HOME BASED KANGAROO MOTHER CARE:

MANUAL FOR IMPLEMENTATION AT PRIMARY HEALTH CARE LEVEL

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List of Contributors:
Principal Author
Prof. Shashi N Vani, M.D., D. Ped., FIAP, FNNF
Managing Trustee KMC Foundation, India,
Emeritus Professor of Paediatrics including Neonatology,
P S Medical College, Karamsad, Gujarat.

ADVISORY GROUP
Government of Maharashtra
1. Dr. Pradeep Vyas, IAS, Additional Chief Secretary
2. Ramaswami N., IAS, Commissioner, Health Services and MD NHM
3. Dr. Archana Patil, Director of Health Services
4. Dr. Ramchandra Hankare, DD RCH
5. Dr. Ashish Bharati, Assistant Director, Department of Public Health

UNICEF
1. Smt. Rajeshwari Chandrashekhar, Chief of the Field Office, UNICEF, Mumbai
2. Dr. Khanindra Bhuyan, Health Specialist
3. Dr. Mangesh Gadhari, Health officer
4. Dr. Prashant Hingankar, Consultant

Expert Reviewers
1. Prof. Simin Irani, MD, FNNF, Retd. Professor and HOD of Neonatology, Seth GS Medical College, K E M Hospital Mumbai and Somaiya Medical College, Mumbai
2. Prof. Nikhil Kharod, MD, Joint Secretary KMC Foundation, Retd. Prof. and HOD Paediatrics, P S M C, and CEO, Tribhuvan Foundation, Anand, Gujarat
3. Prof. Rekha Udani, MD, Retd. Professor and HOD of Neonatology, K E M Hospital Mumbai and B Y Patil Hospital, Navi Mumbai
4. Prof. L S Deshmukh, MD, DM (Neonatology), Prof and HOD of Medical College, Aurangabad
5. Prof. Ruchi Nanavati, MD, Prof and HOD, Neonatology, K E M Hospital Mumbai
6. Prof. Sushma Malik, MD, Prof and HOD, Neonatology, Nair Hospital, Mumbai, Members of KMC Foundation, India
7. Dr. Parag Dagli, MD, Trustee KMCF, India, Neonatal and Pediatric intensivist, Director Apple Children Hospital, Ahmedabad
8. Dr. Jatin Mistri, MD, MRCPCH (UK) , CCST (Neonatal medicine,) UK, Trustee KMCF , India
9. Dr. Ravi Parikh, MD, D Ped, MRCPCH (UK), CCST (Neonatal Medicine) UK, Trustee, KMCF, India

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Dr.Pradeep Vyas, I.A.S.,
Additional Chief Secretary

GOVERNMENT OF MAHARASHTRA

Public Health Department
10th Floor, GT Hospitals Complex Building
New Mantralaya, Mumbai 400104
Phone: 022-22617388 / 22617999
E mail: psec.pubhealth@maharashtra.gov.in

MESSAGE

I am happy to know that the Department of Public Health, Government of Maharashtra, UNICEF and KMC Foundation have partnered to roll out the first ever Home Based Kangaroo Mother Care (HBKMC) initiative in 78 tribal blocks in the state. In that context, this detailed manual has been prepared under the guidance of Prof. Shashi Vani of KMC Foundation of India.

Low birth weight prevalence in Maharashtra is high and 19.5% of the babies are born every year with weight less than 2.5 Kg. These low birth weight babies are at high risk of death, malnutrition, and poor cognitive development. Kangaroo Mother Care reduces risk of death by 40%; promotes weight and length gain; reduces infection in newborn by 65%; reduces hypothermia by 72%. KMC is also a low cost intervention, which promotes brain development. Further, KMC improves the learning ability of the child, promotes bonding and emotional stability and reduces stress, behavioral problems and learning disabilities in the childhood.

The benefits of kangaroo care for mother includes improving bonding between mother and the baby; increasing the breast milk supply, reduces stress and improves self-confidence.

I am sure, rapid scale up of the HBKMC will go a long way in reducing the child mortality and malnutrition in the state. Further HBKMC will promote early childhood development in a major way in the state.

Dr. Pradeep Vyas, IAS,
Additional Chief Secretary

Dr. Ramaswami. N, IAS,
Commissioner Health Services,
MD (NHM) GOM

National Health Mission
8th Floor, Arogya Bhavan,
St. George's Hospital Compound,
P. D. Mello Road,
Mumbai 400 001.

MESSAGE

Kangaroo Mother Care (KMC) is an evidence based, simple, cost-effective way of caring for low birth weight infants and has already been promoted at various levels of public health facilities in the state of Maharashtra. Considering the importance of this intervention, having guidelines for practicing KMC at home is the need of hour particularly in tribal areas where prevalence of low birth weight is high.

This manual gives a clear guidance to service providers especially frontline health workers on how home based KMC can be implemented for caring of low birth weight newborn at the village level. Many tips for care of the new born babies by the mothers / ASHAs / ANMs at the village level are highlighted, which will be very useful.

I hope that this manual will also be used by programme managers for supervision during field level visits and will help in reducing child mortality and malnutrition in the tribal areas of the state.

I appreciate the support of KMC Foundation of India and UNICEF in formulating this manual for health workers.

Dr. Archana Patil
MD, PhD

Director Health Services Pune
Government of Maharashtra,
First Floor, Central Building
Near Pune Railway Station
Pune 411 001

FOREWORD

The Public Health Department is happy to partner with UNICEF and KMC Foundation of India for the roll out the first ever Home-Based Kangaroo Mother Care (HBKMC) initiative in 78 tribal blocks in the state. This detailed manual, prepared by the national experts on Neonatology, under the guidance of Prof. Shashi Vani will go a long way for capacity building of the health care providers in Maharashtra for imparting skills on Kangaroo Mother Care and breast feeding in the low birth weight babies.

The prevalence of anemia and low weight and low body mass index of women planning their pregnancy is very high, especially in the tribal areas. In effect, low birth weight prevalence as well as undernutrition in children below five years in the tribal areas is quite high and these are important causes in child mortality in the tribal areas of Maharashtra. The low birth weight babies are at high risk of death, poor cognitive development, poor learning during the childhood which ultimately result in low early potential in adult life.

The Government of Maharashtra has implemented several initiatives for reducing the malnutrition in the tribal areas of the state. This includes implementation of the Tribal Sub Plan, Maharashtra Human Development Programme, implementation of different activities in the tribal areas in the National Health Mission of the government.

Kangaroo Mother Care reduces risk of death in children, promotes weight and length gain; promotes brain development, improves learning ability, and reduces behavioral problems even after twenty years. There is good evidence that the effects of KMC at 1 year on the intelligence quotient were still present after twenty years.

I thank the KMC Foundation of India and UNICEF for partnering with the Department of Public Health for rolling out the Home Based KMC in the state of Maharashtra.

Dr. Archana Patil, MD, PhD

Rajeshwari Chandrasekar,
Chief of the Field Office

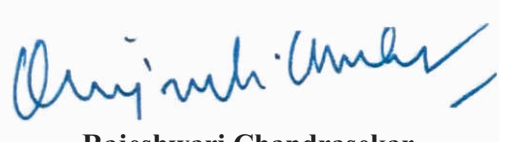
United Nations Children's Fund
UNICEF Office for Maharashtra-
B wing, 4th Floor, 215, Atrium,
Behind Courtayrd Marriott Hotel,
Andheri Kurla Road, Chakala,
Andheri (East), Mumbai - 400 093,
Maharashtra, India.

PREFACE

Promoting maternal and newborn health and routine immunization are two important priorities for UNICEF. Even though Maharashtra has made great progress in reducing the maternal and newborn death rates, the progress is uneven. Tribal, urban slum and rural populations are the most disadvantaged groups, in these population groups, neonatal mortality is higher than the state averages, therefore different Reproductive Maternal Neonatal Child Health and Adolescent interventions need to be prioritized. There is evidence to show that in some of the tribal areas as well as urban slums, the neonatal mortality rates are higher than the state average. Government officials are held accountable by activists for the higher levels of malnutrition among women and children of the tribal blocks. I am happy that partnership between UNICEF, KMC Foundation of India and Public Health Department catalyzed the roll out the first ever Home Based Kangaroo Mother Care (HBKMC) programme in 78 tribal blocks in the state since 2019, reaching thousands of low birth weight babies.

This manual, authored by Prof. Shashi Vani, who first started in the Kangaroo Mother Care ward in India way back in 1993 at the neonatology division of the Civil Hospital and B.J. Medical College, Ahmedabad, will go a long way in improving skills of frontline functionaries and mothers on Kangaroo Mother Care and breast feeding among the low birth weight babies. It is an opportune moment for promoting home based KMC, which is an effective, simple and affordable intervention for improving survival, growth and development of low birth weight babies.

On behalf of UNICEF, I assure the highest commitment for the realization of the rights of the most disadvantaged children in Maharashtra and for the scale up of home based KMC in the state.



Rajeshwari Chandrasekar
Chief of the Field Office

Kangaroo Mother Care Foundation India

Trust Registration no.E/21020/Ahmedabad dt.23.07.2015.

Administrative Wing : Department of Paediatrics, Pramukhswami Medical College, Gokal Nagar Karamsad 388 325, Dist. Anand

Office : 10, Shamiana Apartment, 61, BMM Society, Ellisbridge, Ahmedabad 380006

Prof. Shashi N. Vani
M.D., D. Ped., FIAR, FNNF

Prof. Shashi N. Vani, M.D., D. Ped., FIAP, FNNF
Managing Trustee, Kangaroo Mother Care Foundation, India
Emeritus Professor of Paediatrics including Neonatology,
P.S. Medical College, Karamsad, Gujarat, India

From the Desk of Principal Author

It has been a great privilege for the members of Kangaroo Mother Care Foundation (KMCF) India to be the pioneers for introduction and scale up of KMC in India. Way back in the year 1993, the facility based KMC was introduced by us in the neonatology division of the B.J. Medical College and Civil Hospital, Ahmedabad, as a part of an international multicentric study and the first KMC ward was established. Since then, the KMC programme has been continued in India, surmounting many challenges.

In the year 2005, for the first time in India, Homebased KMC (HBKMC) was introduced as a part of homebased newborn care project in the rural/tribal project of SEWA Rural, Zagadia, a reputed voluntary service organization of India. Following favourable experiences over many years in that project in terms of Safety Feasibility and Acceptability, HBKMC was introduced through many other voluntary service organizations of Gujarat. Many low-birth-weight babies including preterm babies could be saved and later on it was also observed that it also helped in promotion of early childhood development of these children.

Subsequently Indian Council of Medical Research published their study of HBKMC and a very large meticulous study from Haryana was published in the Lancet (2019) endorsing the promotion of HBKMC in India.

Every year, theme -based national conferences are being organized by KMC foundation, India along with training programs including those for HBKMC and other activities for the dissemination of knowledge and best practices related to KMC in India.

We thank Department of Public Health, Government of Maharashtra and UNICEF for the partnership with KMC Foundation, India for upscaling KMC for the first time in India among the 78 tribal blocks of the state of Maharashtra.

It is a very important step for realizing the rights of these low birth weight and preterm newborn babies in Maharashtra. Needless to say, scale up of the HBKMC will facilitate the achievement of single digit neonatal mortality rate as highlighted in India Newborn Action Plan and Sustainable Development Goals by 2030.

Shashi N. Vani

ABBREVIATIONS

Abbreviation	Complete term
AKP	Alternate KMC Provider/ Surrogate KMC Provider
AWW	Angan Wadi Worker
ANM	Auxiliary Nurse Midwife
CHW	Community Health Worker
EBM	Expressed Breast Milk
ENBC	Essential Newborn Care
ECD	Early Child Development
FKC	Father Kangaroo Care
HBKMC	Home Based Kangaroo Mother Care
HBNC	Home Based Newborn care
HCP	Health Care Providers
IMNCI	Integrated Management of Newborn and Childhood Illnesses
IYCF	Infant and Young Child Feeding
IMR	Infant Mortality Rate
IV	Intravenous
KMC	Kangaroo Mother Care
KP	Kangaroo Position
KC	Kangaroo Care
LBW	Low Birth Weight
LMP	Last Menstrual Period
MOM	Mother's Own Milk
NGO	Non Government Organization
NICU	Neonatal Intensive Care Unit
NSCU	Newborn Special Care Unit
NSSK	Navjaat Shishu Suraksha Karyakram
ROP	Retinopathy of Prematurity
SBA	Skilled Birth Attendant
SNCU	Special Newborn Care Unit
UNICEF	United Nations Children Fund
WHO	World Health Organization

ABOUT THIS MANUAL FOR

HEALTHCARE PROVIDERS FOR HOME BASED KANGAROO MOTHER CARE

We are happy to prepare this manual for the promotion of Home Based Kangaroo Mother Care (HBKMC) by the Healthcare Providers (HCP) who provide services to mother, newborn and child in our country. The main focus is ASHAs, AWWs and ANMs, who are the frontline workers /{Community health workers (CHW) in the health system}. HBKMC is very much needed in India in different situations, and it has not been addressed properly. This manual should help to fill this void. In the difficult to reach villages and tribal areas, the facilities of road, transport and communication are very poor. Poverty, illiteracy and gender discrimination are prevalent. Health care facilities are situated in faraway places making it very difficult for the public to access these. In such situations, home based newborn care (HBNC) including KMC has proved to be of great use and helps to save many newborns. In urban slums, the problems are even more complex including poverty, poor infrastructure, poor water, sanitation and hygiene services, fragmented health services, due to which health services are not utilized properly.

The promotion of HBKMC should be a part of Essential newborn care (ENBC) and HBNC and not to be considered as an independent topic. This separate manual is prepared with the main objective that if basic knowledge and skills are provided to the mothers, they can practice HBKMC so that newborn babies get the best results of this simple, yet a very useful intervention with several benefits.

We have tried to make this manual as simple and practical as possible. Practical guidelines for all the three major components of KMC i.e. Kangaroo Position, Nutrition and Discharge and follow up are provided. Important subjects like communication and counselling for improving the quality and coverage of HBKMC, records and reporting and a special chapter on practice of KMC during the current Covid 19 pandemic have been added. Annexures include a few sections on training and a few practical aspects of newborn care which will be useful for the workers in remote areas. The trainees are advised to refer to the training module and guideline for HBNC for details of other components of HBNC. In this manual, only the components of HBKMC and the relevant aspects are highlighted. HCPs have some information and knowledge about KMC through different training programs of Essential Newborn Care (ENBC), Navjaat Shishu Surakha Karyakram (NSSK) and others. But have no skills and confidence to guide mothers for KMC as detailed capacity building is not done. This manual is prepared to build the missing gaps of knowledge and skills about KMC as relevant to home based care in remote rural and tribal villages and hamlets and urban slums.

Fig. 1: Kangaroo Mother Care

CHAPTER ONE

A FEW BASIC FACTS OF NEWBORN HEALTHCARE FOR HCPS /CHWs

It will be useful to refresh a few basic facts of newborn care before we proceed for care of the newborn babies with HBKMC.

1.1 Important Definitions:

- **Newborn baby:** A baby from the time of birth to 28 days or first four weeks of age.
- **Full term baby:** A baby born between 37 to 41 weeks and six days of gestational age/ pregnancy {Born between 253 to 293 days after the date of first day of last menstrual period (LMP)}.
- **Preterm or Premature baby (born too soon):** A baby born before 37 weeks of gestational age /pregnancy (Born before 253 days after the first day of the last menstrual period).
- **Birth weight of a baby:** The earliest weight recorded soon after birth of a baby preferably in first two hours of life. In case the weight cannot be recorded within the first 2 hours due to several issues, the first weight recorded within the first seven days of life is considered as birth weight. In that case, it is desired that along with the weight record, the day on which the weight is measured should be mentioned. For example: Birth weight of baby of Sita 1.7 KG (on 5th day of life).
- **Low Birth Weight baby - (born too small):** The baby whose birth weight is less than 2500 grams.
- **An Infant:** A child from the time of birth till completing one year of age. The first month of life is described as the neonatal period and the remaining 11 months period is called post neonatal period.

1.2 Why should we take care of our newborns?

First 1000 days of life from conception to two years of life of the child are the most important period of life for survival, growth and development. Adequate health promotion and nutrition during this 1000 days period is not only critical for pregnant women's survival but also for the survival of the newborn, his/ her ability to grow and learn, which helps in breaking the intergenerational cycle of poverty and malnutrition. As per the estimates developed by the United Nations Inter-agency Group for Child Mortality Estimation, an estimated 522,000 new born babies died out of 824,000 children below five years who died in India in 2020; most of these deaths are preventable.

The indirect impact of Covid 19 pandemic may have exacerbated the neonatal mortality rates in different states of India and simple interventions like early exclusive breast feeding and KMC, together with skilled birth attendance can save lives of many newborn babies.

1.3 Basic principles of newborn care:

a) Ensure **regular breathing**.

b) **Preserve adequate body warmth**, adopt warm chain for newborn care.

c) **Provide optimum nutrition, preferably exclusive Mother's Own Milk (MOM)** either as direct breastfeeding or as expressed breast milk.

d) **Hand washing and other measures of prevention of infections** including observing clean delivery practices with five/six cleans. Clean chain of baby care and avoiding

harmful traditional newborn care practices which are likely to introduce infections (Unhygienic cord care, pre lacteal feeds, application of Kajal in eyes, bottle feeding etc.)

e) **Early identification of danger signals in newborn, immediate prompt actions and if required referral to higher care hospitals** with all due precautions and preparations. These basic principles of care are applicable to all the newborns including full term or premature, healthy or sick and whether delivered at home or hospital.

1.4 Levels of newborn care:

- **Primary or essential newborn care:** Required for almost 85% of all the newborns. The care includes making sure of good breathing, keeping mother and her baby together in skin to skin contact, keeping adequately warm, promoting breastfeeding, infection prevention measures and early detection of danger signals and appropriate actions, if required and referral to higher centres with suitable precautions and care.
- **Special care or intermediary care:** Required for about 10 to 12% of the newborn babies. Includes oxygen therapy, intravenous fluids and medications, antibiotics, phototherapy, gavage feeding etc. Usually given in special newborn care units (SNCUs) or level II/Intermediate care units.
- **Intensive care or tertiary care:** Required for about 3 to 5% of newborn babies. Can be given only by specially trained specialists doctors and nurses in advanced care units with sophisticated equipment and advanced management.
- **Specialized Care for the newborns:** Surgical care, foetal therapy etc.

1.5 Why should we promote Home based Kangaroo Mother Care in India?

HBKMC is required in developing countries like India for the following reasons:

Ample scientific evidence recommends that simple interventions like KMC including breast milk feeding (Early initiation of breastfeeding, use of expressed breast milk, exclusive breast milk feeding etc.), hand washing and other infection prevention measures if done well and widely, can prevent most neonatal deaths.

A systematic review conducted in 2016 showed that at discharge or 40-41 weeks of postmenstrual age(PMA), KMC was associated with significant reduction in the risk of mortality (40%), infections acquired in the hospitals (65%) and hypothermia (78%) in newborns.

India has a huge number of LBW and preterm newborns who have very high rates of death and illnesses. HBNC including HBKMC through ASHAs, AWWs, ANMs with proper training can save the lives of many of these babies.

1.6 Different groups needing HBKMC in India

Similar to HBNC, HBKMC is offered in following different scenario:

Group I

The baby is delivered in a hospital and following the hospital protocols, KMC is started under the instructions of doctors and trained nurses. Once the baby starts showing consistent improvement, the newborn is discharged from hospital as per the laid down protocol and subsequent care including KMC is continued at home with regularly scheduled follow up visits to the hospital.

Group II

In this group, the baby is delivered in the hospital and the baby is eligible to receive KMC. But the mother is not able to stay in the hospital for her personal, socio-cultural reasons or the facility does not have expertise and/or equipment to provide care for the small and sick newborn, who is cared for at home.

Group III

In this group, the baby is delivered at home and the subsequent care of the newborn has to be given only at home.

In all these cases, through regular home visits, the ASHAs have the opportunity to offer good quality of HBNC including HBKMC and improve the chances of survival of the newborn, especially the small and sick babies.

Fig. 2: KMC at home for twins

CHAPTER TWO

BASICS AND BENEFITS OF KANGAROO MOTHER CARE (KMC)

2.1 What is KMC?

KMC is an evidence based, low cost, yet high impact, simple and natural method of care of newborns with added benefits to low birth weight and preterm babies. It is a method of holding the newborn directly in skin to skin contact on mother's chest in between her breasts, without any layer of clothing in between, with baby's neck slightly extended and the body of the baby is in as much vertical position as possible so that mother and baby can have eye to eye contact and both are covered together from above. The newborn is breastfed every two hours. This is better described as a loving body hug than mere superficial skin to skin touch.

Fig. 3: Helping mother for KMC

2.2 WHO definition of KMC:

KMC consists of- early, prolonged and continuous skin to skin contact between the mother and her baby, with exclusive breast feeding whenever possible, early discharge with adequate follow up and support and initiation of practice in the facility and continuation at home.

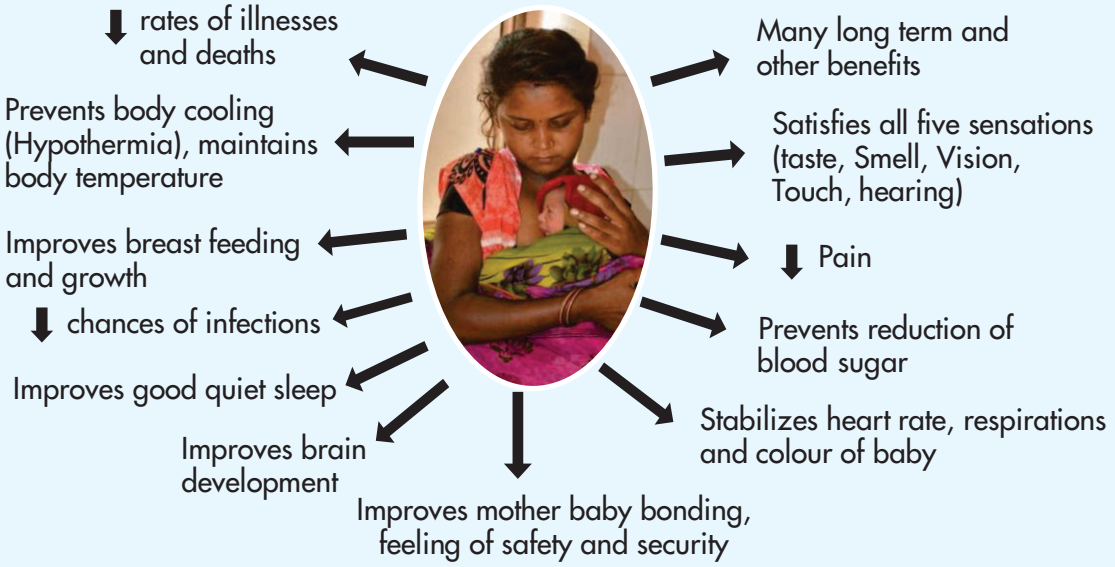
2.3 Benefits of KMC:

There are several benefits for the baby, for the mother, family members, hospital, community and ultimately to the nation.

