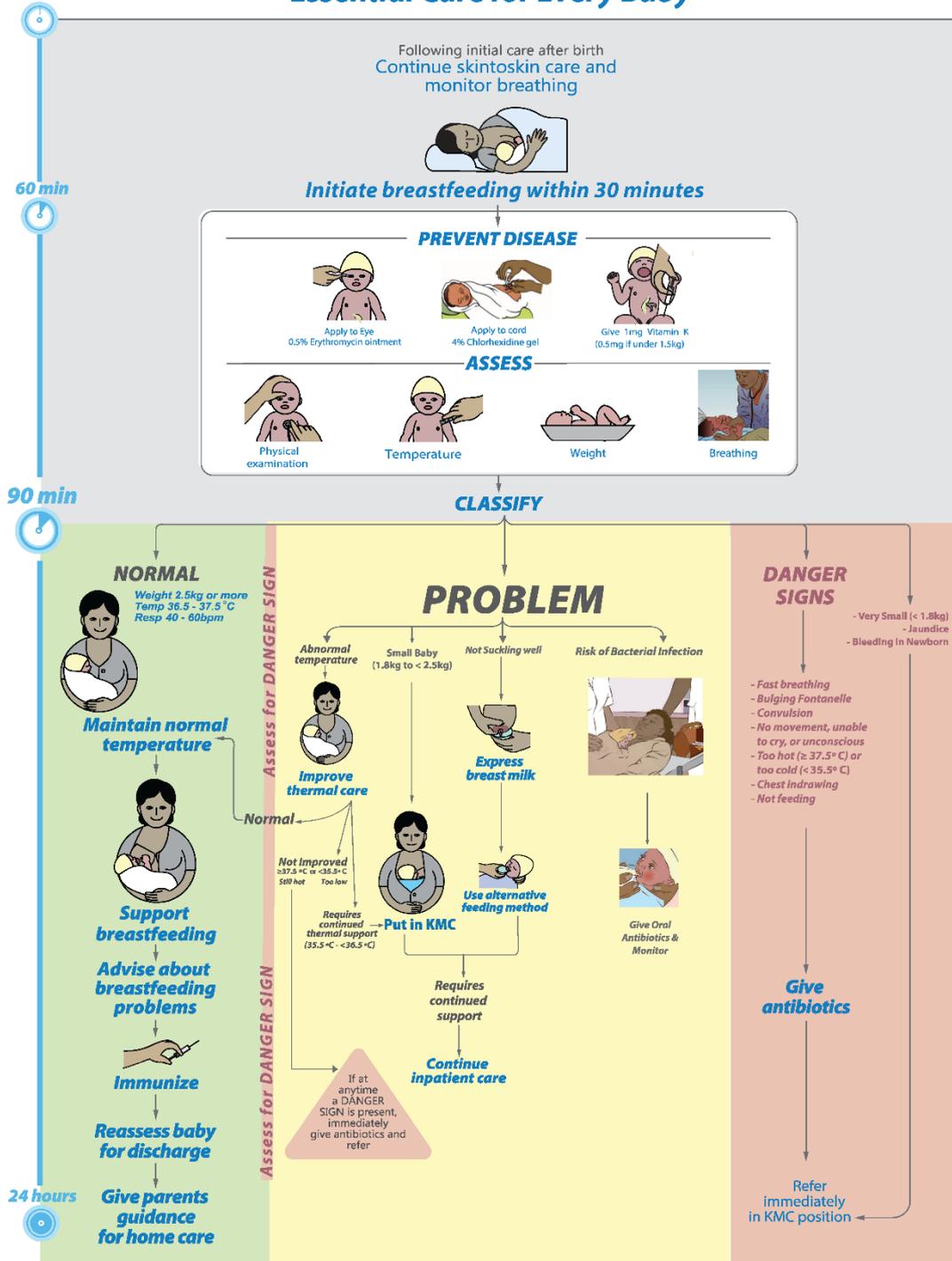
# APPENDIX IV: ECEB ACTION PLAN



FEDERAL MINISTRY OF HEALTH, NIGERIA

ACTION PLAN

