

STANDARDS FOR NEWBORN CARE

FOR QUALITY IMPROVEMENT OF NEWBORN
HEALTH SERVICES IN SRI LANKA



Family Health
Bureau



World Health
Organization



Ministry of Health

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NEWBORN HEALTH SERVICES IN SRI LANKA**

2012

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FORWARD BY THE DIRECTOR GENERAL OF HEALTH SERVICES

In 2007 the Maternal and Newborn Health External Review was conducted to review all aspects of the national programme. The review team presented many recommendations for further improvement of maternal and newborn health care in the country. One very important recommendation of the team was to develop standards for Maternal and Newborn Health and to establish a quality assurance system for Maternal and Newborn Care. This recommendation has been taken up and is included in the National Strategic Plan on Maternal and Newborn Health (2012 -2016). Standards for Newborn Care document is the first document of this series. It was developed by the Family Health Bureau of the Ministry of Health. I thank the resource panel of key experts in the field of newborn health for supporting the Family Health Bureau to accomplish this task.

At present Sri Lanka is experiencing an increase in the women of reproductive age group due to the demographic transition and this effect would remain so for the next 15-20 years. Consequently the number of women getting pregnant and the babies born annually will be on the increase. Therefore it is very important that the country give due attention to Newborn Health to ensure sustainability of current achievements and strengthen the programme to plan towards a healthy future generation.

This *Newborn Care Standards* document to *Improve the Quality of Newborn Health Services* is approved by the Ministry of Health and I advice all categories of health care workers including policy makers, health managers at national, provincial, district and institutional level and all relevant health care providers to utilize this document to ensure provision of quality care to all the newborns in the country.

Dr. Ajith Mendis,
Director General Health Services
February, 2012

MESSAGE FROM THE PRESIDENT OF THE SRI LANKA COLLEGE OF PAEDIATRICIANS

It is indeed a privilege to send this message to the document titled *Standards for Newborn Care*. The Sri Lanka College of Paediatricians is happy to have collaborated with the Family Health Bureau, of the Ministry of Health in this initiative. It is aimed at quality improvement of newborn health services in the country.

Sri Lanka's laudable achievements in vital statistics, such as infant and under-five mortality rates are the envy of her neighbours. However, if Sri Lanka is to achieve the desired figures as specified in the Millennium Development Goals (reduction in child mortality) by 2015, more work needs to be done. Seventy five percent of infant mortality is due to deaths within the first 28 days of life. There are also regional discrepancies within the country in neonatal mortality rates. The major task at hand is to take measures to reduce the neonatal mortality and morbidity. I believe that this can only be achieved by improving neonatal care throughout the country, taking into account the regional differences.

Setting bench mark standards for newborn care is an essential pre-requisite to the successful delivery of quality care to all newborns in the country. Hence, this document has come about at a very opportune time. I hope this document will be used by doctors, nurses and midwives throughout the country in a concerted effort to reduce neonatal mortality and morbidity.

Prof. Asvini D Fernando
President
Sri Lanka College of Paediatricians
February 2012

MESSAGE FROM THE PRESIDENT OF THE PERINATAL SOCIETY OF SRI LANKA

It is a great privilege and pleasure to furnish this message to 'Standards for Newborn Care', a book that will save lives and improve standards of healthcare in Sri Lanka. I salute the members of the Perinatal Society of Sri Lanka who gave their time and knowledge for this invaluable project.

Accounting for almost three fourths of infant deaths, the neonatal period is one area in the healthcare system of Sri Lanka where there is great potential for improvement. This book provides relevant, evidence-based guidelines in dealing with normal and abnormal situations during this period, ensuring uniformity of care throughout the country. Hopefully it will be a book that is referred to often, especially in problem situations. As importantly, it will provide standards for audit.

Finally, on behalf of the Perinatal Society of Sri Lanka, I wish congratulate the Director of Family Health Bureau of the Ministry of Health of Sri Lanka and the team that took the leadership in compiling this book. This is a definite forward step in the improvement of maternal and childcare in this country.

Prof. Hemantha Senanayake
President
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February, 2012

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PREFACE

This '*Standards for Newborn Care*' is an important component of the quality assurance programme in Newborn Care. This document was developed to guide the policy makers, planners, managers and health care providers in providing quality care according to service requirements while meeting the needs of the clients. The External Programme Review on Maternal and Newborn Health conducted in 2007 recommended that a comprehensive set of national standards should be available to ensure accessibility to quality service by all the newborns in all parts of the country.