✓ Benefits of KMC to the baby:

- High potential to reduce deaths and sickness of preterm and LBW newborns (Almost up to 40% of total neonatal mortality can be prevented).
- Prevents neonatal hypothermia (Body cooling).
- Helps to warm up the newborn who already has thermal stress (mild cooling of the body).
- Develops thermal synchrony between mother's body temperature and baby's body temperature (When the baby's body temperature reduces slightly, mother's body temperature rises a little high and vice versa).
- Increases the duration of exclusive breast milk feeding, resulting in better weight gain, growth.
- Reduces the risk of severe neonatal infections including hospital acquired (Nosocomial) infections as well as septicaemia (severe infection affecting multiple organs).
- Increases mother baby bonding.
- Facilitates early physiological stability of heart rate and respiration of the neonate.
- Promotes good quality sleep and improves neuro development and behaviour development.

Benefits of KMC to Newborn Babies



- Reduces the requirement of oxygen and episodes of apnoeic attacks (Temporary cessation of breathing for more than 20 seconds at a time, often causing choking of respirations and bluish discolouration of skin due to lack of oxygen) which frequently occur in very preterm babies.
- Reduces the neonatal stress and improves the feeling of security in the baby and babies cry less.
- Reduces the feeling of mild to moderate pain following simple procedures like heel prick, venepuncture, testing for Retinopathy of Prematurity etc.
- In short, all the five senses of the baby i.e. touch, smell, hearing, vision and taste are satisfied very early resulting in better neurodevelopment.

✓ Benefits of KMC to mother:

Due to active involvement in the care of small and even sick baby soon after birth:

- There is increased bonding between mother and her baby.
- Mother feels empowered and confident to take care of her small baby in the hospital and continue the same care at home after discharge (Applicable for hospital delivered babies).
- Less chances of post -partum (After delivery) depression and psychosis in mother.
- Better supply of breast milk due to increased production of hormones.
- Earlier involution of uterus and stopping of post -partum bleeding in mother.
- Early return to home settings.

✓ Benefits of KMC to the family:

Economical due to lesser stay of the baby and mother in the hospital and less use of medications, oxygen etc. (Applicable for hospital delivered babies).

- Improved quality of breast feeding and less chances of illness to the baby.
- Better family support and involvement of family members in the care of the baby.
- Early return to work and routine family life.
- Reduced incidence of child abandonment and abuse.
- Benefits of KMC to the hospital: (Applicable only for hospital delivered cases).
- Saves money on health care costs of small and sick newborn and even during post - natal period.
- Better use of manpower and infrastructure.
- Reduced requirements of antibiotics and other medications, oxygen, formulae etc.
- Less chances of hospital acquired infections which are much more difficult to treat.
- Less burden on nursing staff due to more involvement of the mother in the care of her baby.

✓ **Benefits to Community and the Nation:**

- Better orientation in good newborn care practices and better participation.
- Better quality of survival (Thriving well) among the LBW and pre -term infants.
- Reduction in cost of newborn care due to multiple reasons and better utilization of the funds.
- Better quality of intelligent future citizens.

2.4 Role of KMC in Early Child Development (ECD):

Currently our goal for newborn care is not to just ensure only the survival but also to ensure that babies thrive well. Along with good nutrition and physical growth, they get their mental stimulation through love and affection and achieve their full potential of development and become happy, healthy and responsible adults. To be effective ECD should be started as early as possible after birth:

- KMC provides the best start to LBW and preterm babies who are prone to developmental problems.
- In the first few hours after birth, the baby's brain is very responsive to various modes of brain stimulation which lay a strong foundation for immediate and long -term development.
- Immediate skin to skin contact soon after birth provides an excellent opportunity and lays the strong foundation for early child development.
- KMC provides a womb-like environment and during KMC, the baby gets good sleep, cries less, feels less pain, feels secure and stress free. All these help for the better brain development of the baby along with the added benefits of breast feeding.
- During KMC, breast feeding is encouraged which adds to development of the brain. Breast milk has several components which help for better mental development of the child.
- KMC stimulates all the five sensations which help in early brain development.

2.5 A few basic aspects of KMC:

✓ **KMC has three major components:**

A Kangaroo Position- Skin to skin contact between mother and her baby preferably in vertical position and eye to eye contact.

B Kangaroo Nutrition- Exclusive breast milk feeding as much as possible.

C Kangaroo Discharge and Follow Up- Planned early discharge and regular follow up including follow up for neuro-motor, neuro-

behaviour and sensory development for all babies.

All carried out in a supportive environment, both in facility as well as at home.

✓ **Early skin to skin contact, soon after birth:**

Early skin to skin contact is advised soon after birth, in the labour room itself for all the babies irrespective of gestation age and birth weight except for those who require immediate attention for resuscitation or other life -saving interventions. It is helpful for following:

- Rapid physiological stability for the baby, in terms of heart rate and respirations.
- Preventing cooling of the baby soon after birth.
- Stimulating early breast milk production.
- Developing early bonding between mother and her baby.
- All the benefits of non -separation of the mother and her baby including reducing the mental stress of mother as well as the baby.
- Reduction of chances of early neonatal infections.

Fig. 4: Immediate skin to skin contact soon after birth/baby on mother's abdomen soon after birth

- Ideally this early skin to skin contact should be prolonged for at least one to one and a half hours and preferably combined with breast milk feeding. This prolonged skin to skin contact can be labelled as Kangaroo Care. Skin to skin contact for a few minutes cannot be labelled as Kangaroo Care. In case of hospital delivered cases, routine weighing, Vitamin K administration and birth dose vaccination of BCG, Hepatitis B and OPV can be done after the initial one to one and half hours of direct skin to skin contact on mother's chest.

✓ **Duration of KMC:**

- Ideally KMC should be given for a total of at least 20 hours in a day, which improves survival of the LBW and preterm babies.
- Mother can continue providing KMC as long as it is comfortable for her. She can then hand over the baby for continuing KMC to Alternate Kangaroo Care Provider (AKP), if available or keep the baby in her bed for a break and again continue with more sessions.
- During the 24 hours, the total hours of KMC given are calculated by adding the hours given by mother as well as by the AKP in different sessions.

✓ **Types of KMC:**

- **Continuous KMC:**

  The longer the duration of KMC, the better are the impacts. It should be ideally given for almost 24 hours in a day, or at least for more than 20 hours in a day. Only obligatory breaks are taken by the mother for her bath, food and other personal needs and for the baby for diaper change, cup feeding, routine clinical examinations etc. The support from Alternate KMC Provider (AKP) from the family is very helpful for giving continuous KMC.

- **Intermittent KMC:**

  KMC is given for a few hours at a time with long breaks in between each session. This type is mainly done for extremely LBWI and stabilized sick babies and also when the mother is recovering from surgery like CS, tubal ligation etc. where support from AKP is not available.

2.6 When to stop KMC?

If the mother and baby are comfortable, KMC should be continued till the baby's weight is more than 2500 gm. Around that time, the baby starts wriggling in Kangaroo Position to show that s/he is uncomfortable, pulls her limbs out, cries every time the mother tries to put the baby in skin-to-skin contact. This is when it is safe to advise the mother to wean the baby gradually from KMC. Breast feeding must continue. Mother can return to the occasional KMC after giving bath, or just before sleep or during cold nights.

✓ Don'ts of Kangaroo Mother Care:

- Do not bathe till the infant weighs 2500gand stable. Body sponging may be done.
- Do not handle infant too frequently.
- Do not give bottle feed.
- Do not allow infant to be in contact with sick people.
- During KMC, as far as possible do not hold the baby horizontally, particularly the babies who are very premature or very small.
- Do not apply any cream or oil on the umbilical stump.

2.7 Scope of Kangaroo Mother Care in community:

✓ KMC can be given to:

- All the stable LBW babies including preterm babies even at home.
- It can be given to term babies also as much as they are comfortable in KMC position in the initial few days after birth.
- For sick babies, if hospitalization is not possible, as a measure to relieve pain and reduce stress.
- For transport of the newborn wherever required for taking to higher centers for hospitalization or for follow up for special check of eyes, hearing and assessment for brain development or for regular assessment of nutrition and growth and for immunizations etc.

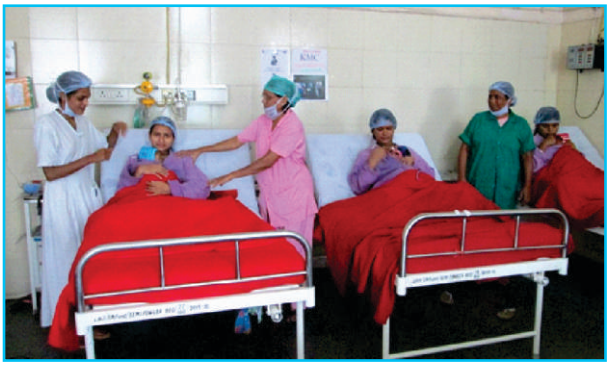


Fig. 5: KMC ward in Govt hospital, Maharashtra

CHAPTER THREE

PRACTICE GUIDELINES FOR HOME BASED KANGAROO MOTHER CARE

In this chapter practice guidelines are provided for guiding mothers for KMC at homes. Basic approach remains the same as that of facility based KMC.

Broadly three major components are included in KMC:

A) Kangaroo Position.

B) Kangaroo Nutrition.

C) Kangaroo (discharge and) follow up.

(The component of planned early discharge as a part of KMC is not applicable in case of Home based KMC in group 2 and group 3.

Regular follow up is very important for all the three groups of HBKMC).

3.A Kangaroo Position:

✓ **Topics covered in this chapter:**

- 3.A.1 Which babies are eligible for HBKMC?
- 3.A.2 Who can provide KMC?
- 3.A.3 Facilities and support expected from family members for HBKMC.
- 3.A.4 Advance preparations for KMC at home.
- 3.A.5 Immediate preparations just before the actual start of KP/KMC.
- 3.A.6 Actual procedure of Kangaroo Position/KMC.
- 3.A.7 Caring the baby in Kangaroo Position at home.
- 3.A.8 Monitoring the infant during KMC.
- 3.A.9 Danger signals of the baby during KMC and actions to be taken.

3.A.1 Which babies are eligible for HBKMC?

✓ **Recommendations:**

- Generally, all newborn babies born at home who are not having serious problems irrespective of weight or maturity should be provided KMC (skin to skin contact/kangaroo position).
- Ensure all LBW and premature babies receive KMC.
- Ideally, neonates having serious problems should be referred to hospitals having Mother and Newborn Care Units, Special Newborn Care Units or Neonatal Intensive care Units, where better care can be given. But if that is not possible, even these babies with serious problems can be kept in Kangaroo position and feeding with expressed breast milk can be tried.

✓ **General guidelines in hospitals:**

The timing and initiation of FBKMC depends on the birth weight and stability of the infant. In the facilities, following guidelines are provided, which may not be applicable at homes as well:

1. **Birth weight more than 1800 grams and less than 2500 grams:**

   These infants are generally stable at birth. Therefore, in most such cases KMC can be initiated soon after birth in the labour room and continued in the postnatal ward. The neonate weighing less than 2000gm should be accorded priority for initiating KMC considering the huge burden of LBW infants in the country.

2. **Birth weight more than 1200g and less than 1800g:**

   Many infants in this group have significant problems in the neonatal period. Such infants may need care in a Special Newborn Care Unit (SNCU) or a Newborn Intensive Care Unit (NICU), which can be provided while the mother provides KMC in these units. KMC can be given to a hemodynamically stable infant receiving IV fluids, antibiotics and oxygen. The duration may be gradually increased and thereafter the infant may be transferred to a dedicated KMC ward.

3. **Birth weight less than 1200g:**

   These infants frequently experience serious prematurity related morbidity often starting soon after birth. It may take days to weeks before the infant's condition allows initiation of KMC. Duration of KMC should be gradually increased based on tolerance of the infant.

   (Recent studies have demonstrated that even very sick babies can be managed and interventions and investigations can be done when the baby is in Kangaroo Position under expert supervision and guidance in neonatal intensive care units with many advantages including further reduction of mortality).

3.A.2 Who can provide KMC?

✓ **Best person is the mother:**

She should be

- Medically and physically fit, in good health, free from serious medical problems.
- Willing and capable of holding the baby in KMC position continuously for at least 20 hours a day or at least one and half hour per session and have such frequent sessions in a day and carry on for many days as required.
- Should maintain basic standards of personal hygiene (Proper hand wash, daily bath, clipped fingernails, tied up hair, clean washed clothes). No skin infections, especially on mother's chest.
- Mother should not be smoking or drinking alcohol or any addictive drugs during pregnancy and lactation period and especially during the time providing KMC.

The term KMC is very often misinterpreted that only mothers can provide KMC, which is not true. Other adult family members including father, mother -in -law, grand -parents, uncle, aunt, sister or any responsible, willing and healthy person can also be an alternate KMC provider (AKP). Even friends, neighbours and staff members also can be AKPs with approval from mother and her family members. The alternate KMC provider should be having the same attributes as that of mother when offering KMC.

3.A.3 Facilities and support expected from family members for HBKMC:

✓ **A supportive family is a very important pre requisite for successful KMC:**

- Family members should allow mother to do KMC frequently and for prolonged time as required.
- Provide her a clean, well ventilated place at home for KMC with some privacy.
- Observe the baby closely when the mother is sleeping either with the baby on her chest in kangaroo position or the baby lying next to her in the same bed.
- Baby is covered well and kept warm and clean when not undergoing KMC.
- Be an AKP and relieve the mother for some time and help in providing KMC to the baby.

- Try to learn about the early signs of danger signals in babies and refer to the hospital immediately.
- Help mother with routine domestic chores and to take care of other children, if any.
- Take mother for regular follow up as per schedule for routine check -up of growth and immunizations and special neuro developmental follow up, screening for ROP, hearing etc.
- Provide plenty of clean washed clothes, diapers for the use of the baby and also for the use of the mother.
- Provision of food and other personal requirements, including soap, clothes and other needs.
- Provision of water and nearby facilities for toilet, bath etc. for mother are desirable.

3.A.4 Advance Preparations for KMC at Home:

- **The number to call an emergency ambulance** to be displayed prominently in the house so that when need arises, immediate contact can be established.
- **The address and the directions of the hospital to be referred in case of emergency** preferably including the phone numbers of persons to be contacted during emergency.
- **Selection and preparation of a place for KMC at home** very often, the homes are very small and congested. Even in such homes, wherever possible, a well ventilated, clean area can be prepared for mother and her baby to remain together. Cobwebs, dirt and dust to be removed. If possible, simple whitewashing of the walls can be done before the arrival of the baby. A well -lighted, ventilated area adjoining a window in the house, without exposure to direct drafts of wind, can be selected. If mud floor is there, fresh cow dung plastering may be avoided for some weeks prior to delivery. As far as possible, only wet mopping of the floor must be promoted. Direct dusty sweeping should be avoided wherever a newborn is being cared for. Mother with a newborn should be away from cattle sheds as much as possible and also from poultry. Rat holes should be filled and cleared away. Cockroaches, lizards should be cleared as much as possible. Environment must be free of water logging and filth to minimize the menace of mosquitoes, flies and other insects.

  If a cot is available, fine. If not, a mattress or mat can be spread on the floor. Two pillows may be provided so that the mother can adopt a reclining position while lying or sleeping with the baby in kangaroo position. While providing KMC, the mother can rest against a wall or a pillar with the help of pillows or cloth bundles for support, if a reclining chair (preferably with a footrest) is not available.
- **Use of mosquito nets must be encouraged.**

  Use of mosquito repellent coils and chemical preparations should be avoided.

✓ **Supplies needed during KMC to be arranged beforehand:**

- ***Clothing for the baby:**
- Caps two, socks and mittens two pairs, if possible. (If not available, cotton cloth pieces can be used to cover head as well as feet and hand depending on the season).
- Front open baby cloth/zabla – four (No hooks should be used in clothes for babies to avoid injuries).
- (Extra pairs are recommended for use, in case of wetting or soiling by baby).
- Blanket/shawl to cover from above.

- In case, a support binder is not available, an extra dupatta, bedsheet or shawl for fixing the baby properly in Kangaroo position.
- ***Diapers for babies:**
- Disposable diapers are not very often available, or these may not be affordable for poor families. Very often because of the cost involved, even when they are used, frequent changing is not done leading to local irritation, rashes and skin infections. Traditional loin cloths used for babies are often single layered and do not help in preventing wetting or soiling. Quite a few mothers do not opt for KMC because of the dislike of soiling and wetting by the baby when KMC is being done. Even when they do offer KMC, the duration is shortened because of frequent wetting of the mother's chest and abdomen by the baby. Keeping all these factors in mind, following improvisation is suggested.
- Cotton cloths made up of smooth absorbent and easily washable material of about 15 inches x 15 inches, about 12 to 15 pieces are collected in advance. If possible, the edges may be stitched to avoid tethering. For use as a washable diaper, the cloth can be folded in three or four layers depending on the size of the baby. A waist band should be tied to the baby and this folded cloth can be tucked as a diaper in front and back. This multi layered fold of cloth helps in preventing direct soiling of the mother's chest and abdomen. It can be easily tucked and removed after use. After soiling, the cloth can be easily unfolded, washed and dried. They are definitely very helpful to mother. They also help in reducing pollution due to disposable diapers.
- ***Support garment such as a Kangaroo Bag or different types of wraps for KMC. Their use is not an absolute must.** But any such extra supporting garment helps in keeping the baby secure in KMC position and also provides additional safety from slipping down or sudden undue flexion or extension of the neck of the baby and preventing very rare chances of life -threatening catastrophes for

Fig. 6: Home made reusable cloth diapers.

the delicate small, pre -term baby. The use of such support garments help mothers to have some safe mobility with baby in kangaroo position and at least one hand of the mother can be free with which she can perform a few simple tasks at home (drying clothes, washing small items, cutting vegetables, simple cooking or even some recreation activities (like playing sitting games with cards, reading etc.).

- ***Clothing for mother:**
- Any front open, culturally acceptable, comfortable garment can be used by mothers for KMC. It can be traditional saree and blouse, kurta, gowns and even men's shirts. Preferably cotton, well washed and sundried, to be changed every day after bath.
- All the bed sheets or old cotton dhotis/ sarees etc. which are to be used for mother and baby in post -partum period, along with baby and mother's clothes and diapers to be collected well in advance, well washed, sun dried and kept aside for the use after the birth of the baby.

During COVID 19 pandemic following additional items should be collected in advance:

About four to five masks prepared from cotton cloths (for washing and reusing).

Soap and provision of water for frequent hand wash; Sanitizers if possible.

3.A.5 Immediate preparations just before the actual start of KP/KMC:

✓ ***Preparation of mother before actual start of KP/KMC:**

- Mother should be aware of the difficulties that she will face while providing KMC and should be mentally prepared for the same. Help from family members will be a great relief to her.
- Mother must **practice the technique of hand washing** properly before handling her baby.
- She should take a good bath and attend to her personal hygiene before starting KMC.
- Wherever possible, KMC can be offered by AKPs till mother's infections are cleared.
- Mother should know how to **detect early signs of danger signals** in her small baby and take immediate remedial measures as much as possible.
- She should remove her jewellery like chains or threads from the neck, bangles, ring, wrist watches, pins, clips to avoid accidental injury to her baby. Her hair should be tied up properly.
- Mother can be trained to keep the record of how many hours of KMC she had offered in 24 hours.
- Mother must prepare a place, preferably in her own bed to keep the baby clean, warm and safe and free from mosquitoes, flies, cockroaches, rats etc., when she is not offering KMC and at times, baby may have to be kept alone for a short while when mother has to go for bath, food.

✓ ***Preparation of baby for Kangaroo Position (KP)/KMC:**

All the preparations must be done in a warm and clean area, away from direct wind and draughts.

- Baby's clothes must be removed or opened from the front, only the back may be covered.
- Baby is to be clad only with an appropriate size diaper and cap to cover the head. (Considerable amount of body heat (about 10% of total body heat in a neonate) is lost from the head. Hence it is very important to cover his/her head with a cap to prevent cooling of the baby's body.

- Cooling of body parts and the resulting complications are more in pre -term and LBW babies.
- If ready made diapers are not available/ affordable, locally improvised ones can be used.
- If available, a KMC bag/ wrap or such supporting garment can be used to hold the baby securely in Kangaroo Position and that may allow the mother to move around.

3.A.6 Actual procedure of Kangaroo Position:

- The mother should sit or stand as per her preference, comfortably in a clean, warm, well ventilated place away from winds.
- Her chest in between her breasts, should be exposed by opening the hooks of the upper garment.
- Mother can have a bath before starting KMC. Specially washing the chest before KMC is not needed.
- The baby should be carefully lifted with a blanket on her/his back and the bare chest of the baby should be put in direct contact of mother's chest in between her breasts in such a way that head of the baby lies just below the chin of the mother (at such a level that mother can kiss baby's head on the top easily) in as much vertical position as possible and the head of the baby is turned to any one side so that baby's nose, mouth remain free and not compressed in mother's breasts or body fat.
- Neck is slightly extended to make sure that the airway remains open.
- Head should be given support from the back of the neck in such a way that it is neither too much bent in front nor too much bent back.
- The arms of the baby should be bent/flexed in such a way that they lie above the breasts on the mother's chest and the two feet of the baby should be just below the breasts in a bent/ flexed position. The hips should be bent/ flexed and stretched out/ abducted in a frog-like position.

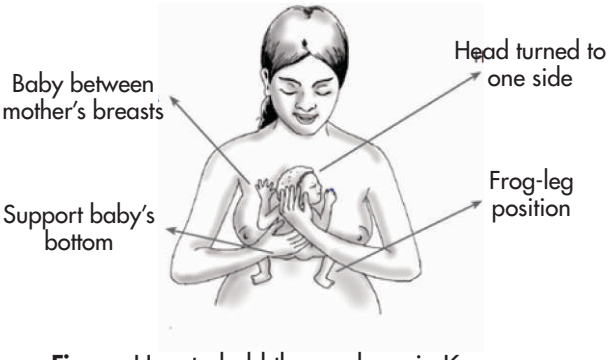


Figure: How to hold the newborn in Kangaroo Position (reproduced from Kangaroo Mother Care and optimal feeding of low birth weight infants: Operational Guidelines, Ministry of Health and Family Welfare, GOI, September 2014)

- Mother should support the baby's bottom with one hand.
- The baby's body should be turned towards the mother and held as much straight as possible with as much maximum body contact as possible.
- The head may be adjusted in such a way that mother and baby can have direct eye to eye contact.
- Baby's abdomen should not be tightly bound so that easy breathing is possible for the baby.
- Mother's breathing stimulates the infant, thus reducing the occurrence of apnoea (stoppage of breathing in between).

A very useful check list has been suggested by the United States Institute for KMC training, which is very helpful for checking the safe positioning for skin to skin contact in KMC.

Checklist for safe positioning for skin to skin contact/ kangaroo positioning:

- Face can be seen.
- Head of the baby is in sniffing position so as mother and baby can have eye to eye contact.
- Nose and mouth are not covered.
- Head is turned to one side, neck is straight, not bent.
- Shoulders are flat against Mom's chest.
- Chest to Chest with Mom.
- Legs are flexed/ bent from knees.
- Little upright, not flat, on bed/chair.
- Cover the back with blanket or sheet.
- Both (Mother and baby) are being watched while sleeping.
- Baby is being monitored.

If no one can watch you and your baby after feeding and when sleep is likely- put your baby on his / her back in a safe place.