## Essential Care for Every Baby



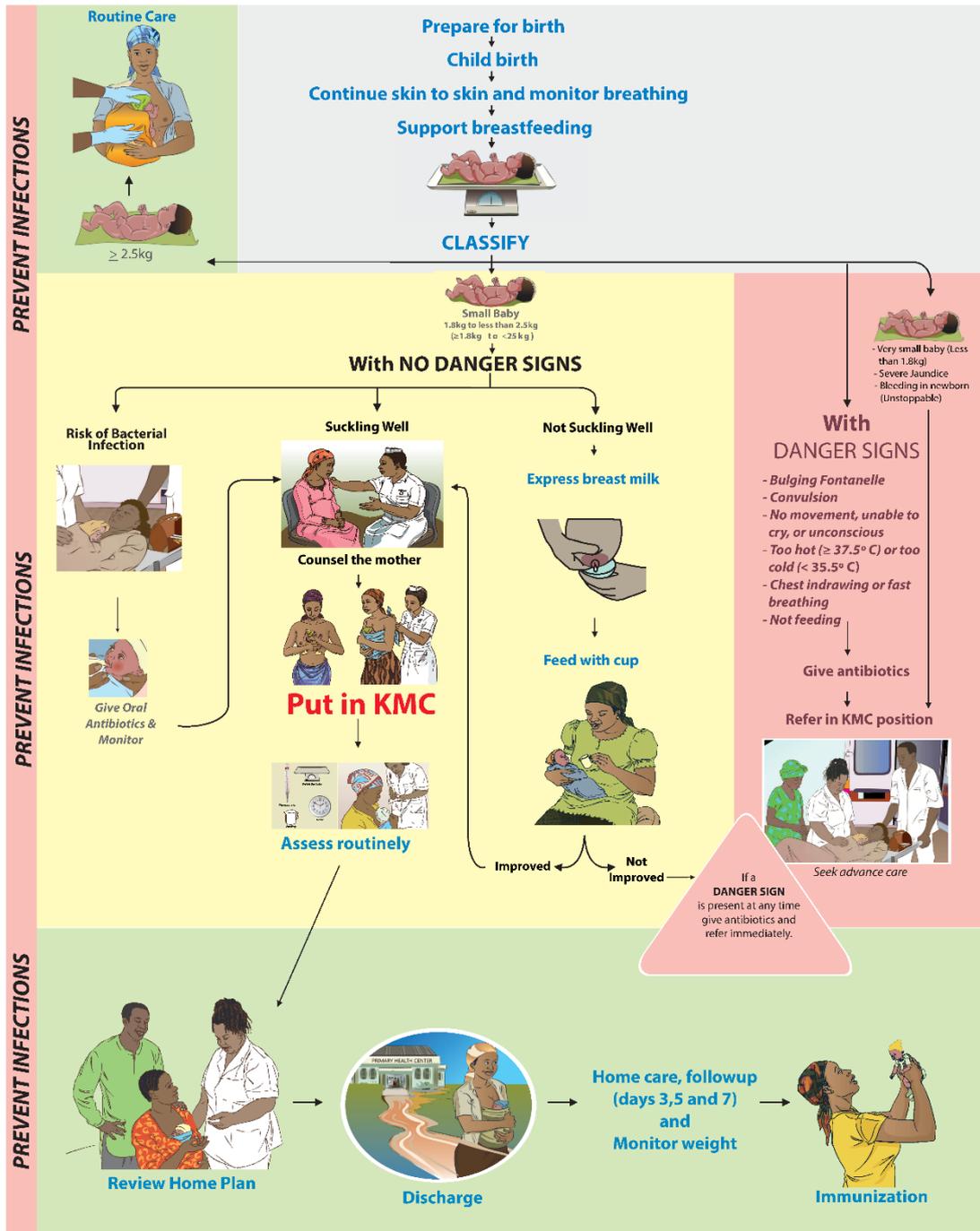
Adapted from: Helping Babies Survive American Academy of Pediatrics