Due to the demographic transition, Sri Lanka will experience an increase in the reproductive age group population in the next 15 to 20 years. Consequently the number of women getting pregnant and the babies born annually will increase. The country should prepare to give due attention to the rising demands and ensure sustainability of current Maternal and Newborn Health achievements. Every possible step should be taken to ensure that the future generations of the country would be healthy and productive.

Inspite of achieving low Neonatal and Infant Mortality Rates, it should not be forgotten that these indicators have been reducing very slowly over the past decade. Efforts are needed to maintain such achievements and also to further improve Newborn Health in terms of mortality and morbidity and to ensure quality of life for the newborn.

Evidence suggests that explicit, evidence based, cost effective packages of interventions can improve the processes and outcomes of health care when appropriately implemented. It has been demonstrated that there are '*effective interventions*' to reduce neonatal mortality and morbidity under real life (programme) conditions. '*Interventions*' are defined as 'treatment, technologies and key family practices that prevent or treat illness, to reduce death and disability'. To achieve the desired targets it is important to achieve high coverage of effective interventions, adopting delivery approaches that reach the most vulnerable populations, ensuring continuum of care across life cycle and across the health system through '*packaged interventions*'. It has to be noted that ensuring *quality of care* throughout the process of delivering interventions, is very important. In reference to quality of care, the standard always refer to some form of bench mark or an agreed norm. "A standard is an agreed level of performance to achieve a specific outcome" (WHO,1999).

This document is the result of a series of deliberations of the consultative committee to formulate the *Newborn Care Standards*. The WHO document on 'Standards for Maternal and Neonatal Care' (2007) was referred and adapted to the Sri Lankan context by the team of experts. We are thankful to the team of experts who worked in collaboration with the Family Health Bureau in

development of this document. We also thank the World Health Organization country office for providing technical and financial support to this process.

The Ministry of Health has approved this document on *Standards for Newborn Care* to ensure coordinated efforts of health care workers at all levels to improve quality of care provision for all the newborns and thereby improve the newborn health status in the country.

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Programme Officer Intranatal and Newborn Care
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February, 2012

Dr. Deepthi Perera
Consultant Community Physician
Director Maternal and Child Health
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LIST OF KEY ABBREVIATIONS

BCG – Bacillus of Calmette – Guérin
BEmOC – Basic Emergency Obstetric Care
BHT – Bed Head Ticket
CEmOC - Comprehensive Emergency Obstetric Care
CQI – Continuous Quality Improvement
CHDR – Child Health Development Record
DHS – Demographic Health Survey
ENCC – Essential Newborn Care Course
EmOC – Emergency Obstetric Care
JIT – Just In Time
KMC – Kangaroo Mother Care
LBW – Low Birth Weight
LR – Labour Room
MNH – Maternal and Newborn Health
MOH – Medical Officer of Health
NALS – Neonatal Advanced Life Support
NH – Newborn Health
NICU – Neonatal Intensive Care Unit
NLS – Neonatal Life Support
NSP – National Strategic Plan
PHM – Public Health Midwife
PQI – Performance Quality Improvement
QWE – Quality Work Environment
QI – Quality Improvement
QWL – Quality Work Life
SCBU – Special Care Baby Unit
SS – Suggestions Schemes
TPM – Total Productive Maintenance
WHO – World Health Organization
WIT – Work Improvement Teams

INTRODUCTION

1.1 Rationale for the development of evidence based national *Standards for Newborn Care*

Maternal and newborn care has tremendously improved in Sri Lanka over the past years. The maternal and neonatal mortality statistics; Maternal Mortality Ratio in year 2008 ; 33.8/100,000 deliveries (Family Health Bureau, 2011) and Neonatal Mortality Rate in year 2007, 5.9/1000 live births (Registrar General's Department, 2010) bear testimony to this fact. Utilization of health care services in the country is very high with 99% of deliveries occurring in health institutions (DHS, 2006/7). Almost all pregnant mothers receive skilled care at birth and all the newborns receive essential care at the time of delivery and in the immediate newborn period. Though information regarding neonatal morbidities is sparse at the national level, in the present context it is imperative that preventable causes of neonatal morbidities do exist.