Once a proper kangaroo position with or without the help of a kangaroo bag, lycra or some wrap is achieved, the baby is to be kept in that position for as long as possible, so that baby remains warm and calm, gets good sleep and gets all the benefits of KMC. Baby needs to have a good cycle of quiet sleep for about one hour, so that good brain growth happens. For the newborn to get one cycle of good sleep for one hour, the mother has to hold the baby in kangaroo position for at least one and half hours. The longer sessions in KMC are very much useful. Ideally KMC should be done for all the 24 hours of the day continuously to get the best results. If support from family members or alternate care providers is available, KMC can be tried for as long as possible. Disruptions in shorter intervals and frequent handling of the newborn should be avoided. That will not do good for the small babies.

Whenever binders, bags or wraps are used for the baby for Kangaroo positioning, mother must be trained to move the baby safely in and out of supports with one hand placed behind the neck on back and lightly support the lower part of the baby's jaw with her thumb and fingers to prevent baby's head from slipping and blocking the airway when the baby is in upright position and place the other hand under baby's bottom for support.

- Explain to the mother that she can breastfeed in the kangaroo position. In fact, it is easier to feed in that position. Holding the baby near the breast stimulates milk production.
- Mother can take care of twins too. Each baby is kept on each side of her chest. She may want to alter their position. Initially she may feed one baby at a time. Later she will be able to feed them simultaneously from both the breasts.
- Mother can rest with the baby in the kangaroo position. When she is likely to fall into a deep sleep, at home, it is advisable to keep the baby at her side in the same bed or AKP may take over for KMC. When direct observation is not possible at home, it is better to interrupt KMC while the mother is sleeping, to be safe for the baby.

During follow up visits to mother, CHWs must talk to her and listen to her medical as well as personal social constraints and try to help her as much as possible. Initially the mother may be frustrated because of feeding problems of the small baby. She should be guided for feeding the baby with expressed breast milk and the different feeding techniques and encouraged to continue KMC. Support in the initial stages are of great importance for the successful continuation of KMC.

Fig. 7: HBKMC by mother.

3.A.7 Caring the baby in Kangaroo Position at homes

At homes, the mothers do not have constant guidance or supervision from any health care functionaries. Hence it is important to provide some tips for care during KMC.

Most of the necessary care of the baby including feeding is possible while in kangaroo position. Baby has to be moved out only for changing the diapers, hygiene and cord care and whenever required for cup feeding. S/he has to be taken out of KMC for at least one complete check -up during the home visits of the CHW. If the baby is secured well in Kangaroo Position, during daytime, mother can walk about and do some of her light daily chores and recreational activities with some care. Throughout, attention must be paid for providing appropriate support to the baby's neck and bottom to prevent any accidents due to undue neck movements and slipping of the baby.

3.A.8 Monitoring the infant during KMC:

Babies should be monitored carefully during HBKMC, particularly in early stages.

- Infant's airway is clear.
- Breathing is regular.
- Colour is pink.
- Body temperature is maintained well.

3.A.9 Danger signals of the baby during KMC and actions to be taken:

During every home visit, the CHWs should have a thorough check up of the baby and monitor for following parameters herself and also make sure that mother and family members including AKP can recollect about how to recognize the same.

- Temperature.
- Breathing pattern.
- Heart beats.
- Color of the baby.
- Overall activity and movements.
- Feeding.
- General well being.

➢ **Body temperature of the baby** is recorded by measuring axillary temperature with a thermometer (Preferably with a digital thermometer).

- If a thermometer is not available, body temperature can be assessed by a palpatory method, by palpating soles of feet and abdomen with dorsum of the examiner's hand.
- If feet and abdomen, both are warm to touch, nothing to worry.
- If the feet feel cooler and the abdomen/body is warm, the baby is likely to have thermal

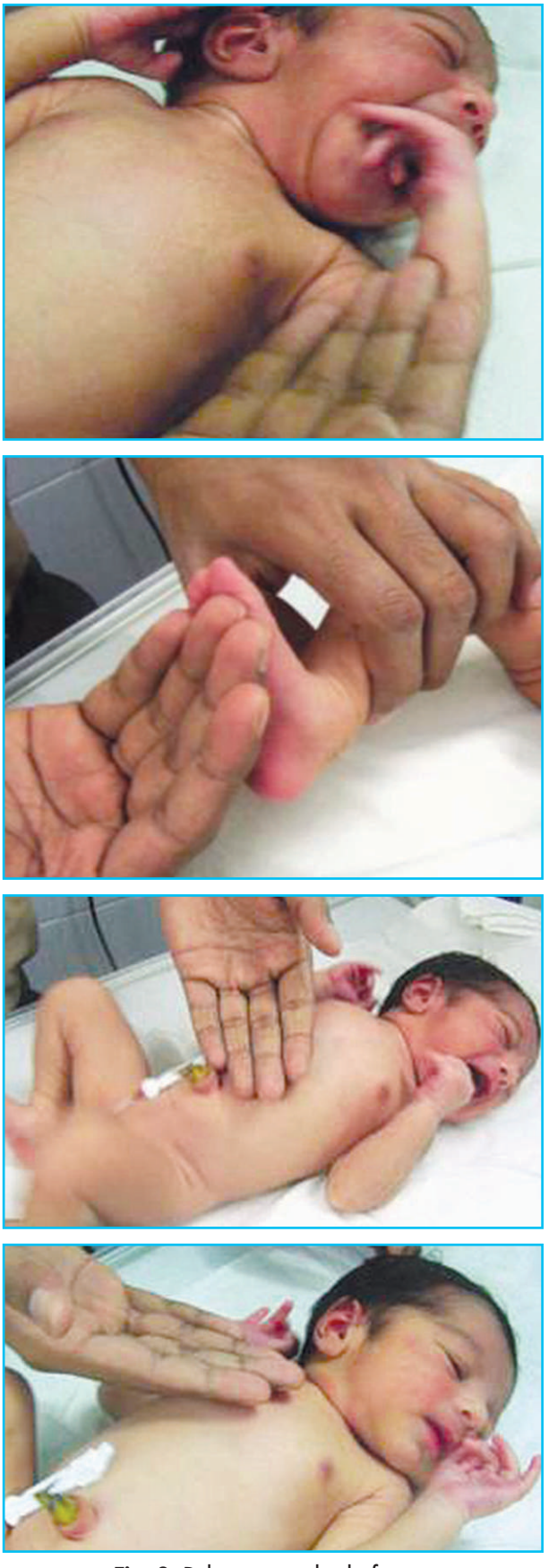


Fig. 8: Palpatory method of temp assessment of the newborns.

stress and immediate skin to skin contact in KMC and covering with a blanket from above, will help to warm up the baby.

- If the feet and abdomen/body both feel cold, the baby is likely to be in moderate to severe hypothermia and immediate action must be taken to rewarm the baby.
- Putting the baby only in kangaroo position will not help when the baby is a moderate to severe cold as KMC may take some time to warm up the baby. Ideally, the baby has to be put under a warmer.
- In situations when warmer or some heating devices are not available at homes, if possible, a cotton bundle of cloth can be warmed by rubbing on a heated thick iron pan ("tawa" (used in Indian homes for making chapati/roti) and the heated pad of cloth is first tested for the degree of heat by rubbing on mother's/care takers' own cheek and if found tolerable, then applied on baby's body (abdomen or thighs)to rewarm the baby. This may have to be repeated several times to rewarm the baby adequately. Care must be taken to act quickly and safely so as not to cause burns on the baby's delicate chest and abdomen and also to rewarm the baby's body.
- If the baby fails to rewarm despite efforts for more than one hour, the possibility of severe infection (sepsis) should be considered and urgent steps for referral to a hospital must be taken. If that is not possible immediately, the local ANM may be requested to give injectable Gentamicin one dose and then arrange for transfer to the proper hospital.
- **Do not use a hot water bottle or bag for keeping the baby warm.** Use of hot water bottles in these situations is not encouraged much due to possibilities of accidents and problems. Chances of availability of a proper rubber water bag are less in these places. If a

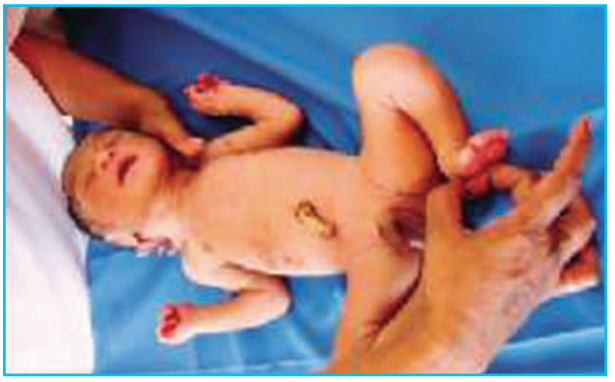
glass bottle with hot water is used, it may break causing injuries or the lid of the hot water bottle may be loosely closed allowing water to leak out and cause burns to baby or wetting the baby and causing hypothermia depending on the temperature of the water filled in the bottle/bag.

- **Observing breathing rate, depth and regularity:** Usually the breathing rate in a newborn is around 40 per minute and variable. If the respiration rate is less than 20 per minute or more than 60 per minute, it is a sign of a serious problem. It is also suggested to observe the pattern of breathing of the baby. If breathing is laboured or very shallow, it indicates a problem. If the rhythm of breathing is very irregular or breathing stops for a few seconds continuously, described as apnoea, it also indicates a problem. If breathing stops for more than continuous twenty seconds and may or may not be associated with changes in heart rate and bluish discoloration, it indicates serious problem. Preterm babies often get frequent such temporary episodes of stopping of breathing described as apnoea. If immediate action is not taken, brain damage can occur leading to many long term consequences like fits, delayed brain development or even death due to lack of oxygen.

What to do in cases of apnoea?

- Teach the mother to observe the baby's breathing pattern and explain normal breathing which appears regular and easy breathing without any undue efforts.
- Explain what a temporary stoppage of breathing / apnoea means and what ill effects it has on a baby. It could be a sign of serious illness for the baby.
- Explain that if breathing stops for 20 seconds or more, the baby becomes blue (Blue lips and face), this may be a sign of serious illness.
- Teach her to stimulate the baby by gently rubbing the back or head or tickling the soles of feet and by rocking movements until the baby starts breathing again. If the baby is still not breathing, the mother should go to a hospital immediately.

a) Flicking the soul



b) Rubbing the back

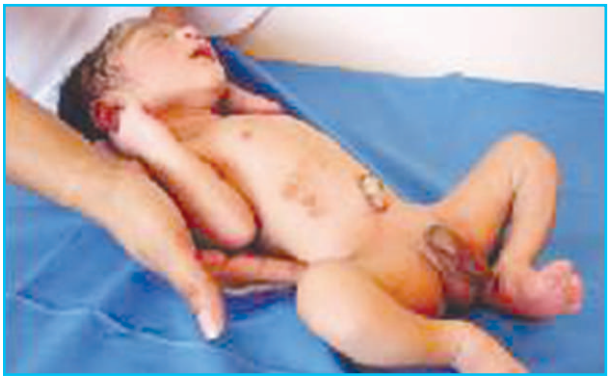


Fig. 9: Physical stimulation for neonatal apnea cases

Very fast or slow breathing and laboured breathing as seen by chest indrawing, grunting and nasal flaring are also signs of a serious problem in a baby.

- **Excessive frothing from mouth and even nose:** Froth or secretions should be immediately wiped with a clean cloth wrapped around the index finger of the

attendant and sweeping through mouth and nose gently and turning the head to one side and even lifting the head slightly above and slightly tilted back so that airway remains open.

- **Difficulty in feeding:** it may be in different grades. Baby may stop feeding totally or may be slow or drowsy to feed or vomits frequently or excessive crying while feeding.
- **Abnormal movements of body and eye/convulsions:** Whenever a neonate has abnormal movements or eye movements, the attendant should roll the baby on his/her side and position in such a way that the airway remains open and report to the HCP.
- **Frequent loose motions/diarrhoea:** Dehydration should be prevented. Increase frequency of breast feeding and if quantity of urine passed in previous 12 hours is less and colour of urine becomes dark yellow due to concentration, which could be a sign of severe dehydration, use of ORS in between feeds to be given.
- **Boils and pustules over the skin-** Oral Cotrimoxazole can be given by Anganwadi workers or ANMs if less than 5 boils are present.
- **Yellow discolouration of eyes and skin/jaundice***
- **Undue fullness of stomach/abdomen with or without vomiting***
- **Excessive bleeding from umbilical cord or from any other parts of the body***

In all these situations, refer the newborn to a hospital. Recently community-based nurses like Auxiliary Nurse Midwives are being trained for giving injection Vitamin K to prevent bleeding in neonates (Haemorrhagic disease of newborn) and Injection Gentamicin as the first treatment for the cases of suspected serious infections/ sepsis before referral.

- **Danger Signs**

A simple algorithm is suggested for easy remembrance of most of the danger signals.

A - Apnoea- Breathing stops for more than 20 seconds continuously. Frequent and long spells.

B - Breathing difficulty- very fast or slow/ Irregular rate and rhythm.

C - Chest indrawing, grunting, froth from mouth.

C - Cold hands and feet.

C - Convulsions/abnormal movements or behaviour.

D - Decreased feeding, stops feeding or vomits.

D - Decreased activity, weakness or lethargy.

D - Diarrhoea/loose watery stools.

D - Distension/ fullness of abdomen.

H - Hypothermia (Cold limbs/body), Hyperthermia (Fever).

3.B Kangaroo Nutrition:

Feeding of New-born in HB KMC-Special Considerations.

(The CHW is advised also to read manuals of Infant and Young Child Feeding and guidelines for feeding of the newborns in facility based KMC for more details).

In this manual, only the salient points of optimal feeding of LBW and preterm babies in home situations are mentioned.

The most important component of KMC is to promote exclusive breast milk feeding. Appropriate feeding of LBWI improves their chances of survival and is important for their

optimum growth and development. The nutritional needs of infants with similar birth weight may vary depending upon whether the infant is appropriate for gestational age (AGA) or small for gestational age (SGA). Broad principles of feeding the baby during HBKMC are the same as those of hospital based KMC. But depending on the resources and expertise available with the attending HCP, certain modifications have to be made. Only such situations are highlighted here.

In this chapter following aspects have been described:

- 3.B.1 Steps for successful breastfeeding for stable LBW and preterm babies.
- 3.B.2 Feeding of unstable (sick) and too small babies (VLBWI/ELBWI).
- 3.B.3 Skills required for feeding LBWI during HBKMC.

Every effort should be made to provide breast milk to LBWI.

3.B.1 Steps for successful breast feeding for stable low birth weight babies:

- **What to feed and how to give?**

  Breast milk is the best choice for all the babies.

  It is ideal food for all infants including those who are LBW.

  WHO recommends that all LBWI, irrespective of their gestation, be fed with breast milk.

  The goal is to enable every LBWI to receive feeding directly and exclusively from his/her mother's breast at the earliest.

- HBKMC is started for all the stable and even mildly sick babies and in all the newborn babies breastfeeding should be started before one hour of birth and exclusive breastfeeding should be continued for six months.
- Breastfeeding should be continued for babies having birth weight more than 1800g and born more than 34 weeks of gestation as calculated from the first day of the last menstrual period.
- In the weight group of 1200 to 1800 gm babies who are mature, may be able to take direct breast feeding

- **Immediate skin to skin contact, delayed cord cutting, initiate early breast feeding.**

- Soon after the delivery, put the baby directly in skin to skin contact on the mother's abdomen even before cutting the cord. Immediate drying may not be required at this stage.
- If the baby does not start breathing or crying immediately within the first few seconds after birth, urgent resuscitation will have to be done on priority basis as per the guidelines.
- Then cut the cord after about one to three minutes or when cord pulsations stop naturally (Physiological cord cutting) and then quickly dry/ mop the baby with a clean warm towel and discard the wet towel and place the baby on mother's abdomen, who will crawl to the chest in between her breasts and attach on the breast nipple and start sucking. A mature baby can have a breast crawl seeking for the breast nipple on the mother's chest.
- Let the baby remain on the mother's chest in between her breasts for at least one to one and half hours continuously.

- **Soon after birth, breast feeding should be initiated as early as possible, within half to one hour for following reasons.**

- The newly born is very alert and active within the first half to one hour of birth.

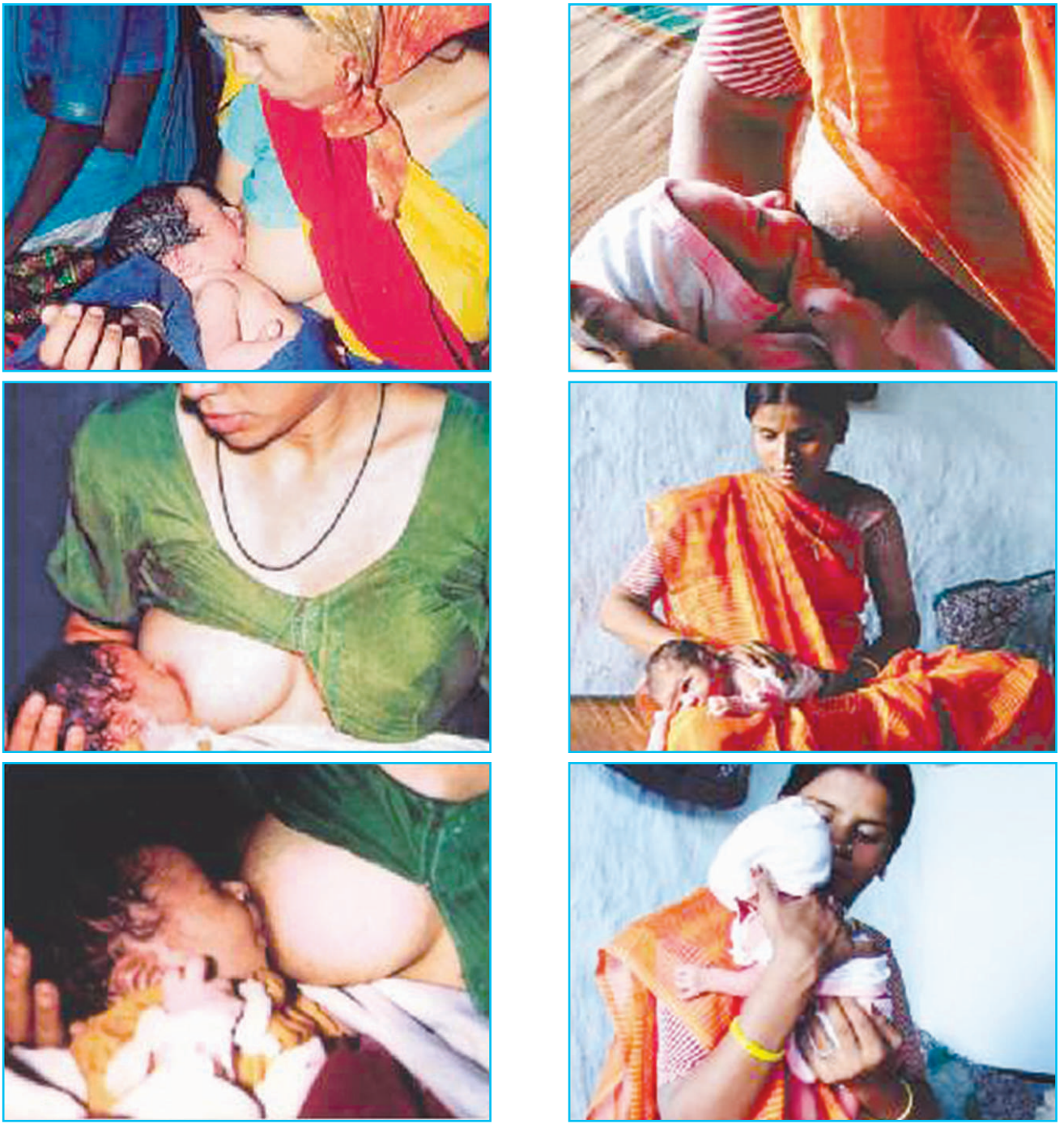


Fig. 10: Direct breastfeeding and burping

- In the immediate period after birth, baby's sucking is quite powerful and that increases the chances of successful breast feeding.
- Newborn gets colostrum through early breast milk, which contains many disease preventing factors, therefore is considered as the first vaccine for the newly born baby.
- There is strong bonding of love and sentiments between mother and baby.
- There is a rapid decrease in vaginal bleeding in the mother after delivery, rapid shrinking of uterus and reduction in breast engorgement and swelling.

➢ **Continue exclusive breast feeding till the baby completes six months of age.**

➢ **Do not give even water in between the feeds during first six months because.**

- By giving other liquids, the amount of breast milk taken by the baby reduces and nutrition suffers.
- Baby is liable to get serious infections through contaminated water (used for diluting the milk or cleaning the vessels of feeding) and develop loose motions.
- In the first six months after birth, even in hot summer months, the baby does not require additional water. Frequent breast feeding can be given, which has enough water content for the baby's requirement.

➢ **There is no need for prelacteal feeds.**

- Traditionally giving sugar water, jaggery, honey, ghee etc. as pre lacteal feeds, delays establishment of breast feeding and increases the chances of infection and loose motions and other serious illnesses in the baby.

➢ **Promote breast feeding by proper attachment or latching of the baby to breast.**

- By proper latching, nipple sores/swelling, therefore, breast engorgement and pain do not occur.
- During each feeding, the baby should feed on one breast till it is empty and then shifted to another breast. Next time, feeding should start from the other breast first.
- During 24 hours of a day, the newborn should breastfeed at least 10 to 12 times including regular night feeds. It should be given as many times as the baby indicates by signs of hunger. Some babies demand frequent feeds, whereas some babies may take less and only with some effort, take more. But forced feeding should not be done.

➢ **Proper method of holding the baby for breastfeeding (Positioning).**

- The whole body should be supported.
- The head, neck and back of the baby remain in straight line.
- Mother is comfortably positioned while sitting or lying down.
- Her eyes should be fixed on the baby.

➢ **Proper method of attaching the baby to mother's breast (Latching).**

Four signs of proper latching:

- Baby's mouth is wide open.
- The lower lip is turned outside.
- Child's chin is touching the mother's breast.
- The black areola around the breast nipple is mostly in the baby's mouth.

In short, we can remember following simple rules:

- **B to B:** Take the **baby to breast** rather than bringing the breast to baby by bending of mother which is very uncomfortable for prolonged breast feeding.
- **T to T:** Hold the baby in such a way that the baby's t**ummy remains on the mother's tummy**.
- **N to N:** Put the baby on the mother's breast so that the baby's **nose touches the mother's nipples**.

➢ **Factors that can influence proper breastfeeding:**

- Feeding given through bottle.
- Inexperienced mother.
- Mother does not have the support of an experienced person.

- Retracted nipples are often considered a problem for proper breastfeeding. But we should encourage the baby to suck on areola, the black area surrounding the nipple, rather than only on nipple. Retracted nipple is not a problem if proper latching on areola is achieved. Due to negative pressure created while sucking on the areola, the embedded nipple does come out.

➢ **In case, the baby is not properly latched, following problems can occur.**

- Mother gets sore nipples or cracked nipples and severe pain.
- Breast is not fully emptied leading to breast engorgement (Filled with too much of milk) and breast becomes very hard and difficult to suck and/or swelling, redness and pain develop further making breastfeeding difficult.
- Baby does not get enough milk to satisfy hunger and continues to suck frequently on nipples leading to cracks, bleeding and severe pain.
- Due to improper emptying, further breast milk secretion reduces, baby keeps crying, and does not feed well resulting in less weight gain.