# APPENDIX V: ECSB ACTION PLAN



## FEDERAL MINISTRY OF HEALTH, NIGERIA *Essential Care for Small Babies*

### ACTION PLAN



Adapted from: *Helping Babies Survive*  
 American Academy of Pediatrics

# APPENDIX VI: THE RECOMMENDED NATIONAL ESSENTIAL EQUIPMENT LIST FOR ALL LEVELS OF NEWBORN CARE IN NIGERIA.

LIST OF MEDICAL DEVICES FOR NEONATAL HEALTHCARE SERVICE

S/ N	CATEGORY OF SERVICE	PRIMARY		SECONDARY		TERTIARY	
		NAME OF EQUIPMENT	CONSUMABLES	NAME OF EQUIPMENT	CONSUMABLES	NAME OF EQUIPMENT	CONSUMABLES
1	INFECTION PREVENTION, CONTROL AND MANAGEMENT	<ul style="list-style-type: none"> <li>• Soap dispenser</li> <li>• Sanitizer dispensing unit</li> <li>• Disposable hand towel dispenser</li> <li>• Sterilizing unit</li> <li>• Dressing drums</li> <li>• Pedal Bins (for all waste categories)</li> </ul>	<ul style="list-style-type: none"> <li>• Liquid Soap</li> <li>• Sanitizer gel/liquids</li> <li>• Safety boxes (sharp containers)</li> <li>• Personal Protective Equipment (Face masks of different sizes, gloves etc)</li> <li>• Disposable paper towels/single use towels</li> <li>-Antiseptic solution (70-90% methylated spirit, Cetrimide, Chlorhexidine, Hibitane, povidone iodine )</li> <li>• Veronica bucket and</li> </ul>	<ul style="list-style-type: none"> <li>• Soap dispenser</li> <li>• Sanitizer dispenser</li> <li>• Disposable hand towel dispenser</li> <li>• Sterilizers</li> <li>• Dressing drums</li> <li>• Pedal bin (for all categories of waste)</li> </ul>	<ul style="list-style-type: none"> <li>• Soap</li> <li>• Sanitizers gels/ liquid</li> <li>• Safety boxes (sharp containers)</li> <li>• Personal Protective Equipment (Cap, Face masks of different sizes, gloves etc)</li> <li>• Disposable paper towels</li> <li>• Anitseptic solutions (Methylated spirit 70-90%, Cetrimide, Hibitane) Sodium Hypochlorite</li> </ul>	<ul style="list-style-type: none"> <li>• Soap dispenser</li> <li>• Sanitizer dispenser</li> <li>• Disposable hand towel dispenser</li> <li>• Sterilizers</li> <li>• Dressing drums</li> </ul>	<ul style="list-style-type: none"> <li>• Soap</li> <li>• Hand Sanitizers</li> <li>• Safety boxes (sharp containers)</li> <li>• Personal Protective Equipment (Face masks of different sizes, gloves etc)</li> <li>• Disposable paper towels</li> <li>• Antiseptic solutions (Methylated spirit 70-90%, Cetrimide, Hibitane) Sodium Hypochlorite</li> </ul>

			plastic receptacle				
2	NEONATAL RESUSCITATION AND RESPIRATORY MANAGEMENT DELIVERY – ROOM CARE	<ul style="list-style-type: none"> <li>• Neonatal resuscitaire ( with Overhead heater)</li> <li>• Bag mask valve devices (≥2) with 2 preterm and term babies face mask sizes</li> <li>• T-piece Resuscitator</li> <li>• Penguin suction, or single use Bulb syringe (sizes – 1, 2 ,5mls)</li> <li>• Baby Cots (Perspex)</li> <li>• <i>Radiant Warmers</i></li> <li>• Pulse oximeters</li> <li>• Neonatalie</li> <li>• Oxygen concentrators</li> <li>• Oxygen splitters</li> </ul>	<ul style="list-style-type: none"> <li>• Feeding tube, sizes 4, 5, 6, 8,10,12</li> <li>• Oxygen tube</li> <li>• Cord clamps</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Oxygen concentrators</i></li> <li>• Oxygen Cylinder with carrier, gauge &amp; Flow meter</li> <li>• <i>Suction Machine (Manual &amp; Electric)</i></li> <li>• Neonatal Resuscitaire ( with Overhead warmer and Clock timer)</li> <li>• Transport Incubator</li> <li>• <i>Continuous Positive Airway Pressure machines (CPAP)- Bubble CPAP</i></li> <li>• High flow nasal cannula</li> <li>• Endo Tracheal Tubes, introducers</li> <li>• <i>Radiant Warmers</i></li> <li>• <i>Pulse Oximeters</i></li> <li>• Sussex Resuscitator Kits</li> <li>• Apnoea Monitors</li> <li>• Multiparameter Monitors</li> <li>• Stethoscope – Neonatal</li> <li>• Bag mask Valve devices</li> <li>• Laryngoscope with 2 straight bladed of sizes 0 and 1 (with spare batteries and bulbs)</li> <li>• Head Box/ DDA Box</li> <li>• Neonatal Ventilator (For specialist centres)</li> <li>• Y connector</li> <li>• Humidifier</li> <li>• Defibrillator</li> </ul>	<ul style="list-style-type: none"> <li>• Neonatal Air Ways (Size 0, 00 and 000)</li> <li>• Oxygen Splitter</li> <li>• Endo Tracheal Tubes (sizes 2.0, 2.5, 3.0 and 3.5mm)</li> <li>• Bulb Syringe (Sizes 1, 2, 5mls)</li> <li>• Towels</li> <li>• Blankets</li> <li>• Nasal prongs of various sizes</li> <li>• Facial masks of different sizes</li> <li>• Penguin suction</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Oxygen concentrator</i></li> <li>• Oxygen Cylinder with carrier, gauge &amp; Flow meter</li> <li>• <i>Suction Machine (Manual &amp; Electric)</i></li> <li>• Neonatal Resuscitaire ( with Overhead Warmer, Piped Oxygen, Manometer and Clock timer )</li> <li>• Transport Incubator</li> <li>• T-piece resuscitator (Neopuff)</li> <li>• <i>Continuous Positive Airway Pressure machines (CPAP)</i></li> <li>• <i>Radiant Warmers</i></li> <li>• <i>Pulse Oximeter</i></li> <li>• Sussex Resuscitator Kits (Pre-term, Infant and child sizes of face mask)</li> <li>• Apnoea Monitors</li> <li>• Multi parameter Monitors</li> <li>• Stethoscope – Neonatal</li> <li>• Bag and mask device</li> <li>• Laryngoscope with blades of appropriate size</li> <li>• Head Box</li> <li>• Neonatal Ventilator</li> <li>• Arterial Blood Gas Analyser</li> <li>• Y connector</li> <li>• Humidifier</li> <li>• Defibrillator</li> </ul>	<ul style="list-style-type: none"> <li>• Neonatal Air Ways</li> <li>• Endo Tracheal Tubes (sizes 2.0, 2.5, 3.0 and 3.5mm)</li> <li>• Introducers</li> <li>• Penguin Suction Bulb Syringe (Sizes 1, 2, 5mls)</li> <li>• Towels</li> <li>• Blankets</li> <li>• Nasal prongs of various sizes</li> <li>• Facial masks of different sizes</li> </ul>