For further reduction of neonatal mortality and morbidity the present requirement of the national newborn care programme is to improve the quality of newborn care. Studies clearly indicate that countries with high utilization of health care services need to improve the quality of care provision to further reduce neonatal mortality and morbidity (WHO 2007). This would enable further improvement in newborn health services and thereby quality of life of the future generations. A system to further improve the clinical quality in newborn care has to be established in the current system of care (Raven et al, 2011)

The External Review of Maternal and Newborn Health Sri Lanka (Ministry of Health Care and Nutrition, 2007) has clearly identified that there is provision to further improve maternal and newborn care in the country. It was identified that the quality of care provision at both institutional and field level needs much improvement. The review specifically revealed that there is a need to plan for high quality newborn care service provision in all the hospitals and at field, that would ensure accessibility to quality services in all parts of the country. One of the key recommendations of the review is to formulate a National Strategic Plan on Maternal and Newborn Health (NSP/MNH) based on which specific provincial and district plans should be developed. In NSP/MNH (Family Health Bureau, 2011) under Newborn Health Service Delivery, clear strategies are identified to ensure that all newborns receive quality essential newborn care and all high risk newborns receive quality advanced neonatal care. It is identified that an appropriate, sustainable, cost effective and a comprehensive quality assurance system on neonatal care has to be developed and implemented. Development and implementation of *Standards for Newborn Care* (essential and advanced care) are pre-requisites for the process of implementation of the quality assurance system (JHPIEGO, 2003).

1.2 Establishing quality improvement in Sri Lanka

Sri Lanka is a country known to the world for providing cost effective health care free of direct cost to patients. The quality of health care is addressed by a well-developed infrastructure for service

delivery, a functioning management information system and an in-built system of supervision and monitoring and evaluation. The training and supply of adequate human resources, especially those with midwifery skills, their deployment in the institutions and in the field is another factor for the success of the material & newborn health programme in Sri Lanka. A review of indicators on the availability of emergency obstetric care (EmOC) in Sri Lanka showed, in general a high level of utilization of BEmOC/CEmOC facilities (76.7%; DHS, 2007).

In the year 2000, the Continuous Quality Improvement Process (CQI) programme was introduced at the Castle Street Hospital for Women with the introduction of using Japanese management practices. The concept 'Quality Healthcare through Productivity' was initiated based on the saying 'Quality fails when system fails'. As a starting point of the programme, Japanese '5S' concept was used to organize the hospital and to create quality culture among hospital staff (Sridharan, 2011).

Seiri (Sorting and Cleaning), Seiton (Organizing Orderliness), Seiso (Cleaning and Beautification), Seiketsu (Standardization) and Seitsuke (Training and staff discipline) 5S concept was applied appropriately for the hospital setting. The popular Japanese management technique was employed as an initial step to improve productivity, quality, cost reduction, delivery on time, safety for the employees and patients and to improve the morale of the staff.

Thereafter the efficiency and effectiveness of the hospital was improved using productivity concepts such as reducing waste, Suggestions Schemes (SS), Just-in -Time (JIT), Total Productive Maintenance (TPM), Work Improvement Teams (WIT), Mistake Proofing (Poka-Yoke) etc. In addition to these, productivity concepts such as improvement of Quality Work Life (QWL) and Quality Work Environment (QWE) of the employees were also addressed (Sridharan, 2008).

Many other hospitals and health institutions followed the quality improvement process thereafter and the Ministry of Health launched an ongoing mechanism to improve the Quality and Safety of the Healthcare Institutions in the country that is monitored, evaluated and coupled with a rewarding system by the Ministry of Health. Guidelines are developed for the health institutions of different categories to follow this process (Ministry of Health, 2010). In this background it is postulated that Sri Lanka is ready to take up total quality improvement in the health sector including Maternal and Newborn Health Services.

1.3 What is quality of care?

Understanding what is good quality of care and how it can be evaluated is critical to improve health services. To improve quality of care, it is necessary to clearly define this concept and apply models that are user-friendly and relevant to health services (Rawen et al 2011).

Approaches for quality assurance in industry were introduced into health care practice in the late 20th century. Ellis and Whittington (1993) suggested that the basic characteristics of quality assurance

from industry and manufacturing can be applied to health care. These characteristics include: specification of standards; development of techniques for the appraisal of standards; adoption of a cyclical model of review and improvement; involvement of consumers; consideration of relationships between quality and costs; and the recognition of the value of positive organization and quality management.