➢ **Breast feed the baby as many times as it demands and even during nights because.**

- By proper latching and frequent breastfeeding more milk is produced.
- By demand feeding and frequent feeding, breast engorgement/swelling does not occur.
- Night feeding increases the secretion of breast milk producing hormone prolactin and the mother feels comfortable.

➢ **Do not give pacifiers or Bottle feeding.**

- By giving pacifiers/nipples, the baby has problems sucking on the breast.
- Chances of infections increase because of unhygienic handling of the pacifiers.

➢ **Gripe waters and various traditional herbal preparations etc. Not needed at all.**

➢ **What is to be done after breastfeeding?**

- After breastfeeding, the baby should be burped well by holding straight on mother's shoulders and patting gently on the baby's back.
- Only after the baby burps (takes out the swallowed wind), should the baby should be laid flat on his/her back.
- Before allowing the baby to lie down on its back (Supine position) the baby can be turned on its tummy (prone position) in such a way that the baby's nose is not being pressed and s/he is able to breathe comfortably and allowed to remain in that position for some time.
- Mother must observe her baby frequently, if the baby is put on the tummy to avoid suffocation.
- Keep the baby next to the mother in the same bed or continue in Kangaroo position, so that it is easier for frequent breastfeeding and the baby also remains warm.

➢ **The more the baby feeds, more breast milk will be produced.**

- If the mother is confident, healthy and calm while breastfeeding, the baby has no problems.

3.B.2 Feeding of unstable(sick) and too small babies (VLBWI/ELBWI):

(Babies with body weight less than 1500/1000g, often have cardio -respiratory problems, temperature instability, abdominal distension or serious acute illness such as asphyxia or sepsis).

a) Offer expressed breast milk by cup/spoon/ paladai etc.; (Provided IV fluids or Tube feeding is not possible and consider transfer to higher centre, if possible).

b) As the infant improves, put her /him directly on the breast to stimulate milk production.

c) Initiate KMC once the baby stabilizes or as early as possible.

(KMC/KP can be given even in many sick babies under supervision and guidance of experienced persons.).

Many preterm infants have feeding difficulties initially because of:

- Inability to coordinate suck, swallow and breathing.
- Immature and sluggish gut.
- Systemic illness.

Full term small for gestational age infants because of being weak or sick, may also experience:

- Poor attachment and sucking effort on the breast.
- Poor swallowing.
- Easy tiredness (And hence poor intake).
- Vomiting, regurgitation or abdominal distension.

➢ **Lower the birth weight, greater is the likelihood of feeding difficulties.**

- Most of the times, HBKMC is being continued for more days only for small babies who are either pre -term babies (Born before full term of 37 to 41weeks and six days of gestation as calculated from the first day of LMP) or those who are full term and yet have birth weight less than 2500g. At times, CHW may find it difficult to differentiate these categories according to their maturity. Therefore, in general, we can divide the babies according to their birth weight (wherever weighing is possible) in three broad categories and decide the method of feeding.

✓ **Category I: The babies with birth weight less than 1200g.**

✓ **Category II: The babies with birth weight more than 1200g and less than 1800g.**

✓ **Category III: The babies with birth weight more than 1800g but less than 2500g.**

Wherever weighing is not possible, the worker has to decide according to the baby's apparent size and behaviour of sucking, swallowing and breathing coordination.

✓ **The babies in category III, having weight more than 1800g,** are generally capable of **direct breastfeeding** like mature newborns, with good coordination of sucking, swallowing and breathing.

✓ **The babies in category I, having birth weight less than 1200g,** will mostly have to **start with expressed breast milk (EBM)**, being given with a cup, spoon or the traditional feeder "paladai". Some of these very small babies should ideally be given intravenous fluids or tube feeding in the first few days of life which can be given only in hospitals. Wherever it is not possible, the only available option will be feeding with expressed breast milk from mother. The baby can be shifted to direct breastfeeding as early as possible.

➢ **Feeding of category II babies with birth weight more than 1200g and less than 1800g:**

- The mode of feeding can depend on the baby's ability of having good coordination of sucking, swallowing, and breathing. Baby may be put directly on the mother's breast. If the baby is having good sucking efforts and coordination of sucking and swallowing,

direct breastfeeding can be continued. Sometimes it should be tried several times in the first two/ three days to judge the capacity of the baby for direct breastfeeding. So, in between, the baby may have to be given expressed breast milk directly with a cup, by spoon from cup or some suitable method. Some babies in this weight group do not have good coordination of sucking and swallowing for a longer time. In that case, feeding with EBM has to be continued for a longer time. The efforts should be to shift to direct breastfeeding as early as possible.

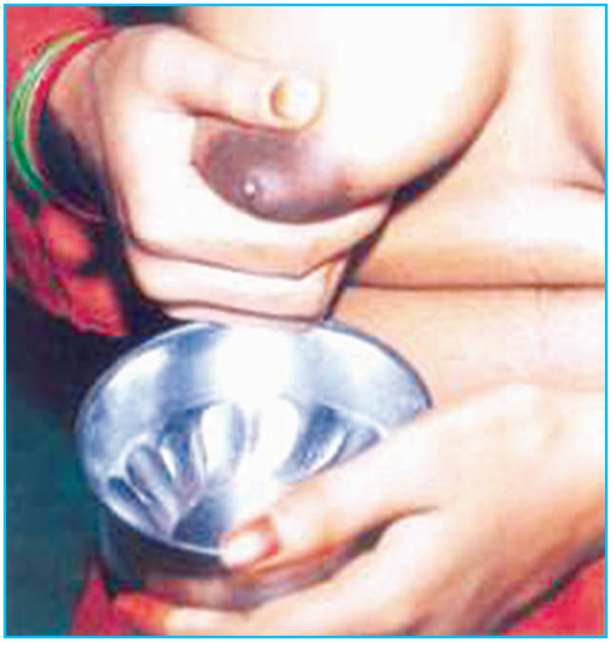
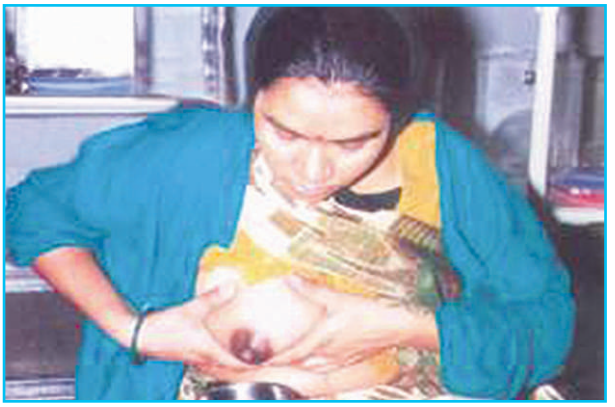


Figure 11: Collection of EBM

Figure 12: Paladai Feeding



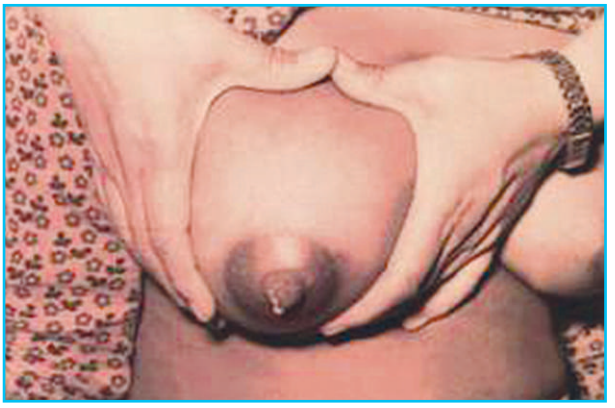


Fig. 13: Method of expressing breast milk

Figure 14: Spoon Feding

Every effort should be made to provide breast milk to LBWI.

(Either as direct breastfeeding or as expressed breast milk).

- **How often to feed?**

  All Term and stable newborns: (Who had a lusty cry soon after birth and apparently did not have any other problem or defect like cleft lip or palate, which might affect direct breastfeeding) Ideally these neonates must be put to mother's breast and feeding started as early as possible within half to one hour of birth. It will ensure colostrum feeding and no pre lacteal feeds are required).

  Other small babies: (with delayed cry, difficulty in breathing or some problem) may have to be given feeds as early as possible after birth once they are stabilized in terms of heart rate and respirations. First feed for very small babies may not be delayed for more than four hours after birth to ensure colostrum feeding. If for some reason feeding of breast milk is delayed in very small babies, problems may occur because of less energy and less sugar content in the baby's blood and the baby may get fits in the form of abnormal movements of body and limbs and eyes leading to brain damage and other complications. To avoid such serious immediate and long-term complications, the baby may be given either some donor mother milk/animal milk/ formula and attempts to feed its own mother's milk should continue.

During HBKMC, continued supervision and guidance to CHWs is not possible. Hence mothers may be advised to give breast milk alternatives in the beginning, only for very small and very premature babies, to avoid complications due to less sugar/energy in blood.

Very small babies should be given about 10 to 12 feeds within 24 hours at 1 to 2 hours interval including night feeds (which are very often missed) as per the signs of hunger.

- **The smaller the baby the smaller is the interval in between feeds.**

  In case of small babies/ very LBW/ very preterm babies, the feeding schedule may start clockwise at fixed time intervals and later gradually shift to demand feeding. Whenever top feeding is being given, the baby may be put to breast first and try for suckling and then top milk can be given. This will enable breast milk flow to continue and facilitate early direct breastfeeding.

- **What to do if mother's milk is not available or is less than the required amount?**

  All efforts must be made to have own mother's milk for baby's feeding.

  Ensure continued flow of breast milk in the mother who has a small baby. Because of the poor or no sucking effort by the LBWI (due to sickness, weakness or poor reflexes) and maternal anxiety, the breast milk output may remain low. Breast milk inadequacy must be prevented and tackled by frequent counselling of mother and her family members. In addition, breast milk should be expressed frequently (both during day and night) to provide EBM to the baby including during nights and help to increase the milk flow. The expressed milk can be stored in room air only for about 4 to six hours.

  (In refrigerators, in regular compartments, it can be stored for 24 hours and in a deep freezer, it can be kept for two to four weeks. In resource restricted regions this facility is generally not available).

- **Whenever, due to some reason, mother's own milk is not available or inadequate,**

other options may have to be tried in order of preference:

- **Donor mother's milk (Facility of breast milk banks are mostly not available in these regions) (Wet nursing if possible).**
- **Formula milk (Preterm formula may not be available easily).**
- **Processed dairy milk (May not be available in many regions).**
- **Animal milks like cow, buffalo, goat, camel etc.**

Except in the case of buffalo milk containing high fat, all other animal milk can be given after boiling well and without further dilution.

In case of buffalo milk, the cream has to be removed after boiling and cooling and then it can be given without any further dilution. Animal milk as substitutes are not very ideal. But in resource restricted situations, it could be the only available practical solution. In many places, nowadays processed dairy milk pouches are available, in which fat content is standardized and the milk is pasteurized and stored. This is a preferred option rather than directly collected animal milk which is not processed for fat content nor pasteurized.

➢ **How to decide whether a baby is getting adequate feed?**

- Regular proper weighing is the best method to decide about weight gain pattern and decide about the adequacy of feeds. But it has several difficulties in home situations.
- Good accurate weighing scales are not available. For monitoring the newborn's daily weight fluctuation in terms of a few grams like 5 to 10 g will have to be recorded. Such sensitive scales are not available for the use during home visits of HCPs.
- In case of home deliveries and even in some hospital deliveries, birth weight is not recorded or not possible soon after birth.
- In some cases, the recorded weight is not very accurate and makes further monitoring difficult.

When monitoring day-to-day weight is difficult, the worker may have to assess the adequacy of feeding by recording the approximate quantity of urine passed in previous 24 hours, cry of the baby, duration of quiet sleep, nature of stools the baby has passed and general well-being of the baby.

In case of newborns and more so in case of small babies, it is difficult to assess in the first few days as the baby may not pass urine within the first 24 to 48 hours some -times. In the first few days, the baby may be losing weight despite adequate feeds. Usually, the newborn babies lose up to 7% of the birth weight in the first few days of life and should not be exceeding 10% of birth weight at any time.

➢ **The smaller the size of the baby and the more premature the baby, longer time will be taken to regain the original birth weight.**

But latest by 10 to 15 days after birth, the baby should have regained his/her original birth weight. CHWs may have to rely more on detailed history of feeding and general behaviour of the baby to assess adequacy of feeding.

➢ **Remedial measures if breast feeding is suspected to be inadequate:**

- First of all, establish that breast milk is really inadequate and should not depend on the perception of the mother or her family members.
- Check for the correct technique of feeding in terms of positioning of the baby for breastfeeding and attachment on the breast including areola and not just nipple sucking.
- Make sure the night feeds are not missed. That is often the common reason for inadequate weight gain.

- Counsel mother and her family members and build confidence of mother that she can get adequate breast milk as per the needs of her baby.
- She can be educated to know about early signs of hunger cues in the baby.
- Regular follow up and reassurance must continue during every home visit of the CHW. If possible, weigh the baby regularly.

3.B.3 Skills required for feeding LBWI during HBKMC:

a) Manual expression of milk and its storage:

Stepwise instructions to mother:

- Wash your hands well with soap and water before expressing breast milk.
- Put a clean container under the breast for collecting milk.
- Massage the breasts gently towards the nipple.
- Place your thumb and index finger opposite each other just outside the dark circle around the nipple (Areola).
- Now press back towards your chest, then gently squeeze to release the milk.
- Repeat the same step in different positions around the dark circle surrounding the nipple (areola).
- If expressed milk cannot be given immediately after collection, it has to be stored and used when necessary. EBM can be kept at room temperature for at least 6 hours without significant risk of spoiling. Any milk not fed within 6 hours after expression, should be discarded if kept only at room temperature. In refrigerator (if available) EBM can be stored in the main compartment of a regular refrigerator (2 to 8degrees C) for 24 hours safely.

➢ **What precautions must be taken during and after feeds in very LBWI/ small babies with expressed breast milk?**

The mothers to have patience first while feeding the small babies. The babies may take a long time to complete feeding in one session.

Strict hand washing before feeding the baby and proper cleaning of cup, spoon or whatever utensils that are used for feeding must be done with soap and water to prevent infections and loose motions sometimes with vomiting.

Bottle feeding should be avoided all the time. In poor set up, infections, regurgitation of feeds and other complications are most likely with the use of bottles.

Breast milk secretion also suffers following nipple confusion during bottle feeding.

When cup/spoon/paladai or such top feeding is being given, all precautions must be taken to prevent regurgitation and aspiration.

b) Feeding with a cup

Following instructions are given to mother or caregiver who will be feeding with cup or with a spoon from cup

- The baby should be awake and held sitting upright on the caretaker's lap.
- Take a measured amount of milk in a wide mouth container with rounded edges. Directly apply this cup with rounded edges containing milk on the upper lip of the baby. The baby will open the mouth and actively start sucking the milk.

c) Feeding with spoon from cup

- Take a small quantity of milk from the container in a spoon.
- Hold the spoon so that it touches the upper lip of the infant and the mouth is opened.
- The baby may start sucking the milk or tilt the spoon so that milk reaches the infant's upper lip.
- If possible, allow the infant to take the milk by him/herself and do not pour it into the infant's mouth. Feed the infant slowly, make sure that milk already given, is swallowed fully before giving anymore.
- When the infant has had enough, S/he will close his/her mouth and will not take any more.
- **Do not force feed the infant**
- Estimate the amount of milk taken in the same way as for cup feeding.
- Feeds must be given from an angle of the mouth slowly. Direct pouring of large quantities in the baby's mouth should be avoided.
- The quantity of feed must be gradually increased.
- Soon after feeding a very LBWI, the baby should not be immediately put on his back (Supine). After feeding, at least for a short time, the baby can be lifted vertically for a few minutes (Burping done) and then the baby should be put on his/her tummy (Prone) or rolled on his/her left lateral side. The left lateral position may be given with the support of a small pillow or a roll of clothes even when the baby has to be left alone at home and mother has to go for a bath or some other purpose and there is no one to watch the baby.
- In case a baby gets regurgitation of feeds through nose or mouth, immediately the baby may be held vertically and with a clean cloth wrapped around the caretaker's index finger, the mouth and nose may be wiped clean and milk and other fluids should be removed. The baby may be put in a prone position for a short while and patted on the back to remove the aspirated milk from the baby's breathing passages.
- A mucus sucker may be given to the mother with proper instructions to use. It must be sterile, disposable and readily available for use in case of sudden aspirations of being fed by the baby.
- The CHW makes sure that mother knows the correct use of the same. (Her training must be proper, and the procedure must be directly observed carefully before allowing mother to do the suction with the mucus sucker) If the worker does not know about proper use or mother cannot be taught well about the use of mucus sucker, it should not be used at all.

3.C Kangaroo Discharge and Follow Up of newborn receiving HBKMC:

Early discharge and regular follow up together form the third most important component of KMC

This component needs to be promoted very much especially in the context of Home Based Newborn Care (HBNC) including KMC to achieve the successful outcome for the small and sick newborns.

Following aspects are discussed in this chapter:

- **Planned early discharge and random early discharge.**
- **General schedule for home visits of ASHA workers.**

- **Activities of the ASHA/HCPs during the home visits of a baby in HBKMC.**
- **Checklist for activities during follow up home visits of ASHA/CHWs.**
- **Suggested timetable of key activities of HBNC of ASHA workers with special reference to HBKMC including promotion of breastfeeding.**

(* Group I: Hospital delivered, and hospital cared for babies including KMC and discharged as per the hospital policy.

*** Group II: Hospital delivered babies but left early without satisfying the discharge criteria of the hospital.**

*** Group III: Home delivered and home cared for babies.)**

3.C.1 Planned early discharge of hospital delivered baby:

The component of discharge is relevant more for the group I babies who have delivered in the hospitals and received care including KMC and then discharged after fulfilling proper criteria laid down by the hospital. In case of KMC they get **planned early discharge** after making certain criteria for the continued safety of babies after leaving/ being discharged from the hospital.

These minimum criteria include the following:

- The preterm or LBWI infant is able to maintain body temperature with KMC and no external sources of additional heating are required.
- Baby is capable of oral feeding as direct breastfeeding or expressed breast milk.

  (Or other alternative top feeds)
- Before discharge, baby had satisfactory weight gain of at least 15 g/Kg /day for a minimum of three consecutive days.
- No other major problems in the baby.
- Mother is confident of continuing care of the small baby at home as guided in the hospital.
- Family members are willing to support the mother for KMC at home.

- **Random early discharge in hospital delivered baby:**

In Indian context, many mothers do have institutional deliveries, but after delivery, do not stay in the hospital for even the minimum required time for the care of small and weak babies due to several reasons and get early discharge and go home. This is what we describe as random early discharge in case of group II against the planned **early discharge** in case of group I. In case of group III who are home delivered, the considerations of discharge are not relevant.

The follow up of mother and baby with KMC should be done as a part of HBNC, when hospital visits are not possible, through home visits by an ASHA who are trained in KMC and breastfeeding and detection of danger signs. The follow up visits are mandatory-

- To monitor general wellbeing and adequate physical growth.
- To assess neurological development.
- To detect illness at an earlier stage and initiate proper management.
- To ensure that mother has understood all the instructions regarding administration of supplementary micronutrients like iron, calcium, phosphorus and vitamins.
- For routine immunization of the infant.
- To make sure that mother can recognize danger signs and seek prompt care at the earliest.

3.C.2 General schedule for home visits of ASHA workers is as follows:

- **Antenatal visits as per schedule.**
- **Postnatal visits.**

In case of home deliveries- seven visits.

In case of hospital deliveries- six visits.

- 1st visit - at the time of birth, if possible or as early as possible after birth within first 48 hours.
- 2nd visit- on 3rd day after birth.
- 3rd visit- 7th day after birth.
- 4th visit- 14th day after birth.
- 5th visit- 21st day after birth.
- 6th visit- 28th day after birth.
- 7th visit – 42nd day after birth.

3.C.3 Activities of the ASHA/CHWs during the home visits of a baby in HBKMC:

During every home visit, CHW should have a thorough check of the baby and carry out the following:

- **Reinforcement of knowledge and skills** required for essential newborn care.
- Depending on the stage of requirement, **counselling for the KMC** for initiation, continuation of breastfeeding.
- **For increasing the duration of KMC,** in those cases where KMC is to be continued.
- **To ensure support from family members as AKPs.**

  Breast feeding- technique, adequacy of breast feeds and weight gain.

Fig. 15: Home visits by health worker

- **In case of feeding with expressed breast milk, check for the technique of expression, collection and storage of milk, hygienic handling, quantity of milk expressed, frequency of feeds including night feeds, any other difficulties related to breast milk feeding.**
- **Adequacy of feeds can be judged by amount of urine passed after the first few days of birth, quality of sleep and stools and mainly by the weight gain pattern.**

  In the first few days the baby may be losing weight. At no stage, the weight loss should be more than 10% of birth weight. Generally, by 10th day after birth in case of a full term baby and by 14th day after birth in case of preterm baby, the birth weight is regained. Thereafter there is daily weight gain of about 15 to 20 g per KG of weight. Quite often, the CHW do not have good sensitive weighing scales suitable for monitoring small weight fluctuations of newborns. Hence their judgement is often based on the general well being of the baby and history of amount of urine passed and sleep and behaviour of the baby.

- **Correct method of hand washing and other infection prevention measures.**
- To make sure that mother and family members including AKP recollect about detection of **danger signs preferably in early stages** and aware of immediate actions to be taken.
- To explain to them about **the importance of regular follow** up at nearby hospitals.
- To guide them, wherever possible, **when and where to refer in case of emergency** or for special check -up of eyes and ear hearing and assessment for brain development and **how to transport the baby in direct skin to skin contact on chest (Kangaroo Position)** to suitable facility.
- **Education and empowerment of mother** regarding feeding problems and detecting signals at the early stages, infection control measures and her other questions and anxieties.
- To ensure proper **childcare practices** of the mother such as baby bath, body sponging, changing the clothes, diapers, play and stimulation activities.
- Advice regarding **Immunizations.**
- (If possible, advise regarding **micronutrient supplements to LBWI/PT** babies for Vitamin D, Iron, calcium and phosphorus as Multivitamin preparations and Iron and Calcium drops as learnt from the doctors or nurses during monthly health and nutrition meetings at village level).

During a follow -up visit:

- Weigh a baby.
- Obtain a history from mother.
- If she is doing KMC at home: Proper plotting of KMC duration by hours and number feeds and weight on KMC chart.
- Breastfeeding and other feeding options as appropriate.
- Whether there are any danger signs in the baby.
- Ask the mother if she has any other related concerns.
- Perform a general physical and systemic examination of the baby.
- Encourage mother and family members to continue KMC and prolong the duration as long as possible and advise them to seek immediate care when there are any danger signs.
- Make sure they know what actions to be taken immediately before taking the baby to hospital in case of apnoea, vomiting, aspiration of feeds etc, and avoid all possible delays in referral and how to carry the baby in skin-to-skin contact while travelling to the health centre. Mother should know where to go and whom to contact.
- Praise the mother for taking care of the baby and schedule the next visit.

Fig. 16: Steps of handwashing

3.C.4 Checklist for activities during follow up home visits of ASHA/CHWs.