3	JAUNDICE AND MANAGEMENT OF OTHER COMPLICATIONS	<ul style="list-style-type: none"> <li>• Transcutaneous bilirubinometer</li> <li>• Icterometer</li> <li>• Bili sticks</li> <li>• Point of care Bilirubinometer</li> </ul>	<ul style="list-style-type: none"> <li>• Swab sticks</li> <li>• Lancets</li> <li>• Capillary tube</li> <li>• Blood Sample containers</li> </ul>	<ul style="list-style-type: none"> <li>• Bilirubinometer</li> <li>• Transcutaneous bilirubin meter</li> <li>• <i>Phototherapy Machine best with LED/blue phototherapy lamps</i></li> <li>• Irradiance meter</li> <li>• Exchange Blood Transfusion Kit</li> <li>• 3 way taps</li> <li>• Crucifix/ restraint</li> <li>• Point of care bilirubin estimator</li> <li>• Bili blanket</li> </ul>	Eye mask	<ul style="list-style-type: none"> <li>• Newborn Screening Variant (NBS) Machine</li> <li>• Bilirubinometer</li> <li>• <i>Phototherapy Machine best with LED/blue phototherapy lamps</i></li> <li>• Irradiance meter</li> <li>• Exchange Blood Transfusion Kit</li> <li>• 3 way taps</li> <li>• Crucifix</li> <li>• Bili blanket</li> </ul>	<ul style="list-style-type: none"> <li>• Eye mask</li> </ul>
4	NEONATAL NUTRITION	<ul style="list-style-type: none"> <li>• Nasogastric tube (Sizes -5, 6, 8 and 10)</li> <li>• Infantometer with weighing scale (5kg)</li> <li>• Infant weighing scale</li> </ul>	<ul style="list-style-type: none"> <li>• Feeding Utensils</li> <li>• Nifty cup</li> <li>• Feeding Cups</li> <li>• Storage cups with cover</li> </ul>	<ul style="list-style-type: none"> <li>• Breast pumps</li> <li>• Refrigerator (Dedicated to breast milk storage)</li> <li>• Nasogastric tubes (Sizes 5, 6, 8 and 10)</li> <li>• Beam Type Weighing Scale</li> <li>• Digital Type Weighing Scale</li> <li>• Infantometer</li> <li>• Syringe pumps and drivers</li> <li>• Infusion pumps</li> </ul>	<ul style="list-style-type: none"> <li>• Feeding utensils</li> <li>• Cups</li> <li>• Nifty cups</li> <li>• Intravenous fluid and giving set</li> <li>• Soluset</li> <li>• IVF regulator</li> <li>• Feeding tube</li> <li>• IV Cannula</li> <li>• UVC/A Catheters</li> <li>• PICC catheters</li> <li>• Amino acid infusion</li> </ul>	<ul style="list-style-type: none"> <li>• Breast pumps</li> <li>• Human breast milk bank support (autoclave, freezer and fridge)</li> <li>• Breast milk fridge</li> <li>• Nasogastric tubes</li> <li>• Beam Type Weighing Scale</li> <li>• Digital Type Weighing Scale</li> <li>• Infantometer</li> <li>• Sterilizing tank for EBM containers</li> </ul>	<ul style="list-style-type: none"> <li>• Feeding utensils</li> <li>• Cups for EBM</li> <li>• Nifty cups</li> <li>• Cups for feeding</li> <li>• Cup with cover for milk storage</li> <li>• Amino acid infusion</li> </ul>
5	CARE OF PRETERM	<ul style="list-style-type: none"> <li>• Portable Transport incubator/Supportive care of the preterm (KMC Unit/ bay,corner)</li> </ul>	<ul style="list-style-type: none"> <li>• Disposable incubator linen</li> <li>• KMC wraps,Chairs,wrapper etc refer to KMC</li> </ul>	<ul style="list-style-type: none"> <li>• Low Reading Thermometer</li> <li>• Neonatal Incubators</li> <li>• Baby Cots (Perspex)</li> <li>• KMC unit,bay,</li> </ul>	<ul style="list-style-type: none"> <li>• CPAP Accessories</li> <li>• ref Kmc guideline</li> </ul>	<ul style="list-style-type: none"> <li>• Low Reading Thermometer</li> <li>• Neonatal Incubators</li> <li>• KMC unit,bay, corner</li> </ul>	<ul style="list-style-type: none"> <li>• CPAP Accessories</li> <li>• Plastic resealable bags(zipper storage bags) /wrap</li> <li>• Refer to KMC guidelines</li> </ul>