Defining and therefore measuring quality of care has focused on biomedical outcomes. In an earlier definition, quality of care is defined as: *'the application of medical science and technology in a manner that maximizes its benefit to health without correspondingly increasing the risk'* (Donabedian, 1980).

An important distinction between the quality of the actual care and the expected quality of care based on standards is made in the following definition by Roemer and Montoya-Aguilar, 1988: *'quality of care is the performance of interventions according to standards that are known to be safe, which are affordable to the society and that have the ability to produce an impact on mortality, morbidity and disability'*. Another contemporary definition makes it clear that quality of care is a means of closing the gap between desired and actual health outcomes: *'the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional practice'* (Institute of Medicine, 1990).

1.4 Quality improvement process

There are many quality improvement conceptual frameworks defined in literature. Performance and Quality Improvement Process (JHPIEGO, 2003) is one of many processes designed to enable institutions to adhere to desired institutional and individual performances (figure 1). This model that is successfully utilized in many centers is described below, as an example for the practitioners.

The Maternal and Newborn Health Programmes in some countries have successfully adapted and applied the Performance Quality Improvement (PQI) process by defining operational standards, assessing clinical and community performance, identifying targeted, cost-effective interventions to improve quality of maternal and newborn care and by monitoring and evaluating performance periodically (JHPIEGO, 2003).

1.4.1 Defining Desired Performance Standards

The first step in the quality improvement process is to bring together in-country stakeholders to define desired performance standards based on inputs from national policies, national strategic plans, service delivery guidelines etc. Once the performance standards are defined they become the basis of assessment that are used to assess and monitor the quality of services and community performance.

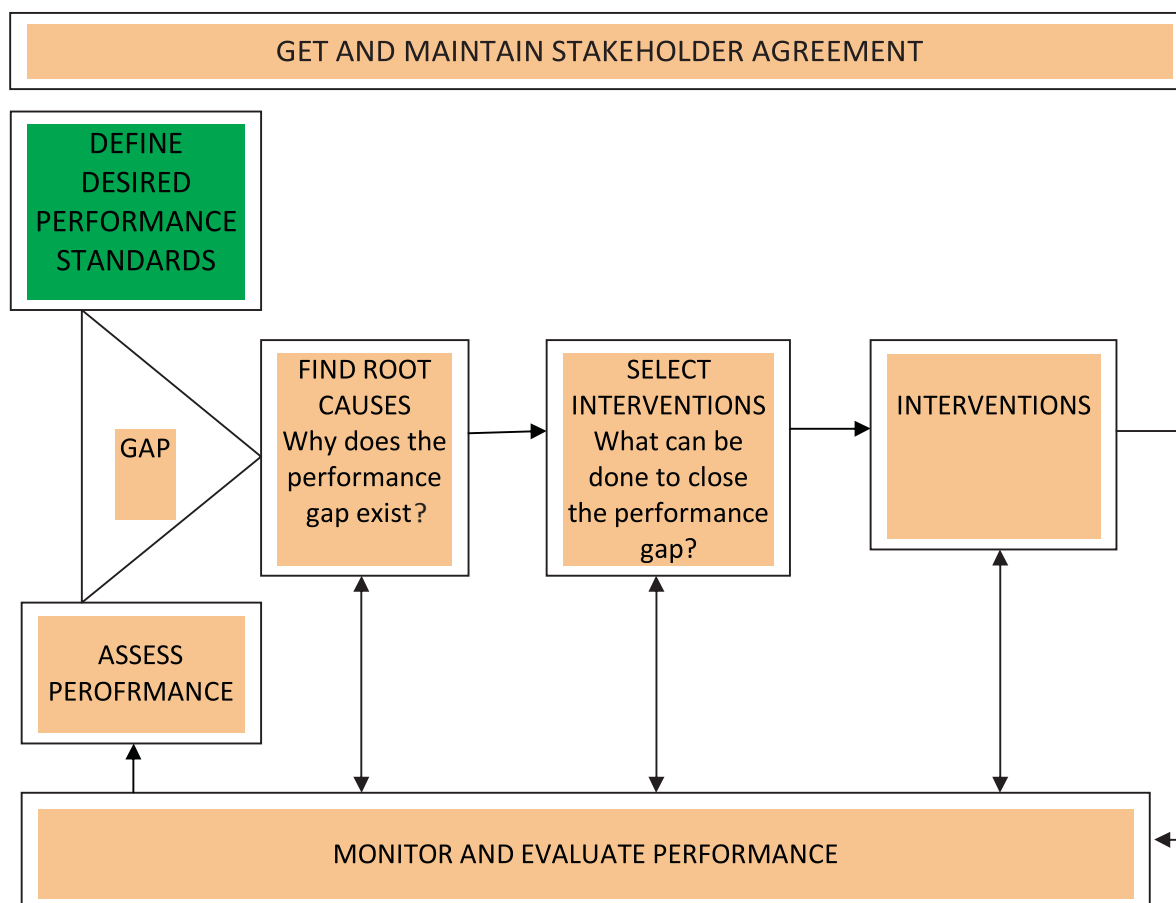
In this instance the Resource Panel for the development of Standards for Newborn Care, included all