Following components must be checked during the follow up visits:

KMC	* Check the KMC position. * Duration of direct skin to skin contact (history regarding KMC hr. per day). * Continuation of night KMC. * Filling up the KMC chart correctly. * Clothing. * Body temperature. * Support for the mother and baby from family. * Does the baby show any signs of KMC intolerance? * Is it time to wean the baby from KMC? (Usually around 40 weeks of gestational age or just before) depending on environmental temperature, encourage the mother and the family to continue KMC as much as possible.
Breastfeeding	* Is it exclusive? If the baby is on direct breastfeeding, during early visits, check for the proper positioning, latching and feeding during KMC; at the end, praise the mother and encourage her to continue breastfeeding. If she is giving expressed breast milk or top milk, ensure number of feeds, ensure regarding night feeds, amount at each feed and the technique of giving the milk. In case of expressed breast milk, check for the method of expression, collection and storage also. * Advise if there are any breast problems? • Inverted nipple. • Cracked nipple. • Engorged breast. • Abscess on breast tissue. • Any other. In case of top milk, hygienic handling during feeding also must be ensured. * If she is giving milk supplements, advise her on how to increase breastfeeding and decrease supplements. * Check for adequacy of feeding. * Ask about and look for any feeding problems and provide support. (*If the baby is taking formula supplements or other feeds, check their safety, adequacy; make sure that the family has enough supply).
Growth monitoring & Anthropometry	* Weigh the baby at every visit and compare weight gain from the last visit. If weight gain is adequate, i.e. at least 15g/kg/d. on average, praise the mother. If it is inadequate, ask and look for possible problems, causes and solutions; These are generally related to inadequate KMC, missing feeds at night, inadequate feeding or illness. (To check KMC hours/d and feeding amount for adequate daily weight gain, please refer to KMC chart if available). * Record on growth charts, if provided. * Head circumference may be recorded every week if possible. * Length may be recorded once in two weeks if possible.

Illness	* Physical and systemic examination of baby. * Ask and look for signs of any illness either reported by mother or not reported. * Manage any illness according to local protocols and guidelines. If required, help from ANM may be taken for Inj. Gentamicin or oral medications. * In cases not on exclusive breastfeeding, ask and look particularly for signs of diarrhea or any feeding problem.
Counselling	* Hygiene and infection prevention measures are advised **Do not miss the opportunity to reinforce about KMC, exclusive breastfeeding and mother's awareness of danger signs** **Counsel for hand washing and other infection prevention measures including those for COVID prevention** Discuss other aspects of care like baby bath, clothing, early stimulation etc.
Neurodevelopment & Neurosensory Assessment	* **Neurodevelopmental assessment**- Follow RBSK protocols in MCP card. * **Neurosensory assessment.** * **Arrange for**: • **Eye examination:** for the preterm babies for detection of Retinopathy of Prematurity (ROP) by third/fourth week after birth. • **Screening for Hearing assessment:** Clinical evaluation at 40 weeks of post menstrual age and in case questionable, repeat at 6 weeks of chronologic age.
Drugs	* If the infant has been prescribed any drugs from the hospital in case of group I or II babies, make sure the mother follows the advice and gets sufficient supplies. (e.g. Caffeine, antibiotics etc.) If possible preterm and small babies can get Vit D3, Calcium, Phosphate and Iron supplements from ANM.
Immunization	* Check that the baby is immunized as per the immunization schedule of GOI.
Mother's concerns	* Ask the mother about any other problem, including personal, household and social problems. * Try to discuss with family members also and find the best solution for all of them.
Next follow up visit	* Always schedule or confirm the next visit. * Do not miss the opportunity to check and advice on hygiene. * Reinforce the mother's awareness of danger signs that need prompt care.
Special Follow up visits (Wherever possible)	* If these are required for other medical or physical problems. * If abnormal neurodevelopment - encourage the mother to attend the special clinic and refer to Physiotherapy/Occupational therapy. * If the baby is found to be normal in terms of Growth & Development, encourage the mother to attend the special follow up clinic till one year of age to detect any deviation from normal in development. * If possible, USG skull at discharge and at 40 weeks of post menstrual age/ full term to rule out periventricular leukomalacia and other abnormalities for those who can go to hospital with these facilities. * X-ray or USG hip in all preterms at 3 mo. to rule out congenital dislocation of hip.)

CHAPTER FOUR

COMMUNICATION AND COUNSELLING FOR PROMOTING HBKMC

Introduction:

The World Health Organization defines counseling as a well-focused process, limited in time and specific, which uses the interaction to help people deal with their problems and respond in a proper way to specific difficulties in order to develop new coping strategies. Community health workers should learn the art of counselling properly.

➢ **During the sessions of communicating and counselling with mother and her family members, the counsellor should follow a few general rules.**

✓ **GALPAC**

- **Greet** them first and talk to them courteously.
- **Ask** questions in such a way that the client is willing to have a frank discussion with you.
- **Listen** to what they have to say with interest. Have direct eye to eye contact during conversations. While they are talking please do not divert your attention to some other activity like talking on phone, writing something or not being attentive.
- **Praise** first for whatever good thing they might have done. Do not start with some negative points. They should feel relaxed talking to you.
- **Advise** them what best they can do in the given situation and convey the messages the way they will understand.
- **Check** and confirm that they have understood your instructions properly and it is possible for them to do.

- **Effective counselling is the most important prerequisite for a successful KMC including promotion of early and exclusive breastfeeding.**

- Multiple sessions at multiple stages are recommended.
- It is very helpful to have responsible family members with the mother during counselling sessions. Encourage mother to bring her mother/mother-in-law, husband or any other responsible adult family member. It helps to build a positive attitude of the family and ensure family support to the mother, which is particularly crucial for home based KMC.
- Recognizing and supporting LBWI is very challenging in resource restricted regions. Poor access to health care and infrequent postnatal contacts with community healthcare workers necessitate that caregivers are equipped with basic knowledge on evidence based, life-saving neonatal care practices at home.
- It helps to overcome the socio-cultural barriers and anxiety regarding handling of a small, delicate LBW infant both by the mother and alternate care providers from the family.
- Also helps in developing better rapport with the CHW and ensuring better family support and involvement in the care of the newborn and regular follow up including immunizations.

➢ **Who should be counselled?**

- Antenatal and pre birth(Just before the birth of the baby) counselling to all the pregnant women and family members.
- Postnatal to the mother and other responsible family members (father, grandmothers, sister etc.)/ Alternate KMC providers (AKP).

Counselling is ideally done for an individual mother. Occasionally group sessions can be conducted in the community.

➢ **Following sessions are recommended for counselling:**

1) **Antenatal Counselling:**

(During antenatal period, during monthly nutrition and health days, or home visits of CHWs in the first trimester of pregnancy for distribution of iron folic acid tablets, tetanus or Td injections, health check-up sessions of mothers etc.). At that time, along with other topics of pregnancy and delivery, mother must be given following messages related to:

* What is KMC and its benefits.
* Need of KMC for LBW infants.
* Immediate early skin to skin contact of baby on mother's chest soon after delivery.
* Significance of promotion of breast crawl and early initiation of breastfeeding.

2) **Pre-Initiation counselling:**

One session should be held just before the infant is ready for KMC, along with responsible members of the family (Obligatory) (Along with routine essential newborn care including cord care, feeding, danger signals etc.)

- To develop good rapport, if not done already
- To alleviate any fear and clear any queries that they may have regarding care of newborn.

Messages during this counselling:

- What is KMC?
- Why should it be done? (Benefits).
- Who can provide KMC?
- How to provide KMC/- proper KMC position? Getting mother and baby ready.
- When and how long to provide KMC?
- Monitoring during KMC.
- Mother and her family members must be told about the possible danger signals and how to identify at the early stages and what actions should be taken immediately.

3A session of counseling is very much desirable during the time when mother is continuing with KMC. This will help in improving the quality of KMC in terms of prolonged duration and encourage mother's efforts to successfully continue KMC till the baby is ready to be weaned from KMC

CHAPTER FIVE

REPORTS OF HOME BASED KANGAROO MOTHER CARE

Health care workers are expected to include a few details about the practice of KMC also in their existing records and reports of Home Based Newborn Care (HBNC).

➢ Why are these records needed?

- A properly maintained quality record reflects the quality of services given.
- The information provides an idea about the progress made so far, what gaps need to be addressed?
- Also gives some ideas about why mothers are not able to comply and how we can help them.
- Following simple information can be easily documented by ASHA or ANM, who conduct the home visits for follow up of mothers with newborns as per their planned schedule. AWW can also help for recording the information.

➢ How many LBW babies are being given KMC in your service area?

- Number of total live births in your area/ total live births.
- Number of live babies whose birth weight is recorded.
- Of them, how many were having LBW (Birth weight less than 2500g.
- Of the total number of LBW babies, how many LBW babies were given KMC?
- On which day of life KMC was started for each baby?
- How many mothers could complete KMC for the baby?
- Till baby reaches 2500g of wt. /40 weeks after the first day of Last Menstrual Period (LMP).
- What is the average duration of KMC in 24 hours for each baby?
- Calculated as the total duration for 24 hours for two consecutive days prior to stopping KMC?.
- What was the reason for not completing KMC?
  - * Baby develop some illness or problems?
  - * Mother became ill or had some physical problems? (backache / Stitch pain? /FP operation? etc.)/Mother had family/social/cultural problems.
- What was the type of feeding during KMC: breastfeeding or expressed breast milk/top milk?
  - i) Type of feeding when the baby started on KMC?
  - ii) Type of feeding for at least two days prior to stopping KMC?
- Weight of the baby when started on KMC and when KMC was stopped.
- Whether the baby had any problems while being given KMC?

➢ This baseline information will be helpful

- To know about the progress , quality and outcome of KMC.
- To find out the gaps in terms of training, manpower, supplies etc.
- To help finding any remedial solutions.

To begin with, a simple home based format is being suggested here. With proper guidance, mothers/ family members with elementary education should be able to fill in on their own, which can be compiled by the ASHAs. Suggested formats for recording are given in the annexure.

CHAPTER SIX

PRACTICE OF HOME BASED KMC DURING COVID PANDEMIC

Background:

Almost since Dec. 2019, COVID 19 pandemic has devastated the world. It is once in a 100 year crisis and progress made in decades has been reversed. Despite many efforts, the pandemic continues in the world. Vaccines developed against the virus have been administered in India. Prevention strategies in terms of avoiding gathering of people, physical distancing, use of masks in public places, hand washing and Covid 19 vaccination need to be continued. Professional agencies like Federation of Obstetrics and Gynaecological Societies of India, Indian Academy of Pediatrics, National Neonatology Forum and Ministry of Health and Family Welfare, Government of India have maternal and newborn practices during Covid 19 pandemic.

- Considering the possible risk of baby getting infection and suffering because of this disease against the multiple problems that occur due to separating the baby from his/her mother, it has been observed that benefits of keeping the mother and her baby together and encouraging breastfeeding in all babies and KMC in LBW babies are much more and breastfeeding and KMC need to be encouraged. Only in a few situations that may not be possible. In that case decisions can be made depending on the given context.

Current guidelines:

- Irrespective of the status for COVID 19 positive, in all mothers soon after birth the newborn can be given for early direct skin to skin contact. All precautions for infection control must be strictly followed.
- All the mothers who are tested positive and having no symptoms or mild symptoms should continue with breastfeeding and KMC as required and can keep the baby with her. No reason to separate the baby from her/his mother.
- All the mothers who are having a history of a close positive contact at home or in the close family or neighbourhood also can continue with breastfeeding and KMC and continue to keep the baby with them.
- If many cases are being reported from the region and routine tests of all mothers are not done, it is better to treat each case like a positive case and take full precautions from the beginning rather than wait for the test and further confirmation.
- **All the precautions of respiratory hygiene, including use of masks, frequent hand wash, cleaning all the contact surfaces and all other infection prevention measures should continue in each and every case irrespective of mother's status of COVID test.**
- If the mother is tested positive and very sick, if possible, her breastmilk can be expressed and given to the baby. All the procedures including expression of breast milk, collection, storage and administration should be done with strict precautions of infection control.
- If mother is very sick and even expressed breast milk is not possible, the baby may be given alternate feeds like other known donor's milk, or animal milk whichever is available, in order of preference. Wherever possible standardized processed milk from known diaries as pouches should be preferred to raw animal milk. But in remote areas that option or formula milk may not be possible. Mother's own milk should be given as early as possible. At times attempts for re-lactation by the mother to continue breastfeeding after some break will be necessary.

- As far as possible, a sick mother or her baby should be taken to a hospital for further care. Only if that is not possible, management should continue at home with the help of ANMs.
- All the suspected cases or the contacts of suspected or positive cases should be reported for further appropriate measures by the concerned department of health.

➢ Infection prevention measures during COVID 19 pandemic

Most important advice is that all mothers, family members and health care providers should follow strict infection prevention measures.

- Mother must **wash her hands properly with soap and water at least for forty seconds** before picking up the baby or before and after touching any other objects. She must be trained to follow all the steps of handwashing methodically and her technique may be observed several times to make sure she does it well. (Mothers may not have a wristwatch or clock for timing the handwash. In that case a simple useful tip: she can recite some poem or her favourite religious or non -religious song/jingle or some count by which roughly 40 to 60 seconds are marked mentally)
- It is not required to wash the mother's breasts before feeding every time. A good daily bath and use of washed and preferably sun dried clothes is adequate for personal hygiene of mother or her helpers including AKPs, if there are. If a mother who is tested positive, accidentally happens to cough or sneeze on her chest, she has to wash her chest with soap and water before giving breast feeds. Otherwise, it is not necessary.
- **Mother (or those who take care of the baby) should wear masks when feeding the baby or offering KMC.** The use of mask must be proper. It must cover the nose and mouth including chin to prevent droplet infection. The masks can be prepared at home or procured. Generally, they are of double layered cotton material (Can be prepared at home from used clothes like bedsheets, sarees, handkerchiefs etc.) All the family members also should wear masks when coming near the mother or baby. Masks should be washed daily and can be reused. At least four masks should be there for the mother so that they can be frequently washed and used. Masks should not be used for the newborn baby and other children below five years of age in the family. It may be harmful.
- As far as possible, use of sanitizers which contain alcohol are to be avoided when small babies are being handled for breastfeeding. Only in situations where soap and water facilities are not available, sanitizers may be used.

Fig. 17: HBKMC during Covid times

- **Physical/ social distance to be practiced as much as possible** within homes, preferably a distance of at least 6 feet or at least minimum of 3 feet is maintained from visitors and even family members who are likely to be contacts.
- **Mother should follow other rules of cleanliness and infection prevention and control measures** such as keep minimum necessary items near her

and avoid cluttering with many items. Keep all the items clean and especially after someone handles them. (eg. Vessels, clothes, medicine bottles, papers, items for personal use etc.).

- **The health care provider also should observe all these rules** like wearing the mask during her home visits and even during her travel to the village. They should observe physical distancing from other persons and even mother as much as possible. She should preferably carry her own soap and sanitizer and wash her hands every time before entering for home visit. As far as possible soap and water should be used for hand wash.
- **It is also important to improve ventilation by using exhaust fans or promoting cross ventilation for prevention of Covid 19.**
- Avoid using public transport.
- Avoid contact with persons suffering from cough, fever, difficulty in breathing etc.
- Avoid touching the mouth, nose and eyes as much as possible.
- If you have a cough, fever or difficulty in breathing, immediately contact your doctor. Or visit the nearby hospital where all facilities for testing and management are available.
- During hospital stay, it is specially recommended to keep the mothers with COVID 19 positive status and their newborns together in a separate ward or place with some privacy. They should not be grouped together with other COVID positive persons in the same ward. It helps in many ways including promotion of successful exclusive breastfeeding in all cases and quality KMC for low birth weight babies.
- Postnatal anxiety and depression are common among parents and family members with COVID positive test, financial difficulties, social distancing and birth of a low birth weight or preterm baby. The family should be offered psychosocial support for handling the situation.
- If the newborn is ill, s/he requires specialized care in NICU. Mother must be allowed to visit her baby with proper IPC measures.

Fig. 18: KMC during Covid times

Fig. 19: KMC during Covid times

CHAPTER SEVEN

EXPERIENCE OF HOME BASED KMC IN GUJARAT AND MAHARASHTRA

A. Gujarat:

We introduced the Facility based KMC for the first time in India at the neonatology division of Civil hospital, Ahmedabad, as a part of an International multicentric study in the year 1993. The first KMC ward was created. The KMC program has continued and scaled up successfully since then.

In the year 2005, for the first time in India, Home based (Community based) KMC was introduced in the rural project of SEWA Rural, Zagadia, a reputed voluntary service organization, as a part of their project of home based newborn care. Following favourable experience over many years in that project, we introduced HB KMC through many other voluntary health care organizations of Gujarat working in rural areas.

In the year 2014 and 15, a systematic, well planned research project was conducted for one full year through five voluntary service organizations of Gujarat {SEWA Rural Jhagadia (Rural/Tribal), Tribhuvan Foundation, Anand (Rural), Bhansali trust, Sami block of ICDS (Rural), Gram Sewa trust, Kharel (Rural/Tribal) and JNPCT at Dharampur, a very backward tribal area} **to study the safety, feasibility and acceptability of HBKMC in resource restricted regions of Gujarat**. The study area covered 146 villages and a population of more than 2 lakhs, (97 deliveries with 102 LBWI including five sets of twins were included). Mothers' perception about KMC was collected through interviews. The results were very encouraging.

Majority of mothers expressed that they were very happy doing KMC and willing to keep their babies with them and if need be, they will be happy to advise and encourage other mothers for KMC and they will be ready to do KMC in subsequent deliveries also. A few mothers did have some minor problems. But most of them are easily manageable. We presented different aspects of this study in four international KMC conferences (Kigali, Rwanda, Trieste, Italy and Port Elizabeth, Cape Town, South Africa and Manila, Philippines) and in various national conferences in India.

Similar studies are also available from urban slums of Gujarat.

Indian Council of Medical Research conducted a similar multicentric study in Gujarat, Maharashtra and Odisha, and reported good results, "Community based Kangaroo Mother Care and Low Birth Weight babies." which was published in Indian Journal of Scientific Research.

HBKMC is continuing successfully in all these blocks in Gujarat with very good results and now coverage is gradually increasing. We have a draft guideline, job aids and teaching slides prepared in local languages of Gujarati and Oriya and recently one updated version in English for the state of Maharashtra.

A special issue of newsletter of KMC Foundation, India has been brought out on HBKMC in resource restricted regions of India including Gujarat with a special plea to promote home based KMC as a part of home based newborn care in deprived sections of the communities in India as soon as possible. In the current situation it has a very great potential to save many more newborns in our country.

Recently WHO has realized the significance of promotion of HBKMC in communities and have initiated multicentric pilot projects in

states of UP, Karnataka and Haryana. The study from Haryana has shown very encouraging results, acclaimed well and published in the reputed journal The Lancet.

A few case histories from Gujarat are given here which will highlight the situations in which HBKMC has been found to be not merely useful but also lifesaving! We now have many more such stories to share and have followed up data for many years on quite a few of these babies given HBKMC.

1. An extremely LBW baby weighing 600 grams alive and thrive following HBKMC.

A primi mother Sitaben had a spontaneous normal vaginal delivery in the very early hours of the day in a Government SNCU in a small district, near the city of Patan in Gujarat. and had an ELBW baby , the exact LMP not known. The baby cried well immediately and weighed only 600 grams at birth. The Nurse attended the delivery. The duty doctor was informed about the delivery of an ELBW baby. He did not expect this tiny baby girl to live long. So, he did not even examine the neonate and advised the family members to take the baby to a bigger hospital as facilities for the care of such a small baby were not available in that hospital. As the relatives expressed their inability to go to the bigger hospital even though all services were available free of cost, the doctor advised them to take the baby home. The village Anganwadi worker, trained for essential newborn care including KMC, at Sami ICDS project of Bhansali Trust, was told about the mother returning home with a very tiny baby. She immediately went to the house of Sitaben and advised her and her mother -in -law about KMC and breastfeeding. She counselled them and motivated them to take care of the baby as long as it is living. Luckily, mother-in-law agreed and started KMC and even made the mother also provide KMC. Initial few days expressed breast milk was given by a spoon from the cup and gradually shifted to direct breastfeeding. KMC continued for almost 6 to 8 hours per day and mother and her mother-in-law alternated for KMC. Vaccination of the baby was done. The baby was given KMC for almost 40 days and exclusive breast milk feeding continued. The AWW worker guided them throughout with multiple home visits. The baby is thriving well to date. Today the child is doing well and attending school. No neurologic or developmental problems have been noted so far.

Fig. 20: An extremely low birth weight baby saved through home based KMC

2. LBW twin babies saved following HBKMC: (Source: Tribhuvandas Foundation, Anand).

Twin babies of father Laljibhai and mother Manjuben.

Parents are very poor farm labourers. Twins were born at home with a birth weight of 1.2 Kg. and 1.6Kg weight. Due to economic constraints, they could not afford to lose their daily wages and take the twins to a bigger hospital even though the hospital was nearby and all the services were free of cost. The Community Health Worker advised the parents about KMC and breast feeding and had regular home visits. Father and mother both offered KMC by taking turns and breast feeding was given. Both the kids are thriving well without any neurological problem.

Fig. 21: LBW twins cared through HBKMC

3. An extremely LBW baby weighing 920 grams saved through HBKMC in the project areas of Sewa Rural, the rural-tribal block of Zagadia.

During home visits, the community health worker detected a very small baby weighing 920 grams. Parents were advised for hospitalization in SEWA Rural hospital, all services including transport free of cost. But parents could not agree because of their own problems. The CHW got instructions about KMC through the mobile app "M Techo" developed by the NGO for the Government of Gujarat. Accordingly, she advised the mother and the family. KMC and breast milk feeding were given and the baby had regular home visits by the CHW. The baby reported to be thriving well.

Fig. 22: ELBW saved through HBKMC

We have several such examples of home based KMC in poor families in remote resource constrained regions in communities where KMC including breast milk feeding have helped for the good nurture and well thriving.

B. Maharashtra:

In Maharashtra, the Department of Public Health has been leading the roll out of the Home Based KMC in 78 tribal blocks since 2019. The state level training of the trainers was conducted by the senior trainers of KMC Foundation of India, Department of Public Health, Government of Maharashtra and UNICEF on 5 December 2019. This was followed by the block level trainings, which were supported by UNICEF.

The 136,000 KMC bags were procured and 50,000 KMC Cards were printed utilizing funds from the National Health Mission. As per HBKMC report during 2020-21, home based KMC was provided to 42660 low birth weight newborn babies from 78 tribal blocks. In the case of 1369 babies, KMC was given by members other than the mother herself.

Fig. 23: Training of ASHAs for HBKMC in Maharashtra

Fig. 24: HBKMC in Gadhchiroli district of Maharashtra

Riya is a healthy and active child, sleeping comfortably as mother provides her for Kangaroo mother care. She was born at 8 months and was weighing only 1.7Kg at birth. Riya's mother, Geeta was living in Nagpur with her husband. When COVID 19 pandemic started, she and her husband came back to her village in the month of May 2020. She delivered a baby at the 8th month of her pregnancy at the local Primary Health Center. She was counselled on breastfeeding and KMC and was provided with KMC bags by Ms. Sulochana Marskolhe, ASHA, who continued to monitor the newborn during the HBNC visits. She encouraged Geeta and her family members for KMC. Riya is a beautiful child who turned 3 month old. She weighs 4.6 kilograms.