			operational guidelines				
6	OTHER ESSENTIAL EQUIPMENT	<ul style="list-style-type: none"> <li>Oxygen cylinder with carrier, gauge and flow meter</li> <li>Glucometer with test strips</li> <li>Suction machine</li> <li>Pediatric cot and mattresses</li> <li>Solar based Sterilizers</li> <li>Paediatric sphygmomanometer with neonatal cuffs (Digital Automatic BP monitor)</li> <li>Room thermometer (digital and manual)</li> <li>Neonatal stethoscope</li> <li>Gallipots</li> <li>Kidney dishes</li> <li>Chart holders</li> <li>Electric kettle</li> <li>Dressing Instruments</li> <li>Sterilizing drums</li> <li>Color TV set</li> <li>Toys</li> <li>Drip stand</li> <li>Trolleys</li> <li>Mosquito nets (LLIN)</li> <li>Medication trolleys</li> <li>Automatic/Electric/Battery lamps</li> </ul>	<ul style="list-style-type: none"> <li>Neonatal Register</li> <li>Identification Tags</li> <li>Measuring Tapes</li> <li>Aprons</li> <li>Disposable Latex Gloves</li> <li>Face masks (Pre-term, Infant and Child sizes)</li> <li>Suction Catheters (Size 5, 6, 8,10)</li> <li>Needles and Syringes (Sizes 1, 2 5 and 10mls)</li> <li>Cannular (21G, 23G)</li> <li>Capillary tubes</li> <li>Giving Sets</li> <li>Test kits</li> <li>Reagents</li> <li>Glass Slides and cover slips</li> <li>Laboratory Glasswares</li> </ul>	<ul style="list-style-type: none"> <li>Paediatric Cots &amp; Mattress</li> <li>Electronic BP monitors</li> <li>Paediatric Sphygmomanometers with neonatal cuffs</li> <li>Clinical Thermometer (Digital &amp; Manual)</li> <li>Multi-parameter Monitors</li> <li>Pulse oximeters</li> <li>Infusion Pumps</li> <li>Infusion/ Syringe pumps</li> <li>Portable ECG (single or triple channel) machine</li> <li>Portable EEG with provisions for auditory evoked brain stem measurement</li> <li>Ultrasound Machine with appropriate probes</li> <li>Ultrasonic cleaners</li> <li>Sonic aid</li> <li>Mobile X-Ray Machine</li> <li>X-Ray Light Viewer</li> <li>Mobile Echo Cardiography Machine</li> <li>Angle Poised Lamps</li> <li>Nebulizer</li> <li>Blood giving set/Hemaset/Pediatric Blood bags</li> <li>Refrigerator</li> <li>Electric Kettle</li> <li>Dressing Instruments</li> <li>Galli pots</li> </ul>	<ul style="list-style-type: none"> <li>Neonatal Registers</li> <li>Identification Tags</li> <li>Micro Solusets</li> <li>Boots &amp; Slippers</li> <li>Measuring Tapes</li> <li>Aprons</li> <li>Foley's catheter</li> <li>French feeding tubes</li> <li>Umbilical catheters</li> <li>Blood giving set</li> <li>Blood bags- 50,100,200ml</li> <li>IV Giving set</li> <li>Cut-down sets</li> <li>Cannulas (23G)</li> <li>Syringes</li> <li>Plaster (3M,zinc oxide)</li> <li>Cord clamps</li> <li>Specimen bottles</li> <li>Petri dish</li> <li>Antibiotics sensitivity disc</li> <li>Swab sticks</li> </ul>	<ul style="list-style-type: none"> <li>Paediatric Cots &amp; Mattress</li> <li>Baby Crib</li> <li>Cot sheet /linen</li> <li>Mosquito nets</li> <li>Electronic BP monitors</li> <li>Paediatric Sphygmomanometers with neonatal cuffs.</li> <li>Clinical Thermometer (Digital &amp; Manual)</li> <li>Multi-parameter Monitors</li> <li>Infusion Pump</li> <li>Infusion Syringe pumps</li> <li>Portable ECG (single or triple channel) machine</li> <li>Portable EEG with provisions for auditory evoked brain stem measurement.</li> <li>Ultrasound Machine with appropriate probes</li> <li>Ultrasonic cleaners</li> <li>Sonic aid oximeters</li> <li>Mobile X-Ray Machine</li> <li>X-Ray Light Viewer</li> <li>Mobile Echo Cardiography Machine</li> <li>Angle Poised Lamps</li> <li>Nebulizer</li> <li>Haematocrit reader</li> <li>Haematocrit Centrifuge</li> <li>Blood giving set/Hemaset/Pediatric and Neonatal Blood bags</li> <li>Refrigerator</li> <li>Electric Kettle</li> <li>Dressing Instruments</li> <li>Galli pots</li> <li>Kidney dishes</li> </ul>	<ul style="list-style-type: none"> <li>Micro Solusets</li> <li>Neonatal Registers</li> <li>Identification Tags</li> <li>Boots &amp; Slippers</li> <li>Measuring Tapes</li> <li>Aprons</li> <li>Foley's catheter</li> <li>French feeding tubes</li> <li>Umbilical catheters</li> <li>Blood giving set (50,100,150,20 Omls)</li> <li>IV Giving set</li> <li>Cut down Set</li> <li>Cannulas (21, 23G)</li> <li>Syringes</li> <li>Plaster</li> <li>Adhesive tapes</li> <li>Cord clamps</li> <li>Bio-hazard waste bags</li> <li>Specimen bottles (1,2,5ml)</li> <li>Petri dish</li> <li>Antibiotics sensitivity disc</li> <li>Swab sticks</li> </ul>