the stake holders for newborn care in the country. All the relevant national policies, Maternal and newborn health strategic plan other relevant documents and guideline were reviewed and taken into consideration by the resource panel. The WHO document on 'Standards for Maternal and Neonatal Care' (WHO, 2007) was used as a guide and adapted for the country specific criteria.

1.4.2 Describing Actual Performance

To determine actual performance (as compared to desired performance), health care providers (Health Administrators, Consultants, Medical Officers, Nursing Officers, Midwives) can use standards and the indicators defined based on standards at service delivery sites to establish a baseline for the site being assessed. These findings would enable to provide a quantitative measure of how much actual performance deviates from desired performance (i.e., the gap in performance).

Figure 1; Steps in the Performance and Quality Improvement Process



Source: this process is based on the performance improvement framework developed by the Performance Improvement Consultative Group, a collaborative group of representatives of USAID and USAID–funded cooperating agencies (JHPIEGO, 2003).

1.4.3 Finding Root Causes

Once health care providers have compared actual performance to desired performance, they can work with healthcare staff and community members to determine the reasons for any performance gaps. This cause analysis, rather than serving as a punitive measure for poor performance, is intended to motivate healthcare staff and community members to identify their own weaknesses and offer solutions that will improve performance and quality.

1.4.4 Selecting Implementing Processes to Improve Performance

The Maternal and Newborn Health Programme can use evidence based interventions identified by the national programme in the NSP/MNH (Family Health Bureau 2011) to address needs identified in the root cause analysis stage of the PQI process. Given the wide range of possible processes and the likelihood that problems will exist in more than one area the most urgently needed processes, most cost effective processes and those that will have the greatest impact should be given the highest priority.

1.4.5 Monitoring and Evaluating Performance

Monitoring changes in performance is an ongoing task that allows stakeholders to understand the impact of interventions. Monitoring systems focus on measurable changes and on gathering information that can be used to modify interventions. Information from evaluations is used to guide further analysis of performance gaps and causes for those gaps and it can also signal healthcare providers, clients and community members that services and community support of maternal and newborn health care are getting closer to the desired level of quality.

1.5. Implementing *Standards for Newborn Care*

All the health care workers caring for newborns in the institutions and at the field should strive to meet the *Standards for Newborn Care* in their respective settings. Functional Quality Improvement Teams from the National Level with specialized knowledge would assist in staff training on *Standards for Newborn Care*, would verify assessment of performance and would provide assistance in planning/implementing and monitoring.

At the institutional and regional level already the Quality Improvement teams are established. At the local level decide on scope of quality improvement and related standards. Implement standards and assess performance according to an implementation plan and measure performance continuously while recognizing achievements periodically.

1.5.1 Steps in Implementation of *Standards for Newborn Care* at the local level and its assessment

(a) Implementation

- Awareness of staff on the standards, standards built in daily activities
- Staff consensus on QI process – build on the existing quality assurance system, 5S/KYSAN/Productivity

(b) Assessment of actual performance

- Self-assessment; peer-assessment(using job aid)
- Verification (once in 2-3 months): internal or external

(c) Monitoring Progress

- *A continuous process (facility level QI)*
- *At higher level – for advocacy, MNH programme planning, implementation*
- *Use selected indicators related to*
 - *Input*
 - *Process and Output*
 - *Outcome*

(d) Recognize achievements

- Importance of motivation element
- Develop system of recognition, built-in mechanisms to enhance motivation:
 - empower local level health providers, develop sense of professional growth;
 - feedback mechanism with an open recognition for the best performers,
 - improve network of service and MNH outcomes, when it is carried out in a network of facilities: this would create a sense of achievement;
 - rewards system, including social and/or material recognitions
 - address the needs of a specific institutional and programmatic context
- a short-term promotion of a specific standard of care or a long term systematic process or make it a part of accreditation process