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ANNEXURES

ANNEXURE 1: SUGGESTED RECORDING & REPORTING FORMATS FOR HBKMC

A) HOME BASED DAILY RECORD OF NEWBORN

Name of Mother: _____

Name of Baby: _____ Date of Birth: _____

Place of Delivery: _____ Mode of Birth: _____

Diagnosis / Problems: _____

Date of Starting Home Care: _____

B) REPORTING FORMAT FOR HOME BASED KMC BY ASHAS

Name of Asha worker: _____

Address: _____

Sr. No.	Name of the Baby	Name of the Mother	DOB	Birth Weight	Gestational Age	Visit on which day after birth	Duration (hours) of KMC given every day	Breast feeding done every two hours?	Weight Gain Daily	Danger sign Yes/ No

C) CASE SUMMARY OF BABY WHO HAD KMC BY ASHA/CHW

Name of ASHA/CHW: _____

Address of Family: _____

_____

Serial Number: _____ Name of Mother: _____

Name of baby: _____

LMP: _____ Date of Birth: _____ Time: _____

Mode of Delivery N/CS/Assisted: _____

Ft/PT/LBW: _____ Early STSC in LR ☐ Y/ ☐ N EIBF ☐ Y/ ☐ N

Wt. at Birth: _____ Wt at start of KMC: _____

Wt. end of KMC: _____

Mode of feeding DBF/EBM Other At KMC start: _____ At KMC End: _____

Average duration of KMC per 24 hours: for last two days before stopping MC Any help by AKP?

_____

Any problem for baby before KMC? _____

_____

Any problem during KMC? _____

_____

Total number of visits by ASHA/CHW _____

Any problems noted during home visits _____

_____

KMC completed? ☐ Y/ ☐ N Spl Follow UP Neuro exam ☐ Y/ ☐ N

If no, what are the reasons? _____

_____

a) Problem in baby: _____

_____

b) Problem in Mother ILLness/personal/social reasons:

_____

ROP check-up ☐ Y/ ☐ N When and Where?

Hearing screening ☐ Y/ ☐ N When and where:

Any other comment: _____

_____

Signature of CHW: _____

D) HOME BASED KMC REPORT FORMAT FOR COMPILATION FROM SUB-CENTER / URBAN WARD TO DISTRICT LEVELS

Name of District/block/PHC/subcenter/urban ward (for compilation from lower to higher levels):																	
Month																	
Sl No	**Indicator**																
1	Total live births																
2	Out of total live birth, Low Birth Weight Children (Less than 2.5 kg)																
3	Out of Total Low Birth Weight Children how many received KMC at Facility																
4	Out of Total Low Birth Weight Children how many received KMC at Home																
5	Out of the children who received KMC at Home how many children receive KMC from a member other than Mother																
6	How many children received KMC more than 20 hours everyday																
7	How many children received KMC between 10 to 20 hours everyday																

D) HOME BASED KMC REPORT FORMAT FOR COMPILATION FROM SUB-CENTER / URBAN WARD TO DISTRICT LEVELS

Name of District/block/PHC/subcenter/urban ward (for compilation from lower to higher levels):																		
Month																		
Sl No	**Indicator**																	
8	How many children received KMC for less than 10 hours everyday																	
9	Out of toal children given KMC, how many had weight gain as per HBNC guidelines																	
10	Out of children who received KMC at Home how many children identified with danger signs																	
11	Out of low birth weight children how many mother counselled for KMC by ANM/MO																	
12	Out of the mother's who give KMC, how many mothers had difficulty in breastfeeding																	
13	Out of children who received KMC at Home how many children died at home or in facility																	

ANNEXURE 2: FREQUENTLY ASKED QUESTIONS (FAQs) ABOUT KMC

1) What is KMC?

KMC is a method of holding the baby on mother's chest in between her breasts so that mother and baby can have direct skin to skin, chest to chest or body contact- a loving body hug, which has several benefits to newborn, mother, community, hospital and ultimately to the nation.

2) Why is it called Kangaroo Mother Care?

This method of holding the baby in skin to skin contact and providing warmth, breastfeeding, promoting bonding and non-separation of mother and her baby are similar to the method of care the animal Kangaroo offers to its baby by keeping it in her pouch in the abdomen. The Paediatrician from Bogota, Columbia, Dr Edgar Ray conceptualized this method of care and named it Kangaroo Mother Carebecause of these similarities.

3) Does it mean that KMC has to be given only by the mother as the name suggests?

No, it does not mean that this method of care has to be given only by the mother. KMC includes three main components- Kangaroo Position (keeping the baby on mother's chest), Kangaroo Nutrition (Promoting feeding of the baby with exclusive breast milk either as direct breastfeeding or as expressed breast milk) and Kangaroo discharge and follow up (Planned early discharge and regularly scheduled follow up for breastfeeding, growth, Immunizations and neurodevelopment including neuro sensory and behavioural development even after KMC has been stopped. The "M" component indicates the significance attached to breast milk feeding in KMC and breast milk only mother can produce, hence the term KMC is conventionally accepted even when this time of care through skin to skin contact is offered by AKPs like father, grandparents, neighbour etc.

4) When will my baby, who has been started on KMC, be discharged from the hospital?

Your baby will be discharged with proper planning, when you are keeping the baby in KMC for a longer duration like almost the whole day with the help of your family members. Baby is breastfeeding well or you are able to express milk and feed the baby orally with the help of a small cup, spoon or traditional feeders like paladai. Baby is doing well on KMC and able to maintain body heat well and also starts gaining weight of about 15-20g/Kg body wt./day for at least three consecutive days. As a mother, you are quite confident of taking care of your baby at home as guided by doctors and the nurses. Your family members must assure all support for the care of your baby for giving KMC when needed, helping with daily chores at home and helping you to go to hospital for follow up visits as required.

5) What should be the weight of my baby at the time of discharge?

There are no fixed criteria for weight for discharge.

6) How long should KMC be done in a day?

KMC should be continued as long as possible, even up to 24 hours a day with the help of AKPs at home. One session should be for a minimum of continuous one hour of effective KMC (for ensuring one hour of effective skin to skin contact, KMC should be advised for at least one and half hours). It is not meant that mother

should stop KMC at the end of One and a half hour. She can continue as long as she is comfortable in one session for more than one hour also.

7) Why should KMC be given continuously for a minimum of one to one and half hours?

During KMC the baby gets a sound sleep and during that time the brain functions develop better. One sleep cycle is generally one hour. If the baby is disturbed in between the sleep cycle, the baby is stressed and the development of the brain is likely to suffer. To achieve one good hour of undisturbed sleep cycle, we advise for at least one and half hours taking into account some time taken for the mother and baby for adjusting initially on chest to chest contact and then baby to go for sound deep sleep.

8) What is the best time of day to do KMC?

KMC can be done all through the day and night.

9) If I am able to give KMC for only a few hours in a day, will it be of any benefit to the baby?

Definitely, the longer you can give KMC, more benefits will be there. But even a few hours of KMC also are of some benefit. So it is worth giving even a few hours in a day. Efforts must always continue to increase the sessions and total duration of KMC as early as possible and as much as possible. If you can keep a record of the number of hours you are giving KMC it will help you to improve further.

10) How should the baby be fed while on KMC?

Mother should try to directly breast feed her baby while providing KMC. In case the baby is too weak to suckle, breast milk should be expressed and given to the baby with a cup, spoon or paladai.

11) How many times a day should the baby be breastfed?

A LBW baby should be fed every 2 hours at least 12 times a day. Initial few days you may offer feed at decided time intervals. As the baby grows, after an initial few days ideally, you should be guided by the hunger cues of the baby and gradually shift to demand feeding.

12) Should the baby be fed at night too?

Yes, the night feeds should not be missed as milk output increases during night. Even when offering expressed breast milk, night feeds should not be missed, which is very often the case.

13) Doctor, I am really very scared to take such a small baby home. Will you please tell me what I should watch for and when I should bring the baby urgently?

Always make sure that the baby's nose is open and the baby is breathing comfortably. When baby is in Kangaroo position, (observe all the instructions as per the checklist given to you) keep a watch on baby's breathing and movements. In case of change in the pattern of breathing, stoppage of breathing or any change in the movement of the baby, contact a local healthcare provider immediately. In case of stoppage of breathing for more than 20 seconds at a stretch, first try to stimulate the baby by flicking on the sole of feet or rubbing on the back a few times. The baby will start breathing most of the time. Only after that, call for further help. Also watch for any feeding problems, baby feels too hot or cold on touch, yellow colouration of skin or eyes, any swelling or discharge from cord or eyes or abnormal behaviour or movements of hands and body (Convulsions), loose, watery motions, refusal to take feeds and any such abnormal presentations. In other words, when you feel that the baby is not doing

well, seek help from the health care worker or preferably go to the hospital, if possible. You may carry the baby in KMC position if possible, during transport.

14) What should I do if the baby stops breathing?

Stimulate the baby by flicking on the soles of feet or rubbing on the back of the baby to see whether the baby responds. If not, immediately call 108 and reach out to the health facility with an emergency paediatric unit. If frequent such episodes of stoppage of breathing occur in a baby, it will be useful to admit the baby in hospital for a few days.

15) What should I do if my baby appears lethargic or not taking feeds properly?

If the baby shows any signs mentioned earlier, inform ASHA or ANM or take the baby to the hospital.

16) What medicines should I give to the baby after bringing it home?

At the time of discharge from the hospital, doctors would have explained to you. Or else the ANM will tell you during health and nutrition days or during her home visit to you. You will need to give iron which helps for making blood, Vitamin D, calcium and phosphorus for making the bones of the baby stronger and if your baby has any other problem, she might be given suitable medicine according to the problem. The details of giving the medicine will be explained to you.

17) Till what age should I continue KMC?

The baby will decide the time of stopping KMC. This usually happens when the baby reaches around 37 to 41 weeks after LMP or weighs above 2500 grams. At this time, the baby starts kicking the abdomen or cries or fusses every time you try to keep the baby in kangaroo position. It means the baby does not require KMC anymore. For a few more weeks, the baby may like to be in Kangaroo position for a short while just before sleeping or soon after bath or during a cold environment.

18) Who can give KMC at home after discharge from hospital?

Apart from mother, any responsible and willing adult family member like husband, grandmother, aunt, or even a willing neighbour/friend can serve as Alternate KMC Provider (AKP). The AKP must observe all the precautions of safety and personal cleanliness including cutting the nails, remove ring, bangles, chains etc. have a good bath, wear clean washed clothes, proper handwashing and all possible measures of infection prevention. Know the correct technique of holding the baby in KP and feeding with expressed breast milk, if required. They must be able to watch for the early signs of danger and take suitable measures. They should not be smoking or taking alcohol or any drugs.

19) Can I do my household chores after going home with the baby?

If the baby is securely placed on your chest with the help of a dupatta or shawl or some special KMC bag or wrap, you can move about with the baby and carry on with simple domestic chores. During your movements you should always support the neck of the baby from behind to prevent sudden jerks and excessive bending of the neck in front or back. This may be very dangerous at times. Also support the bottom of the baby from below to prevent accidental slipping and fall. All strenuous work may be avoided. During that time help of AKP can be availed of, if available. If no help is available, it

will be safer to keep the baby in his/her bed properly covered and away from the direct draft of wind and then do the domestic work.

20) What precautions should be taken at home during KMC?

Please do not keep the baby horizontally in Kangaroo Position, do not handle the baby excessively, do not give bottle feeds, do not permit contact with any sick persons, do not give bath to the baby till weight gain above 2500 g is achieved, but only sponge the baby with soft, clean cotton cloth soaked with lukewarm water in a warm cozy place.

21) Can I use something to tie the baby to me?

Yes. A soft and strong, clean dupatta, shawl or such cloth can be used for securing the baby on mother's chest during KMC. It should not be tied too tightly. That may sometimes suffocate the baby. The use of specially prepared KMC bag or wrap is very helpful, if available. It adds to the safety and comfort of the baby and mother also feels secure to move around with the baby in KMC on direct skin to skin /chest to chest contact. But it is not a must.

22) Can I do KMC with my clothes on my chest?

No, mother/AKP cannot do KMC with blouse, shirt or any layer of clothing of the mother on their chest. This disrupts the direct skin to skin contact between mother/AKP and the baby and does not help for keeping the baby warm and get many other benefits.

23) My stitches hurt when I have to sit with the baby in KMC?

By keeping the baby on the mother's chest and reclining for about 35 to 45degrres while sitting, the stitches may not hurt. Mother can adjust herself to a position of comfort so that stitches may not hurt.

24) During summer I feel hot and uncomfortable when I keep the baby in KMC. What should I do?

If you feel hot/too warm and humid when the baby is kept in Kangaroo Position, you may cover the baby well and switch on the fan if available. If you perspire more, just wipe off the sweat over the chest with a clean dry cloth and then continue KMC.

25) Won't the baby feel hot?

No, the baby will not feel hot when kept in KMC. Rather they are predisposed to become cold due to the following reasons:(Specially the preterm babies)

* They have a higher ratio of skin surface to body weight.
* They have decreased subcutaneous fat with less insulation capacity.
* They have limited capacity to shiver and conserve body heat. In premature babies stores of a special type of brown fat is less developed and therefore body heat production is less.
* The small babies are unable to consume enough calories to provide nutrients for body heat production and growth.
* Oxygen consumption is limited in some preterm babies because of lung immaturity.
* There is increased heat loss due to extended posture and immature skin.

They tend to lose body heat easily due to several mechanisms.

26) What is the normal body temperature of the baby?

Normal body temperature of a newborn baby is 36.5 to 37.5 degrees C.

27) Can I do KMC, if my baby has fever?

Yes, KMC can be done even when the baby has a fever. If baby's body temperature increases by one degree C, the mother's body temperature decreases by 1 degree C. The reverse also can occur This is called thermal synchrony during KMC. In hot summer time when environmental temperature rises, many newborns also have high body temperature. In such situation, a few observers in the Indian set up have noted that KMC helps in preventing the rise of body temperature of the baby. More studies are to be undertaken to confirm these findings.

28) When can I give a bath to the baby?

Give a bath to the baby when the baby's weight reaches around 2500g, and no other problems are noted. Use lukewarm water for bath in a warm environment and dry the baby immediately.

29) If I have to interrupt KMC for a short duration, what precautions should I take?

The baby should be adequately clothed-head cap, socks, mittens and well covered body and kept in a clean, warm bed, in supine position/prone position with head turned to one side as shown by the CHW/ in hospital.

30) How can family members offer support for KMC?

A supportive family is a prerequisite for the successful KMC. Family should give psychological support and encouragement to the mother for KMC and give her privacy to put the baby in the KMC position. A healthy adult of the family can provide KMC to give mother some time off. Family members can take over other tasks of mother, so that she can devote exclusive time to her infant.They can help for regular follow up and take mother for special follow up.

31) What can be done if a family does not support the mother for providing KMC?

It is important for the whole family to be aware of all the benefits of KMC. Family should be counselled for this in the hospital where the baby was started on KMC or by ASHA or ANM at home. Family should be made to understand and contribute towards the wellbeing of the baby.

32) When do we need to have a repeat checkup for the baby?

You will be given a regular schedule of follow up depending on the condition of your baby. You will be told to come to the hospital as early as possible. Till the baby reaches about 37 weeks after LMP, twice a week checkup will be required. After that, till 40 weeks after LMP, and /or till wt. reaches above 2500g. at least once a week, a checkup will be required.

33) What checkup will be done during these visits?

They will check up the weight, length and the head circumference to make sure that the baby is getting adequate feeding and growing well. General checkup of the baby will be done to make sure that the baby does not have any problems. Suitable vaccinations will be done and if you have any concerns, that will be addressed. Then they will check up for brain development of the baby by doing a special examination. They will make sure you are giving

proper KMC and exclusive breastfeeding. Advice will be given for how to improve the quality of care better and also check up whether you are able to watch for the danger signals and know whom to contact and how to reach the doctor.

34) In case I am not able to go to the hospital for a repeat checkup, what should I do?

When hospital visits are not possible, you can call your hospital doctor, if available and consult for further care. If that is also difficult, then local CHW like ASHA or ANM can be contacted. Mostly, they will contact you and give advice regarding essential newborn care including KMC and breastfeeding and help you for further reference if some serious concern is there.

In case of preterm babies/or LBW babies with less than 1750g birth weight or those babies who had some serious problem and required oxygen treatment for a few days, special eye check-up (ROP) must be done before one month of age of the baby. This helps in taking prompt early treatment in case of some eye damage which may occur following oxygen treatment and prevent blindness in future. This is very important and if facilities are not available locally, all efforts must be done to visit bigger hospitals where such an expert facility is available.

Similarly, it is advisable to get a checkup for hearing done before 40 weeks of age from LMP. If some problem with hearing is detected early and suitable treatment given to the baby, long term problems including speech problems can be avoided. This facility for hearing checkup of the tiny babies is available only in very few hospitals. Your CHW may guide you for that.

In a few districts, developmental and early intervention centers (DEIC)have been started by health departments. Their help can be taken for the developmental checkup of the preterm and LBW babies. Your local CHW will be able to guide you and help for these special checkups for your small babies.

35) How can I travel with my small baby for hospital visits? Is it safe for my baby?

If you take proper precautions to cover your baby properly with cap, diaper, socks and mitten and cover well with blankets and constantly observe your baby during travel, it will be safe to travel with the baby. Always be with your baby during hospital visits. In case you are very sick and not able to accompany the baby, some responsible adult family member can carry the baby. In that case, please try to give expressed breast milk for feeding on the way in a clean container. If long distance travel is there in a vehicle, preferably the vehicle should be stopped and only then feeds should be given. This helps to avoid possible milk aspiration in a moving vehicle.

Carrying the baby in Kangaroo Position/KMC and breastfeeding is very safe during travel and ideal for the babies who are otherwise normal and healthy or mildly sick. Even for seriously ill babies, KMC during transport is much better particularly when a specially equipped transport team is not available. KMC transport helps to prevent body cooling, chances of infections and unnecessary jolts during travel leading to serious problems of head injuries and other complications.

ANNEXURE 3: KMC PRETEST (SAMPLE QUESTIONNAIRE)

Q. 1 : What does KMC stand for?

a. Skin to skin contact.

b. Prolonged skin to skin contact.

c. Kangaroo Method of Care.

d. Kangaroo Mother Care.

Q. 2 : Where did KMC start?

a. Australia.

b. England.

c. Colombia.

d. India.

Q. 3 : Why is KMC given to the Newborn?

a. To prevent hypothermia.

b. To prevent neonatal jaundice.

c. To prevent infections.

d. All of the above.

Q. 4 : Kangaroo Mother Care includes

a. Immediate skin to skin contact after birth of the baby.

b. Early and prolonged skin to skin contact for the baby.

c. A loving, systematic hug of the baby by mother.

d. A loving, systematic hug of the baby combined with breast milk feeding as much as possible and planned discharge and regular follow up.

Q. 5 : In Kangaroo Position, the baby should be placed

a. On mother's chest in between the breasts.

b. On mother's chest in between the breasts in as much vertical position as possible and lower limbs flexed in frog leg position.

c. On mother's chest in between the breasts so that baby's chest and abdomen are in contact with the mother's chest and baby's neck slightly extended to have open airway and eye to eye contact with the mother and limbs in frog like position.

d. Baby on mother's chest and feeding on breast.

Mention if the following statements are true (T) or false(F)

Q.6: KMC has to be given only by mothers.

Q.7: It is difficult to breastfeed while giving KMC.

Q.8: KMC can prevent neonatal infections.

Q.9: KMC is not required for term babies.

Q.10: KMC is not required in hot and humid weather.

Q.11: Mother cannot work while giving KMC.

Q.12: KMC can prevent only hypothermia in the baby.

Q.13: KMC helps with neurodevelopment.

Q.14: KMC can be given during neonatal transport.

Q.15: KMC cannot be given without special binders.

Q.16: Early skin to skin contact soon after delivery is the same as KMC.

Q.17: Home based KMC is not very ethical and safe.

Q.18: The longer the duration of KMC in a day the better is the effect on the baby.

Q.19: KMC can help in relieving mild to moderate pain in newborns.

Q.20: KMC helps in reducing neonatal mortality.

Q.21: KMC makes breastfeeding difficult.

Q.22: Home based KMC needs preparation in the facility.

Q.23: It is important to tell mothers about danger signals in their newborn .

Q.24: National guidelines help in promoting KMC in a country.

Q.25: Implementation of KMC at national level does not involve any expenses.

Answer Key to Pre-test

Q1-d, Q2-c, Q3- d, Q4-d, Q5-c, Q6-F, Q7-F, Q8-T, Q9-F, Q10-F, Q11-F, Q12-F, Q13-T, Q14-T, Q15-F, Q16-F, Q17-F, Q18-T, Q19-T, Q 20-T Q21-F, Q22-T, Q23-T, Q24- T, Q25-F

ANNEXURE 4: QUESTION BANK FOR SELF-LEARNING EXERCISE (AND FOR PRE AND POST-TESTS)

(Answer key given in the end)

Q.1. Which of the following statements correctly describes a well small baby?

a) Feeds by cup, stays warm with skin to skin care, has abnormal movements.

b) Feeds by cup, stays warm with skin to skin care, weighs 1600g.

c) Breastfeds poorly, breathes with difficulty, maintains temperature with KMC.

d) Feeds by cup, weighs 1200g, maintains temperature only when KMC is given.

Q.2. Which of the following is an important step in the care of a small baby?

a) Teaching the mother to give bath to baby and keep the baby clean and dry.

b) Giving the small baby lots of time in early morning sunlight.

c) Preventing infection by washing hands before touching the baby.

d) Weighing the small baby twice a day.

Q.3. Shortly after birth, the feet of the baby with 1800g weight feel cold. But the abdomen is warm to touch. After placing the baby in Kangaroo position, the baby's temperature remains the same. Which of the following actions should be taken?

a) Place the baby in sunlight.

b) Bathe the baby in warm water.

c) Call the health worker.

d) Remove the wet diaper and cover the mother and baby in skin to skin on chest with a blanket.

Q.4. How many feeds should a small baby receive in a day?

a) Two to Four.

b) Eight to Twelve.

c) Five to Six.

d) Twenty-Four.

Q.5. Which of the following indicates feeding intolerance and the need for advanced care?

a) Spitting up small amounts.

b) Tense abdominal distension.

c) Passing stools 6 to 8 times a day.

d) Crying before each feeding.

Q.6. When should the mother or other providers wash their hands in order to protect a small baby?

a) Before touching the baby and before preparing a feeding.

b) Before greeting the family.

c) Before leaving home for follow up of the baby.

d) Before preparing baby's bed.

Q.7. A small baby needs to be referred for advanced care to a hospital one hour away. What should you do to prepare the baby for transport?

a) Change the clothes of the baby and keep expressed breast milk ready to feed on the way.

b) Communicate with health care providers at the receiving facility and the family, and prepare a referral note.

c) Mother can rest at home. Relatives can take the baby for further care.

d) Baby to be carried in skin to skin position during travel by mother or any helpers from the family.

Q.8. Baby of Ganga weighs 1200 g after one hour of birth He is more likely to have a problem with

a) Low blood sugar.

b) Warmth.

c) Infections.

d) All of the above.