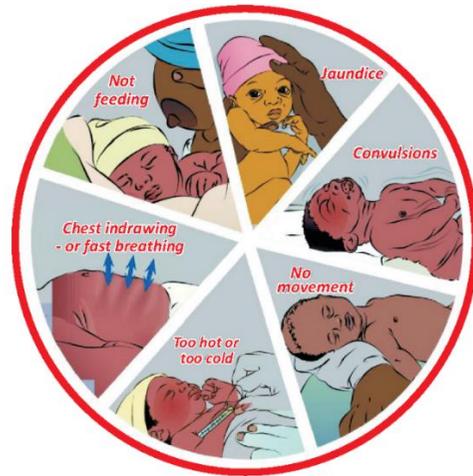
	<ul style="list-style-type: none"> <li>• Solar rechargeable lamps</li> <li>• Dressing drums</li> <li>• Pediatric nasal prongs</li> <li>• Low reading thermometer</li> <li>• Refrigerator (electrical, solar)</li> <li>• Weighing scale (analog and digital)</li> <li>• Room heaters</li> <li>• Diagnostic sets</li> <li>• Cot sheet/ linen</li> <li>• Vital signs monitor</li> <li>• Sonic Aid</li> <li>• Digital Baby/Toddler scale</li> <li>• Autoclaves</li> <li>• Angle poised lamps</li> <li>• Pulse oximeters</li> <li>• Cord clamps/ligatures/cord pack</li> <li>• Vaccine carrier/Cold box</li> <li>• Kerosene stove</li> <li>• Solar Power Pack</li> <li>• Haematocrit Centrifuge and reader</li> <li>• Haemoglobinometer</li> <li>• Centrifuge</li> <li>• Electrical binocular Microscopy</li> <li>• Hot air Oven / plate</li> </ul>	<ul style="list-style-type: none"> <li>• Sample Tubes</li> <li>• Urinary Dipsticks</li> <li>• Capillary tubes</li> <li>• Needle and Lancets</li> <li>• Tourniquet</li> <li>• Filter paper</li> <li>• DBS Cards</li> <li>• Liquid soap and disinfectant</li> <li>• Pasteur pipette / single auto pipette</li> <li>• Swab sticks Lancets</li> </ul>	<ul style="list-style-type: none"> <li>• Kidney dishes</li> <li>• Autoclave</li> <li>• Drip Stand</li> <li>• Trolleys</li> <li>• Medication Trolleys</li> <li>• Room Heaters</li> <li>• Automatic Electric/ Battery Lamp/ Rechargeable lamps</li> <li>• Chart Holders</li> <li>• Sterilizing units</li> <li>• Placenta dish</li> <li>• Glucometer with Test Strips</li> <li>• Colour TV set</li> <li>• Toys</li> <li>• Room thermometers</li> <li>• Diagnostic sets</li> <li>• Lumber puncture set</li> <li>• Vital signs monitor</li> <li>• Apnoea Alarm mattresses</li> <li>• Vaccine Carriers/Cold box</li> <li>• Binocular Microscope with slides</li> <li>• Chemistry Analyser</li> <li>• Haematology Analyser</li> <li>• Microbiological Analyser</li> <li>• Microbiological Incubators</li> <li>• Haematocrit Centrifuge / reader</li> <li>• Refrigerator -20° Freezer</li> <li>• Blood bank</li> <li>• Water bath</li> <li>• Hot air oven</li> </ul>	<ul style="list-style-type: none"> <li>• Stains and Reagents</li> <li>• DBS cards and test kits</li> <li>• Blood Culture bottles</li> <li>• Glass wares</li> <li>• Microplates</li> <li>• Pipette tips</li> <li>• ESR stand and tubes</li> <li>• Vacutainers</li> <li>• Sample tubes</li> <li>• Cot sheet /linen</li> <li>• Mosquito net</li> </ul>	<ul style="list-style-type: none"> <li>• Autoclave</li> <li>• Drip Stand</li> <li>• Trolleys</li> <li>• Medication Trolleys</li> <li>• Room Heaters</li> <li>• Automatic Electric/ Battery Lamp/ Rechargeable lamps</li> <li>• Chart Holders</li> <li>• Sterilizing units</li> <li>• Placenta dish</li> <li>• Stoves</li> <li>• Glucometer with Test Strips -</li> <li>• Colour TV set</li> <li>• Toys</li> <li>• Blood warming device</li> <li>• Room thermometers</li> <li>• Diagnostic sets</li> <li>• Lumber puncture