Q.9. Baby of Anjana has a birth weight of 1400g. He will benefit most from:

a) A small amount of sugar water in the first day of life.

b) Prolonged skin to skin contact on mother's chest.

c) Antibiotics by injection.

d) Cord care by applying medicines on the cut stump to prevent infection.

Q.10. Kangaroo Mother Care

a) Should be given only by the mother.

b) Should only be given in hospital under the direct guidance of doctors.

c) Both a and b.

d) Is a natural method for caring for LBW infants.

Q.11. The most important advantage of KMC compared to conventional care include:

a) Can be done by providers if mothers are busy.

b) Similar cost to the client.

c) Longer duration of exclusive breastfeeding.

d) It is easier for mother.

Q.12. Baby Leela was born at home and is now being cared for with the KMC method. She is able to take direct breastfeeding. But becomes tired frequently. Her weight is not increasing. In order to ensure enough nourishment to the baby the ASHA worker teaches the mother to:

a) Give goat milk by paladai.

b) Bottle feed expressed breast milk.

c) Give sugar water in between.

d) Give expressed breast milk by cup.

Q.13. While observing a mother expressing breast milk, the doctor notices that she massages the breast from the outside toward the nipple. The doctor encourages the mother to:

a) Massage the breast in the opposite direction.

b) Massage both the breasts at the same time.

c) Continue the correct technique.

d) All of the above.

Q.14. Danger signs in LBW babies are:

a) Different than for normal weight babies.

b) Can be mostly managed at home.

c) Serious and include feeding and breathing problems.

d) Can be detected only by the nurses and doctors.

Q.15. Early feeding of LBW babies with only breast milk can result in:

a) More dehydration and eventual hypoglycemia.

b) Superior rates of weight gain.

c) High incidence of vomiting and diarrhoea in preterm babies.

d) Slow gastric emptying in babies less than 37 weeks.

Q.16. Essential newborn care for ALL babies, regardless of weight, should include which one of the following?

a) Cord stump should be kept clean and dry.

b) Intermittent KMC.

c) Preventive drugs for malaria.

d) All of the above.

Q.17. A mother has been practising KMC at home for four weeks. Her baby now weighs 2500grams. When she returns for a follow - up visit, the doctor advises her that she can:

a) Continue KMC until the baby gains more weight.

b) Discontinue KMC if the baby is otherwise well, but fusses when kept in kangaroo position.

c) Return after one week for follow up.

d) Baby has to be sent for check up for ROP by specialist doctor.

Q.18. During home visit the CHW finds the baby is not taking feeds and appears unconscious. She should encourage following except:

a) Encourage mother to express breast milk in a bottle to feed on the way to hospital.

b) The mother should keep a hot water bottle wrapped in cloth next to baby to keep the baby warm on the way.

c) The mother should carry the baby in skin to skin contact on her chest during travel.

d) The mother or her helper should ensure that the baby is periodically given sugar water on the way.

Q.19. How long should the baby be given only breast feeding?

a) First four months of life.

b) First six months of life.

c) As long as the mother wishes.

d) As long as the baby can take.

Q.20. During hot summer months, the baby of Meena has developed a fever. Baby is breastfeeding well. How will you manage this child?

a) Arrange for ambulance to take to hospital.

b) Call the ANM to give Inj. Gentamicin.

c) Advise KMC and continue breastfeeding.

d) KMC cannot be given when the baby has fever.

- **Indicate true T or false F in the following statements**

Q.21. Ideally Kangaroo Mother Care has three major components ie, Kangaroo Position, Kangaroo Nutrition and Kangaroo Discharge.

Q.22. Kangaroo Mother Care can be given only by mother as suggested by the name.

Q.23. Hair on father's chest is not a barrier for giving skin to skin contact on father's chest.

Q.24. Soon after birth, for baby of Nirmala, cord was cut immediately, the baby was dried well by a clean dry towel, the wet towel was removed, the baby was covered well and kept in a separate cradle. This is the correct sequence of caring for the baby in the first few minutes after birth.

Q.25. Mother Hasina had twins. One baby had to be given top feeds as mother cannot get enough milk for two babies .

Q.26. Baby of Leela is delivered by Caesarean section and it is not possible to start immediate skin to skin contact on the mother's chest and to start breastfeeding within one hour of birth.

Q.27. Expressed breast milk can be stored in room temperature for about ten hours.

Q.28. Zero separation of mother and the newborn baby helps in improving the neuroprotection, early stabilization of physiological parameters, and early start for successful breastfeeding.

Q.29. Baby of Glory had to be given a heel prick for collecting blood for investigations. Mother kept her baby in KMC.It is good for the baby.

Q.30. The best place for care of the preterm baby is the mother's chest.

Answer Key:

Q1-b, Q2- C, Q3- d, Q4- b, Q5-b, Q6- a, Q7- b and d, Q8- d, Q9-b, Q10-d, Q11-c, Q12-d, Q13-c. Q14- c, Q15-b, Q16- a, Q17- b, Q18-b, Q19-b, Q20-c, Q21-T, Q22-F, Q23- T, Q 24-F, Q25-F, Q26- F, Q27- F, Q28- T, Q29-T, Q30- T

ANNEXURE 5: TRAINING FOR KMC SUGGESTED AGENDA FOR TRAINING CHWs FOR HBKMC

It can be as a continuous program for one or two days (Preferable) or split into few sessions a day and spread over a few days. or one full day program and reinforcement again during monthly meetings.

(One session each time); (It should be always emphasized that KMC is one part of essential care of the newborns with special emphasis on care of LBWI).

Session I: Introduction -30 minutes

- ❖ Welcome to the program and objectives of the training.
- ❖ Introduction of participants.
- ❖ Pretest.
    - Magnitude of problem of new -born care in India and challenges.
    - Definitions and classifications of the newborns.
    - Basic principles of care of new-borns with special reference to LBWI including preterm babies.

Session II: Basics and benefits of KMC- 45 minutes

- ❖ What is KMC? Origin of KMC.
    - Benefits of KMC.
    - Benefits to baby, mother, family, society, hospital and nation.
    - Basics of KMC- Definition, Description, Components, Scope.

Duration in each session, Types (Intermittent, Continuous), when to stop and other details.

Session III: Practical aspects of KMC

- Kangaroo Position and hands on demonstration and video- 90 minutes.

(a loving hug between the neonate and the mother or Alternate KMC Provider AKP).

- Initial counselling with mother and her family members.

Advanced preparations for HBKMC

- Collecting the supplies.
- Selecting and preparing the place.

Immediate preparations just before putting the baby on KP

- Preparing the neonate.
- Preparing the mother.
- Actual positioning the baby on mother's chest and the precautions to be taken (Check list).
- Monitoring during Kangaroo position.
- Identification of danger signals as early as possible.
- Training the AKP also for KMC.

Practice with dolls; (Video demonstration and visit to KMC mother if possible).

Session IV: KMC Nutrition –Important considerations

Promotion of exclusive breast milk feeding as far as possible and other alternatives as possible-

Discussion and video presentation- 90 minutes.

- Golden rules of breastfeeding (early initiation, exclusive breastfeeding for first six months of life.
- What to feed? How to feed? How much to feed? How often to feed? How to assess adequacy of feeds? Etc.
- Supplementation of Micronutrients.

- Alternatives to mother's own milk (when absolutely necessary).
- Technique of Expressed breast milk expression, collection, storage and administration by different modes ie cup, spoon, paladai etc.
- Methods to sustain lactation when direct breastfeeding is not possible and only EBM has to be given.
- Hygienic handling of breast milk feeding and top feeding.
- Assessment for adequacy of feeding.
- Skills for collecting EBM and different methods of feeding can be shown by video clips; Technique of handwashing by demonstration; Technique of weighing the baby by demonstration.

Session V: Regular follow up of KMC babies-30 minutes

- Why is follow up important?
- Home based follow up frequency and checklist of activities during each follow up visit for both baby and mother.
- If possible, facility based regular follow up is ideal; If not possible, at least for special follow up for neurological assessment, ROP and hearing screening, follow up at facility.
- Routine follow up includes complete examination of the baby, assessment of breastfeeding, growth, advice for vaccinations, and any other concern of mother, checkup for danger signals if any.
- How to establish link with the facility and notes and other details of referral and transfer/ transport including skin to skin contact during transport.

Session VI: Recording and reporting about KMC and use of MCP card-30 minutes

- Why is recording important?
- Proper method of filling the records and reports.

Session VII: Communication and Counselling for improving the quality of KMC- 30 minutes

- Basic objectives and significance of communication and counselling.
- Basic principles of counselling – Greet, Ask, Listen, Praise, Advise and Communicate (GALPAC).
- When to counsel? What points should be emphasized during each session?
- Multiple stages of counselling:

❖ During Antenatal care; * before delivery and just before initiating KMC.

- During the practice of KMC.
- During follow up home visits after completion of KMC.

Session VIII: Open house discussion on barriers and enablers /(problems and possible solutions) for practice of HB KMC – 30 minutes

Introduction, objectives of the workshop, Pre-test; Post-test, certificates, valedictory etc.- 45 minutes.

Two tea breaks and one lunch break—total one hour.

(If it is a continuous one day program)

Total duration of minimum 8 hours.

PPT, Video, guidelines/module/ charts etc. will be used during training.

List of skills to be checked at the end of the training:

- Technique of holding a small/ preterm baby and the precautions while handling a LBW baby.
- Technique of weighing a small baby accurately.
- Drying and wrapping the baby.
- Preparing a clean well -ventilated place for HBKMC.
- Collecting the needed supplies.
- Preparing the baby for Kangaroo positioning
- Use of KMC bag/ wrap, if available.
- Demonstration of preparing washable,re - usable cloth diapers for the baby.
- Kangaroo position.
- Keeping the baby warm and clean when not on skin to skin contact on mother's (AKP's) chest.
- Monitoring the baby and early detection of danger signals and immediate actions to be taken.
- Positioning and latching for breastfeeding.
- Technique of hand washing and other infection prevention measures.
- Technique of Expression of breast milk, collection, storage and administration hygienically.
- Noting down the emergency ambulance service number/ name, address, directions/route, mobile number/phone number of the referral hospital or the doctor, List of danger signals, Mamta card or mother and child protection card (MCP card) and how to use them.
- Carrying the baby in Kangaroo position during referral visits to hospital or other places.

Reference materials:

- Manual for HBKMC for CHWs (by aKMCF and others).
- Training charts and videos (by KMCF and others).

** **MOHFW GOI publications:**

* Guidelines for KMC and optimal feeding for LBWI.
* Guidelines for Home based newborn care.
* NSSK manual.
* ASHA training booklets.
* IYCF training module.
* Mother and Child protection Card.
* Manual on early child development/care during first 1000 days.
* MCP card.

ANNEXURE 6: BUDGET FOR HB KMC ROLL OUT IN A DISTRICT (PROPOSED FOR 100 TRAINEES)

Sr.	Name of the item	Unit cost Rupees	Total units	Total cost (INR)
1.	One day training of block level trainers (MOs/Block Community Mobilizers/District community mobilizers)			
a.	Travel@Rs.500/person for 100 persons	500	100	50,000
b.	Lunch/Tea @Rs. 200 per person for 100 persons	200	100	20,000
c.	Honorarium for 2 trainers (@ Rs. 2000/per trainer)	2000	2	4000
2.	One day training of all ASHAs/ASHA facilitators			
A.	Travel@Rs.100/person for 1000 persons	100	1000	100,000
B.	Lunch/Tea@Rs.200 per person for 1000 persons	200	1000	200,000
3.	KMC Bags			
a	10,000 KMC bags@Rs.50 per bag	50	10,000	500,000
b	Printing of reporting formats		26,000	26,000
c	Health education and training materials	150	100	15000
d	Incidental Expenses	50	100	5000
	TOTAL			**9,20,000**

ANNEXURE 7: ADDITIONAL RESOURCES (7.1 IMPORTANT SKILLS FOR USE OF SIMPLE INSTRUMENTS)

Recording of the weight of the newborn:

For use in the community very accurate scales reading a minimum of 10 grams should be available. They must be easy to use and easy to carry during home visits. Currently available scales are not very useful for monitoring the progress in newborns and particularly small babies who are being given KMC.

Generally, two types are available:

1) Infant weighing scales with pans.
2) Infant weighing sling scales with hook and bag.

Using infant weighing scales with a pan:

Usually a minimum of 100 or a few with 50 grams accuracy are available.

- Ensure the weighing machine is placed on a flat surface and the pan is placed centrally.
- Adjust the scale to zero each time before recording the weight.
- Place a clean towel or clean paper on the pan.
- Adjust the setting to zero.
- Before undressing the newborn, make sure that the room temperature is maintained well.
- Undress and place the baby on the weighing pan.
- Make sure that the baby is placed centrally on the pan.
- Record the reading on the case notes with mother and your register.
- Inform the mother about baby's weight.
- Remove the baby from the weighing scale and dress back quickly.
- Remove the used towel or paper.
- Clean the pan if it is soiled.

Better method suggested:

- Do not undress the baby; Weigh the baby with the clothes.
- Then undress the baby and quickly transfer the baby and in another set of warm clean clothes and cover well immediately.
- Leave the original baby clothes on the weighing pan and weigh only the clothes.
- Deduct the weight of the clothes from that of the total weight of the baby with the clothes and get the actual weight of the baby.
- Advantages of this method: No need to undress the baby and expose the baby on weighing scale.
- In case, the baby passes urine or stools while recording the weight, that remains in the left out clothes on the weighing pan and even helps for accurate weight calculation.
- Even in hospitals this method is very useful and safe for the baby.
- This method is very useful especially for very small babies and when digital scales are used.
- Strongly recommended for use in community for LBW and preterm babies.

Use of colour coded sling weighing scale:

- Hold the scale by the top bar, keeping the adjustment knob at eye level.
- Turn the screw until "0" is visible.
- Remove sling from the hook and place it on a clean cloth.
- Place baby in the sling with minimum clothes on and put the sling back on the hook.
- Hold the top bar carefully, lift the scale and sling along with the baby, until the knob is at eye level.
- Read the weight and record in register.
- Gently unhook the sling with baby.

- Remove the baby from sling and hand over the baby to mother.
- Record the weight and inform the mother.
- If the baby is born 1-2 months early or weighs less than 1500g. refer to a facility for admission.
- If weight is not possible and baby looks very small, follow the guidelines for care of LBW baby at home by continuing KMC, keeping the baby warm and feeding with expressed breast milk till baby is ready for breastfeeding. Proper handwashing and infection prevention measures must be practised.

Recording of axillary temperature of the baby:

Normal Temperature in a newborn is 36.5-37.4 degrees Celsius. Accurate recording of temperature is particularly desired when the baby is

- Sick.
- Low birth weight / Preterm.
- When baby is suspected to be cold or very warm to touch.
- When the baby is being given warmth by keeping in KMC.
- When feet of the baby felt cold to touch.
- When the baby is being cooled for having high body temperature when ill or during peak of the summer with very hot environmental temperature or covered with many layers of clothing.

When accurate temperature is needed, use of a thermometer is needed. The Health worker may carry one or even the family may have one. A temperature taken in the axilla (under the armpit) is one of the safest methods to record the temperature.

The procedure of recording the axillary temperature.

Precautions to be taken:

- The worker should wash hands before recording a baby's temperature.
- Keep the baby warm throughout the procedure.
- The armpit of the baby should be cleaned and dried before taking the temperature.
- Make sure the thermometer is wiped and clean.

Steps:

- Use digital thermometer.
- Place the tip of the thermometer under the baby's arm, in the middle of the armpit against the bare skin.
- Gently hold the baby's arm against the body.
- Keep the thermometer in place at least for three minutes or till it beeps.
- Remove the thermometer and read the temperature.
- Keep the thermometer in a sterile container after wiping it clean preferably with spirit swab if available or with soap and water.
- Record the temperature in baby's case notes with mother and records with the worker.
- Whenever thermometer use is not possible, temperature assessment can be done by touch (Palpatory) method, which is already described in detail.

(** When the baby remains persistently very cold (Both feet and abdomen feel cold to touch and do not improve with simple measures like covering the body and hospital transfer is not likely or delayed, the following method can be tried.

In such difficult situation at homes, if possible, a cotton bundle of cloth can be warmed by rubbing on a heated thick iron pan ("tawa" (used in Indian homes for making chapati/roti) and the heated pad of cloth is first tested for the degree of heat by rubbing on mother's/care takers' own cheek and if found tolerable, then applied on baby's body to rewarm the baby. This may have to be repeated several times to rewarm the baby adequately. Care must be taken to act quickly and safely so as not to cause burns on the baby's delicate chest and abdomen and also to rewarm the baby's body.

(Recommended only in desperate cases where no other alternatives are possible.)

ANNEXURE 7: ADDITIONAL RESOURCES (7.2 CLASSIFICATION OF THE NEWBORNS IN VIEW OF FURTHER MANAGEMENT)

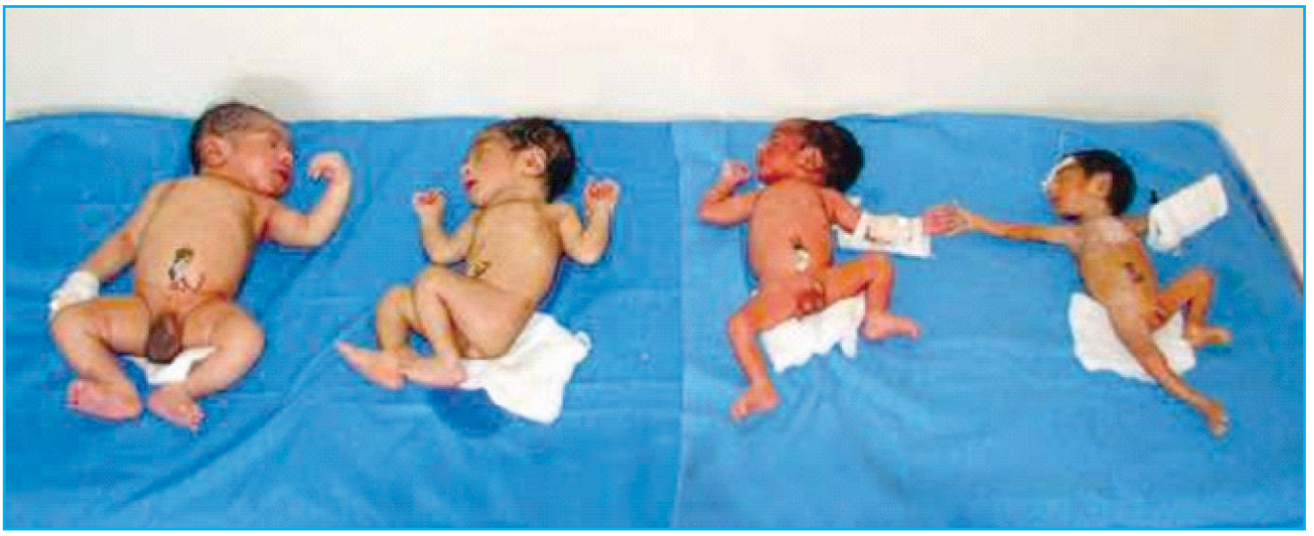


Fig. 25: Different groups of neonates

Sr. No.	Signs	Full term (LBW) baby	Pre-term baby
1	Creases on the soles of feet	Deep and covering the whole sole.	Lighter and often only in the anterior portions of the foot.
2	Ears	Fully developed. Normal shape & firm.	Flattened, folded, shapeless, soft and easy to bend.
3	Breasts	Well developed. Black, well pigmented areola around the nipple.	Not so well developed. Small nipple and less pigmented, light coloured areola.
4	Genitalia	Well-developed Creases on the overlying skin. Dark colored skin.	Less developed Less creases. Light colored skin.
5	Hair on scalp	Dense / Thick	Sparse.
6	Lanugo hair on the body	Usually only on the shoulders and very less.	All over the shoulder and soft hair.
7	Nails on fingers	Well developed	Less developed.
8	Mode of Breast	Can suck and swallow well.	Difficulty in continuous sucking and not so well co-ordinated sucking, swallowing.
9	Crying	Vigorous	Weak.
10	General appearance	Well flexed joints of hands and feet (at elbow, wrist, hip, knee). Vigorous movements when awake, Good tone of muscles.	Hands & feet (bending) flexion may not be complete. Less activities and movements Muscles tone much less.

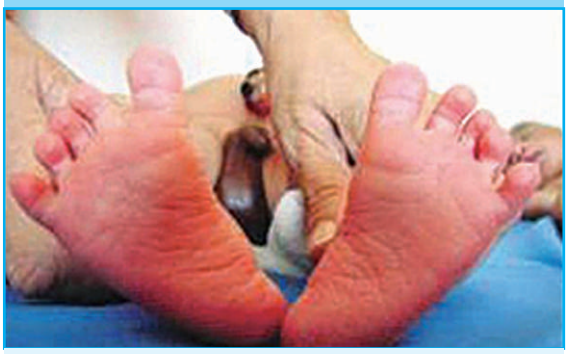
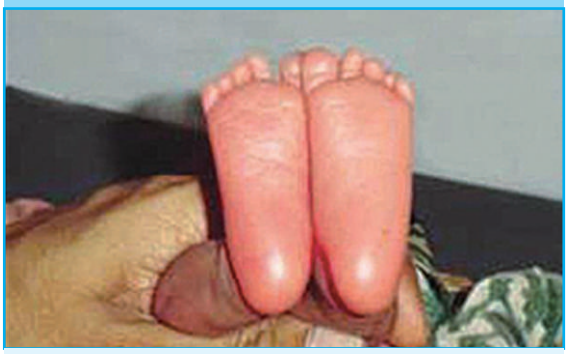
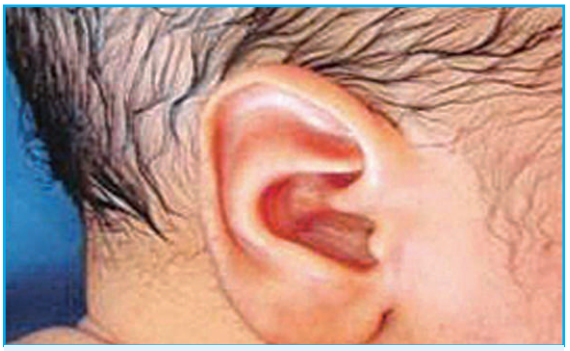
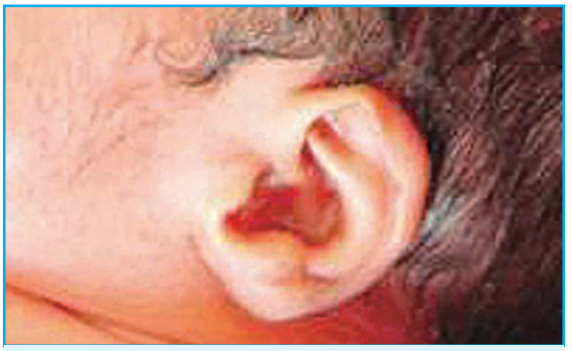
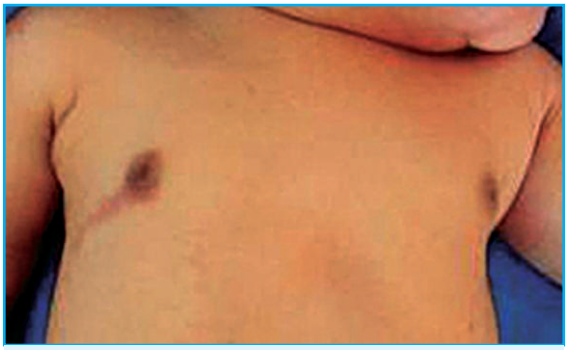
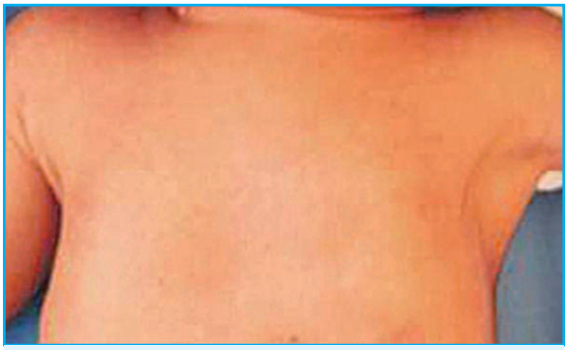
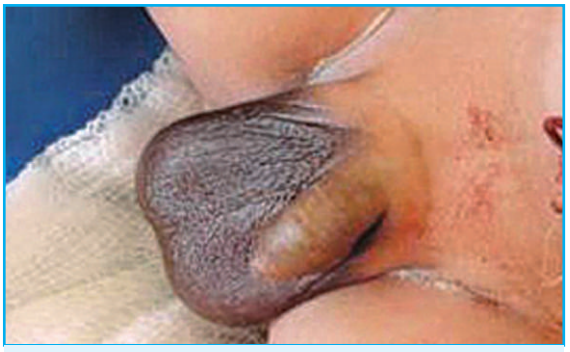
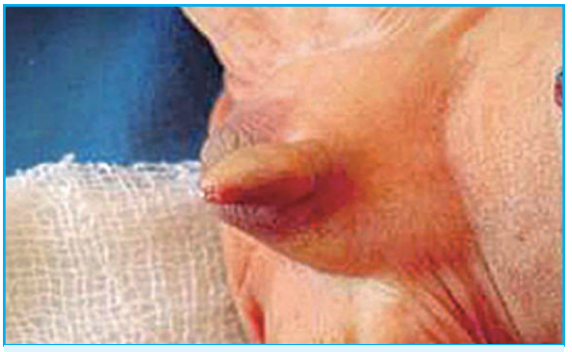
Full term (LBW) baby	Pre-term baby
	
Deep and more sole creases	Lighter and less sole creases
	
Well developed ears	Folded, soft ears
	
Well developed breast nodule	Less developed breast nodule
	
Well developed genital organs	Less developed genital organs

Fig. 26: Differences of Full term and preterm newborn babies.