set</li> <li>• Vital signs monitor</li> <li>• Apnoea Alarm mattresses</li> <li>• Vaccine Carriers/Cold box</li> <li>• Needle destroyer</li> <li>• Bio-Hazard waste bins</li> <li>• Binocular Microscope with slides</li> <li>• Chemistry Analyser</li> <li>• Haematology Analyser</li> <li>• Microbiological Incubators</li> <li>• Haematocrit Centrifuge / reader</li> <li>• Refrigerator -20° Freezer</li> <li>• Blood bank</li> <li>• Water bath</li> <li>• Hot air oven</li> <li>• Flow cytometry Machines</li> <li>• Spectrophotometer</li> <li>• Colorimeter</li> <li>• ELISA machine / EQUIPMENT SET</li> <li>• Autoclaves</li> <li>• Test tubes racks</li> <li>• Bunsen Burner</li> </ul>	<ul style="list-style-type: none"> <li>• Stains and Reagents</li> <li>• DBS cards and test kits</li> <li>• Blood Culture bottles</li> <li>• Glass wares</li> <li>• Surfactant Point-of-care (ISTAT) cartridge</li> </ul>
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		<ul style="list-style-type: none"> <li>• Autoclave</li> <li>• Incubators at 80</li> <li>• Water bath</li> <li>• Staining rack</li> <li>• Bunsen burner</li> <li>• Refrigerator (2- 8/ - 20 ) /Cold Box</li> <li>• Thermometers (room, refrigerator, incubators)</li> <li>Ambulance</li> </ul>		<ul style="list-style-type: none"> <li>• Flow cytometry Machines</li> <li>• Spectrophotometer</li> <li>• Colorimeter</li> <li>• ELISA machine / EQUIPMENT SET</li> <li>• Autoclaves</li> <li>• Test tubes racks</li> <li>• Bunsen Burner</li> <li>• Auto- pipettes (single and multi channels)</li> <li>• Staining Racks</li> <li>• Slide standing racks and slide boxes</li> <li>• Bio-safety Cabinet (depending on class: 2 or enhanced 2 or 3)</li> <li>• Ceramic Sinks and Marble benchtop</li> <li>• Water distiller or deionizer</li> <li>• PCR suites</li> <li>• Electrical Binocular Microscopy</li> <li>• Fluorescence Microscopy (LED)</li> <li>• Refrigerated Centrifuge</li> <li>• Incubator CO2</li> <li>• Water bath</li> <li>• Electronic Balance</li> <li>• Thermometers (Room, Refrigerator, Freezer, Incubators)</li> <li>Vein finder</li> </ul>		<ul style="list-style-type: none"> <li>• Auto- pipettes (single and multi-channels)</li> <li>• Staining Racks</li> <li>• Slide standing racks and slide boxes</li> <li>• Bio-safety Cabinet (depending on class: 2 or enhanced 2 or 3)</li> <li>• Ceramic Sinks and Marble benchtop</li> <li>• Water distiller or deionizer</li> <li>• PCR suites</li> <li>• Electrical Binocular Microscopy</li> <li>• Fluorescence Microscopy (LED)</li> <li>• Refrigerated Centrifuge</li> <li>• Incubator CO2</li> <li>• Waterbath</li> <li>• Electronic Weighing Balance</li> <li>• Thermometers (Room, Refrigerator, Freezer, Incubators)</li> <li>• Bio-safety Cabinet</li> <li>• Ceramic Sinks and Marble benchtops</li> <li>Point-of-care blood gas analyser- (ISTAT)</li> </ul>	
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# APPENDIX VII: NATIONAL PICTORIAL NEWBORN DISCHARGE GUIDE INFORMATION LEAFLET FOR BASIC INSTRUCTIONS