ANNEXURE 7: ADDITIONAL RESOURCES (ANNEXURE 7.3: MINOR PROBLEMS OF NEWBORNS)

For the minor problems of the newborns, no special care is required. But, we have to make sure that there are no signs of any serious illness. In case, some signs of serious illness are observed, immediately the baby should be taken to bigger hospitals.

Vomiting:

- At the time of birth, the baby can gulp down some amount of amniotic fluid and because of that gastric irritation can occur and the baby can get vomiting in the first 2 - 3 days after birth.
- This vomiting will stop spontaneously, No medicines are needed.
- Make sure whether there are any serious signs? for e.g., not passing stool, abdominal distension, green bilious vomiting or blood in vomitus.

Regurgitation of feeds:

- It is common for the newborn to throw out some amount of milk soon after breastfeeding.
- If the baby is burped well by putting on the back soon after breastfeeding or the baby is made to lie down in a slightly head up position, a lot of relief can be there for the baby.
- Watch for any other signs of serious illness e.g., continuous regurgitation of feeds, abdominal colic, excessive crying and irritability, no proper weight gain or even actual weight loss.

Stool / Urine:

- Generally, a baby passes stool within the first 24 hours after birth and urine within the first 48 hours after birth.
- If passing urine/stool are very much delayed than the accepted time interval, the baby should be taken to a bigger hospital for further examination.

Stools:

- 2 - 3 days after birth, the newborn passes 6 - 7 stools in 24 hours.
- To begin with it is dark green or brown in colour and then gradually turns yellow.
- Many healthy babies pass small quantities of stool frequently in a day.
- Make sure about any other signs of serious illness, less quantity of urine, not taking feeds properly, fever or very cold body, lethargic, abdominal distension etc.
- If any of these serious signs are present, one oral dose of co-trimoxazole should be given before transporting the baby to a big hospital.
- Are there any other signs of dehydration? In case dehydration signs are observed, frequent breastfeeding and oral rehydration solution should be given.

Constipation:

- Many normal newborns pass stools only once in 5 - 6 days. The stool is normal in consistency and the child is otherwise normal. No treatment is required.
- Verify whether any other serious problems co-exist. e.g., vomiting, distension of abdomen, excessive crying, lethargy, refusal to take feeds etc.

Fact to remember:

Do not give any laxatives to newborn babies.

Fever:

- On the second and third day after birth, the newborn loses some amount of body fluids and develops fever, known as dehydration fever.

Frequent breastfeeding is the main treatment at that stage.

- In hot weather or in a very warm area, the newborn's body temperature increases. For the treatment, the room temperature should be brought down (with the help of measures like hanging wet towels on the windows / use of curtains). If too much clothing is put on the baby, a few can be removed. (fan can be switched on if available).
- Watch out for any other concurrent serious problems like loose motions, vomiting, fast breathing or any other difficulty in breathing, not breastfeeding well, lethargy, fullness of anterior fontanelle etc.

Excessive Crying:

- Newborns can cry if hungry, thirsty or wetting the diaper. This is a normal cry for the baby (Sometimes, a baby can cry if very tight clothing or tight elastic of socks or belt are used. Only loose comfortable clothing should be used for the baby and a clean place for sleeping). There should be no hooks or buttons in baby's clothes. Occasionally insect bites or antbites also can the reason for crying
- An experienced mother can identify from the nature of excessive crying of the baby, whether the baby is crying because of some discomfort or some illness.
- Watch out for any concomitant signs of serious illness: e.g., fever, hypothermia (cool hands, feet and body of the baby) not taking breastfeeding, lethargy, fullness of anterior fontanelle, swelling over any part of the baby's body etc.

Bleeding from vagina:

Many girls have bleeding or discharge from vagina (Lower parts) in the first week of birth. It is normal and does not require any specific treatment.

Skin problems:

- Mild rashes (not pustules) on the head / neck / body / axilla may be seen. No treatment is required.
- If pus containing rashes are present less than 10 in number, only antibiotic topical cream or gentian violet may be applied.

But, if pus containing rashes (pustules) more than 10 are seen simultaneously or there is a big abscess, oral antibiotics will be required.

- Many times, skin over the scalp (head) peels off and face is congested and reddish, soon after birth. If the baby is feeding well and no other problem, no treatment is required. But, fever, weakness or refusal to feed are present, the baby may be taken to a skin specialist or bigger hospital for further confirmation.
- Many times, bluish spots are seen on baby's buttocks soon after birth (Mongolian spots) which gradually fade away and no treatment is required.

Engorgement of baby's breast/s:

- In the newly born boys, occasionally engorged breasts are seen. They subside within a few days and no treatment is required. The breast nodule should not be squeezed, nor removal of milk attempted.

Common eye problems in newborn:

- Soon after birth, occasionally, a bloody spot may be seen in the baby's eye. No treatment is required.
- At times, soon after birth, the baby's eyes stick together. Soon after delivery, eyes should be properly cleaned with boiled and clean water and drops of breast milk can be put in baby's eyes 2 -3 times in a day. If necessary, as per doctor's advice, antibiotic eye drops or ointment may be put.

Hiccups:

- Hiccups are very common in the newborn period. No treatment is required. If necessary, the baby may be burped properly by holding it vertically and putting on his/her back.

Swelling on the head:

- During difficult labour, some bleeding occurs on the head and swelling is seen. This swollen part of the head will subside on its own gradually and no special treatment is required.
- Watch out for any concurrent serious signs eg. delayed crying soon after birth, the baby remains lethargic or unconscious, has fits, not breastfeeding, difficulty in breathing etc. Urgent referral to hospital required.

Tremors:

- Tremors (shaking of hands and legs)are very common in newborns and not very serious.
- Watch out for any concurrent serious signs, eg. continued tremors for a longer time, tremors while breastfeeding, fever or cold feel of the baby's hands, feet, chest and abdomen, not breastfeeding properly, laxity, swelling of fontanelle (top of head) etc. (Referral required.)

Jaundice (yellow discoloration of skin):

- Jaundice means yellowish color of eyes and skin.
- In many newborns, yellowish discoloration of face, eyes and chest is seen after about 3rd day after birth and gradually fades by about 6th or 7th day after birth. This is very common. If the baby continues to feed well, special treatment is not required.

Watch out for serious signs like:

- Jaundice noticed within the first and second day after life.
- Deep jaundice extending over palms and soles also.
- Either high or low body temperature.
- Lethargic or lax baby.
- Not breastfeeding properly.
- Low birth weight, weak baby. (Referral required)

Cord infection:

- If there is pus discharge from the cord stump and redness and swelling around the skin of the cord stump, it is necessary to apply antibiotic cream or ointment.
- If the baby is very weak and low birth weight, even antibiotic injections may be required.
- At times, after the cord has dried and fallen, a small reddish swelling is noted (umbilical granuloma). It will shrink and subside if common edible salt is applied on it 2 or 3 times a day for about 5 to 7 days. All the hygienic precautions should be taken including proper hand wash and use of clean salt.

Thrush in the mouth or on the tongue:

- Whenever, baby is breastfeeding and if the maternal personal hygiene is not good, the baby may get a whitish patch on the tongue or mouth (called thrush)and breastfeeding becomes difficult. Such patches also occur in the mouth of very sick and premature babies. This will subside after applying gentian violet lotion 2 - 3 times a day for about 3 to 5 days. Many times, whitish curd is seen soon after breastfeeding if some milk remains in the mouth. This can be easily wiped clean with a cloth piece and the baby does not have any problem in feeding.

ANNEXURE 7: ADDITIONAL RESOURCES (ANNEXURE 7.4: THE COMMON TRADITIONAL PRACTICES AFFECTING NEWBORN CARE)

In our community, several practices related to pregnancy and newborn care are widely prevalent. These practices have originated from age-old traditions. Many times, these traditions appear to have started with some good objective, but its effects are not very beneficial today or could be even harmful. In newborn care, the elderly women members of the family particularly, the mother-in-law or grandmother play an important role and often support by traditional birth attendants is very decisive. Many traditions have roots in old traditional medicine systems like Ayurveda. In our vast country, in different states, a wide variety of traditions are seen, which have been influenced by the local community factors. Status of education, economy and community factors play an important part in these traditional practices.

Not that, all our traditional practices are bad. But very few systematic studies have been carried out. Because of the general mentality that all that is old is bad and all that is new is good, many of our good traditions have not been brought to attention. Hence, here a list has been given which distinguishes good and harmful practices separately. We cannot claim that this list is complete. But you can evaluate the local traditional practices of your area by this approach.

We should preserve our good traditional practices. We should immediately stop all the harmful practices. If some practices are found to be not very harmful, then there is no objection in continuing the same. Now, many harmful modern practices have also been started in our community and it is important to stop them also. By constant community contact and experience, we can learn our local traditional, cultural practices and decide whether they are good and bad and then attempt to create public awareness through community education.

Following details will be of help.

Harmful Practices:

- Not to take any care during pregnancy considering it to be a normal and natural event.
- To ignore girls and not give enough nutrition.
- Selective female feticide / termination of pregnancy.
- Feeding the pregnant woman less,(especially in the last trimester) thinking that it helps in keeping the baby small and facilitates easy, normal delivery.
- Because of wrong beliefs not to give nutritious foods like milk, banana, potato etc. to pregnant women.
- In the case of non-vegetarians, not to give eggs and meat to pregnant women.
- Excessive physical strain during pregnancy.
- Not take iron / folic tablets, thinking it will give black complexion to the baby.

Traditional practices related to delivery of the baby:

✓ **Useful, good / beneficial practices:**

- To prepare a separate clean area in the house for delivery.
- To warm up the delivery room with the help of a traditional oven.
- To give warm fomentation to the mother after delivery.
- Soon after delivery, if the newly born appears pale or bluish, then start the respirations by blowing through the air passages.
- Clean the baby's mouth by wiping with a cloth piece.

Harmful Traditional Practices:

- To conduct delivery in a dark, ill ventilated area or even in a cattle shed.
- To conduct delivery by an untrained birth attendant and old lady.
- Not to wash hands before conducting delivery or even if the hands are washed, wipe them with dirty clothes.
- After delivery, use of dirty pads for the mother.
- Adopt a traditional pushing method (Kalla) for speeding up the delivery.
- Frequent intravaginal exams, with dirty hands and applying "Ghee" on the external surface of vagina before delivery.
- In order to expel the placenta, induce vomiting of the mother by putting her hair in the mouth.
- To hold the baby upside down and hit the baby hard soon after birth, to make the baby cry.
- In order to make the baby cry immediately after birth, to blow hard in the baby's ears or make loud noises with vessels.
- To use unclean items like old scissors, used blades, knife, sickle etc. to cut the baby's cord after birth.
- To apply unclean substances like Ghee, Cow dung, ash etc. on the cut cord stump.
- To use a dirty cloth piece to clean the baby's mouth.

Traditional Practices of newborn care after birth:

✓ **Good and beneficial practices:**

- After delivery, give traditional homemade calorie rich food to mother like groundnut laddu, methi pak and such sweets.(Rich in Iron and calorie).
- To keep the mother and baby dyad isolated in a separate room for about 40 days after birth.
- Breastfeeding the baby as a natural rule.
- To keep the room warm with a traditional oven, where mother and baby are kept.
- To body massage the baby by applying oil or ghee.
- To wrap the baby in 2 to 4 layers of cloth and put a cap on the baby's head.
- To massage the baby and keep in the morning sunlight.
- To prevent eye infection, put a few drops of breast milk in the baby's eyes.
- If the baby is not able to breastfeed directly, express the milk from the mother's breasts and give it to the baby with a spoon or paladai from a cup.
- Use of a traditional cradle for laying the baby.
- Singing traditional lullabies and other songs to babies at the time of sleeping.

Harmful Practices:

- Not giving nutritious foods to mothers like banana, papaya, curds, cold milk (and in case of non- vegetarian families, fish) etc. considering them "cold" foods, not to give legumes, potato etc. as "gas producing" and such wrong beliefs.
- Soon after the delivery, within a short time, the mother is made to do heavy physical work at home, farm etc.
- Putting the mother and baby in a dark, ill ventilated, not so clean area and not allowing even light exercises to the mother.
- To ignore girl children.
- To hurry up for a baby bath, soon after birth.
- To throw away the early breast milk - colostrum.
- To give prelacteal foods such as honey, ghee, jiggery etc.
- Delaying the starting of breastfeeding under wrong notions and ideas e.g., bad omen, bad time etc. Waiting for some rituals before starting the first feed.

- To give gripe water, water, tea, honey and other traditional herbal preparations to baby along with breastfeeding.
- To put oil drops in the ear and nose of the baby, with the wrong idea of cleaning the ear and eyes.
- To believe in superstitions when the newborn is sick such as "casting the evil eye" (nazar utarna) , tying threads on wrist etc.
- To apply kajal, surma (dry soot powder) etc., in baby's eyes.
- In cases of acute diarrheas or for putting the baby to sleep, use of opium products through traditional preparations.
- To keep a knife under a baby's pillow for protection.
- To allow the use of pacifiers and rubber nipples in the baby's mouth to stop crying.

Some traditional practices which are neither very harmful nor much useful:

- Piercing nose and ears for girls and sometimes for boys also. In some communities, circumcision is a must for the boys. (If these procedures are done with aseptic instruments, they can be performed about one month after the 3rd dose of DPT vaccination).
- To massage the scalp on fontanelle, to straighten the baby's neck etc.
- To rear the baby with clothes borrowed from others (or collected by "begging") (in cases of frequent infant deaths).
- To put a black dot on forehead or behind the ear etc., to put a waistband or bangles, amulets etc to avoid the effect of "evil eyes" (nazar utarna)
- Not allow pregnant women to go out during eclipse time.
- To feed the mother with certain special, calorie rich food with an idea to increase the quantity of breast milk (Halwa, coconut, ginger, garlic etc.)

Facts to remember:

To begin with, encourage useful traditional practices. Only after that explain about the harmful practices and motivate them to stop these practices. Do not worry about the harmless practices which are neither useful nor harmful for the time being, you can ignore them.

Modern newborn practices which are being blindly imitated and harmful to our newborns:

- Use of feeding bottles for giving milk to babies.
- Use of powdered milks/formula instead of breastfeeding.
- Use of commercially prepared cereal foods rather than using home made fresh, clean, nutritious, cheap cereals included in the traditional family food.
- Use of expensive baby soaps, baby powder, baby shampoos etc.
- Use of pacifiers and nipples.
- Excessive, unnecessary use of drugs and tonics.
- Prenatal examination of sex of the foetus and selective female feticide.

ANNEXURE 7: ADDITIONAL RESOURCES (ANNEXURE 7.5: A FEW COMMON DIFFICULTIES OF BREASTFEEDING)

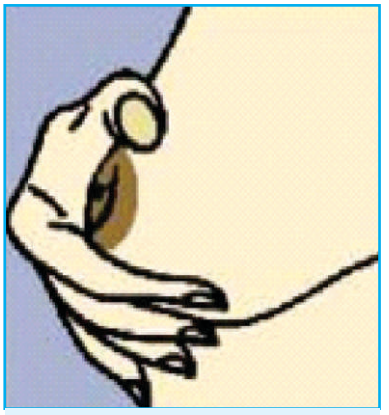
Flat / Small nipple:

- Length of the nipple is not very important.
- It is important that during breastfeeding, both the nipple as well as the surrounding dark area known as areola should be pulled into the baby's mouth.
- Console mother that flat nipples will not be problematic for successful breastfeeding.
- Explain to her the proper method of attachment / latching to the breast.

Swelling or cracks on nipples:

If the baby is not properly latched to the mother's breast during feeding, nipple swelling or cracks occur.

Causes of nipple swelling:	Treatment of cracked nipples:
• Improper latching	• Continue breastfeeding.
• Feeding only on nipples	• Shift the baby a little from where it is sucking
• Frequent use of soap and water	• While feeding on breast ensure that surrounding dark areola is also in baby's mouth along with nipple.
• Fungal infection on nipple	• After completion of feeding, apply a few drops of breast milk on the affected nipple and allow it to dry. Frequent washing is not required.



Flat nipple

Engorgement (or too much filling of milk) of breasts:

After delivery more milk flows in the breast from 2nd, 3rd day onwards. At this stage, if the baby has either not started feeding or not properly latching on breast, the breasts are not emptied fully and milk fills in the breasts and engorgement occurs resulting in swelling and pain.

Measures for prevention:	Treatment
• Start breast feeding early. • Frequent breast feeding • Proper method of latching attachment to breast.	• Hot water fomentation. • Express breast milk very softly and once the breast filling becomes less, start breast feeding by properly latching. (The expressed breast milk can be fed to the baby with a spoon). • If there is too much pain, one tablet of paracetamol can be given to the mother.

Pus formation in breasts (Abscess):

- If the breast engorgement / swelling or cracked nipples are not managed properly in time, pus can form leading to breast abscess. Mother gets a high fever and severe pain. There may be pain in the axilla because of the swollen local lymph glands.

Management:

Pain killer tablets (Paracetamol), antibiotics (eg. cotrimoxazole) Incision and drainage of the pus will be required. Continue breastfeeding from the unaffected side.

Not enough milk:

- First confirm that the mother's complaint is valid.
- If the baby is passing adequate urine and has satisfactory weight gain, only reassurance for the mother is needed with proper counselling and guidance for the correct technique of breastfeeding.

Causes of not enough milk:

Difficulty in feeding on breast	Mother's mental condition
• Late starting • Not giving frequent feeding • Not feeding during night • Every time, feeding for less time. • Improper latching/attachment. • Use of pacifiers/nipples • Offering other fluids (eg. water) along with breastfeeding.	• Lack of self confidence • Tension, worry • Not willing for breastfeeding • Tired **Mother's physical condition** • Illness • Pain • Smoking

Baby's condition:

Sick and extreme preterm or LBW baby; Local defects in mouth like cleft palate and others Management includes regular frequent counselling and guidance, if the baby is getting not enough breast milk and suitable management for the sick baby or the mother.

Proper hand washing

Preparing the baby for KP in a warm clean area Cap, diaper and socks for baby

Removing upper garment to bare the chest of baby

Adjusting the baby on mother's bare chest for direct skin to skin contact. A loving body hug!

Covering the baby and mother together from above

Baby comfortably adjusted in Kangaroo Position

Mother relaxing comfortably with baby in KP

Happy mother with her baby on her chest

Simple chores holding the baby in KP with due support

Simple activities holding the baby in KP

Adjusting twins for KP on mother

Neighbour helping with one of the triplets for KP

Keeping baby safe and comfortable when not in KP

Fig. 27: Steps for Kangaroo Position/KMC

Safe positioning for Skin to Skin Contact during Kangaroo Mother Care

Check list

- ☐ Face can be seen
- ☐ Head is in sniffing position
- ☐ Nose and mouth are not covered
- ☐ Head is turned to one side
- ☐ Neck is straight, not bent and well supported from behind
- ☐ Shoulders are flat against Mom
- ☐ Chest to chest with Mom preferably between her breasts
- ☐ Legs are flexed below the breasts in frog like position
- ☐ Bottom is supported from below
- ☐ Mother is little upright, not flat, on bed/chair
- ☐ Cover the back with blankets
- ☐ Both are watched when sleeping
- ☐ Baby is being monitored

If no one can watch you and your baby after feedings and when sleep is likely, put your baby on his or her back on the babys own firm bed in a warm and clean place.

Requirements for good quality KMC (Part I)

- ☐ Implementation of proper policies and protocols
- ☐ Selection of neonate for KMC
- ☐ Counseling the mother preferably with family members
- ☐ If possible demonstration of KMC by another mother
- ☐ Selection and preparation of place
- ☐ Preparation of mother
- ☐ Preparation of neonate
- ☐ Use of KMC Bag/Wrap/Lycra/Support garment if available
- ☐ Breast milk feeding - Direct/EBM

Requirements for good qualityKMC (Part II)

- ☐ Monitoring during KMC position
- ☐ To watch for danger signs and immediate action
- ☐ Documentation and record keeping
- ☐ Ambulatory Care
- ☐ Planned early discharge
- ☐ Continuum of KMC at Home
- ☐ Regular follow up for adequacy of feeding, growth, Immunizations etc
- ☐ Special follow up for Neuro developmental assessment

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For further information, please contact:

Prof. Shashi N Vani, M.D., D. Ped., FIAP, FNNF
Managing Trustee KMC Foundation, India
Emeritus Professor of Paediatrics including Neonatology,
P S Medical College, Karamsad, Gujarat.
Email: shashinvani@googlemail.com

Director of Health Services,
State Family Welfare Bureau, Department of Public Health
Raj Bahadur Mill Road, Naidu Hospital Compound, Pune - 411 001.
Email: sfwbcell@gmail.com

Health Specialist,
United Nations Children's Fund
215 Atrium, Andheri - Kurla Road, Hanuman Nagar, Andheri (East), Mumbai - 400 059.
Email: kbhuyan@unicef.org