## Danger Signs

**Seek Health Care Immediately!**



**Five things to do for baby:** wash hands, feed only breast milk, apply chlorhexidine 4% gel to cord, give immunizations and go within 3 - 5 days after birth to the health center for jaundice check and general check up.

## NEWBORN DISCHARGE GUIDE

Help your baby survive



### NOTES

Baby's name \_\_\_\_\_  
 Date of birth \_\_\_\_\_  
 Sex \_\_\_\_\_  
 Birth weight \_\_\_\_\_  
 Health facility \_\_\_\_\_  
 Health worker contact \_\_\_\_\_  
 Date of next appointment \_\_\_\_\_  
 Other notes \_\_\_\_\_

### OBSERVATIONS & ADVICE

*Adapted from the American Academy of Pediatrics*

*Sponsored by the Nigerian Society of Neonatal Medicine  
 Supported by Healthcare Trends  
 June 2016*



FEDERAL MINISTRY OF HEALTH



Help My Pikin

# ESSENTIAL CARE

Feed only breast milk starting within 30 minutes of birth



Position baby well



Good attachment

Poor attachment

For a small baby, put skin to skin with mother to keep warm (Kangaroo Mother Care)

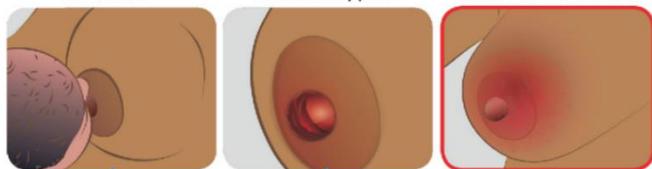


Manage common breast problems

Full breast

Cracked nipples

Tender and red breast



Seek advice

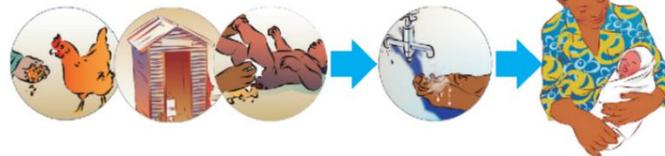
Seek health care urgently



## TO PREVENT INFECTIONS

Afer handling

wash hands



Apply ONLY 4% Chlorhexidine gel to cord daily

1. Wash hands



2. Open tube



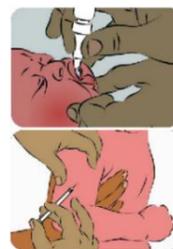
3. Apply gel to base



4. Spread all round stump



## HAVE YOUR BABY IMMUNIZED



Age	Vaccine
Birth	BCG/OPV/HepB 0
6 Weeks	OPV1/PCV1/Rota1/Penta1 (HIB/DPT/HepB)
10 Weeks	OPV2/PCV2/Rota2/Penta2 (HIB/DPT/HepB)
14 Weeks	OPV3/PCV3/IPV/Penta3 (HIB/DPT/HepB)
6 Months	Vit A 1st dose
9 Months	Measles/Yellow Fever
12 Months	Vit A 2nd dose

# LIST OF RESOURCE MATERIALS

1. Federal Ministry of Health. Nigeria Every Newborn Action Plan: A plan to end preventable newborn deaths in Nigeria. Abuja: Federal Ministry of Health; 2016.
2. National Primary Health Care Development Agency. Preparedness and Response to Coronavirus Disease 2019 (COVID – 19) at Primary Health Care Level: Training Manual for Primary Health Care Workers NPHCA 2020.
3. Our Lady’s Children Hospital Crumlin. Guidelines on the Administration of Intramuscular and Subcutaneous Injection. AISCI – 02 – 2017 –NB-V3.
4. Brigham and Women’s Hospital. Newborn Infection Control and Prevention Guidelines. BWH 2016.
5. Federal Ministry of Health. Essential Newborn Care Course Modules (Provider Guide) FMOH 2019.:
  - i. Module One: Provider Guide for Full ENCC
  - ii. Module Two: Helping Babies Breathe
  - iii. Module Three: Essential Care for Every Baby
  - iv. Module Four: Essential Care for Small Babies
6. Federal Ministry of Health. Kangaroo Mother Care (KMC) Operational Guidelines (Draft copy). FMOH August 2018.
7. USAID –Maternal and Child Survival Program. Management of the Sick Newborn: Secondary Health Facilities in Kogi and Ebonyi States. Reference and Trainer’s Manual. April 2018.
8. Federal Ministry of Health. National Guidelines Newborn Care for Referral Levels (Draft Copy). FMOH Oct 2020.

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# NATIONAL GUIDELINE FOR BASIC NEWBORN CARE



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of Health

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