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2. IMMEDIATE CARE OF THE NEWBORN

The Standard

All newborns should receive immediate care at birth by an assigned skilled birth attendant (midwives, midwifery qualified nursing officers and nursing sisters and all categories of medical officers who are expected to have had adequate training on Essential Newborn Care) on ;

- Cleanliness and sterility for prevention of infection
- Thermal protection/prevention of hypothermia
- Safety of newborn baby
- Assistance and facilities to initiate resuscitation when needed
- Cord care
- Assistance to initiate breast feeding
- Measurement of weight, length, OFC
- Note any obvious abnormalities detrimental to life (eg: congenital abnormalities, birth injuries)

All high risk pregnancies should receive specialized care (Obstetric and Paediatric)

Aim

To respond to normal physiological needs of the newborn at birth; asses and attend to its state of health; and to reassure the mother

Requirements

- Availability & correct implementation of the national standards and locally adopted guidelines on immediate care of the newborn
- Availability of a skilled birth attendant – trained in Essential Newborn Care (ENCC), Basic Newborn Life Support (NLS) for midwives, nursing officers, labour room nursing sisters and Neonatal Advanced Life Support (NALS) training for medical officers AND regular two yearly mandatory refresher training on NLS and NALS for all skilled birth attendants
- Availability of antenatal cards, obstetric records, partogram and neonatal formats
- Competent labour room team to review maternal details to identify at risk conditions and anticipate problems; AND provide assistance for immediate care of the newborn mentioned above
- Availability of a labour room for clean and safe delivery
- Availability of the essential equipment, supplies and drugs for immediate care of the newborn in the labour room

- Availability of a Stabilization Unit, a well equipped provincial referral unit (NICU) /or institutional Special Care Baby Unit (SCBU) to offer comprehensive neonatal care
- Availability of transport facilities and retrieval teams
- Record keeping and documentation of the birth details and care given to the neonate in the Obstetric BHT, Neonatal Examination Format, Child Health Development Record (CHDR) for all newborns and Neonatal Diagnosis Card whenever there is any deviation from the normal to aid continuity of care
- Health educational activities with regard to improvement in awareness related to safe, skilled and essential newborn care

Applying the Standard

Skilled birth attendant who attend the neonate at birth must perform following tasks (Annexure I);

- Review maternal records and partogram to exclude threatening conditions and to anticipate problems
- Practice clean and safe delivery techniques including two glove technique to reduce the risk of neonatal infections. Sterile pack with sterile towels, cord cutting scissors, pack of sterile swabs and cord clamp has to be used
- Ensure thermal protection - Drying and placing newborn in skin-to-skin contact with the mother. If the mother is sick or unwilling, keep the baby under a heat source. Ensure availability of a head cap and clean baby pack (refer Standard 2.3 on Thermal Protection)
- Check airway, breathing, circulation and initiate resuscitation with bag and mask and apply chest compressions if needed (refer standards 2.4 on Resuscitation)
- Encourage and support early and exclusive breast feeding. Any deviation to be decided by the Consultant Paediatrician (refer Standard 2.6 on Breastfeeding)
- Weigh the baby. Also check the length and head circumference using standard methods and calibrated instruments
- Examine the baby for problems or abnormalities and if required refer to the respective consultants to manage as per respective standards
- Provide information and support to the mother to facilitate breast feeding and proper care of the baby (refer Standard 2.6 on Breastfeeding, 3 on Care during 12 – 24 hours and 4 on Routine postnatal care of the neonate)
- Record on Child Health Development Record (CHDR) the birth weight, length, head circumference and any problem identified at neonatal examination before baby is discharged from hospital
- Provide information on the condition of the mother and baby and support when needed to the father and other family members

Audit

Input Indicators

- Availability of national standards and locally adapted guidelines on immediate care of the newborn at birth
- Availability of regular (two yearly) mandatory training and updating to improve and assess knowledge and understanding, skills and competence for correct implementation of the main procedures at birth
- Availability of functioning and properly maintained specified equipment, supplies and drugs in the labour room for immediate newborn care as per Labour Room Management Guidelines¹
- Data on proper recording of immediate newborn care (number of births, live births, still births, birth weight, sex, vitamin K prophylaxis given, resuscitation performed, referrals made), from the Birth Register(H 1163) and H830 Monthly Maternity Statistics Return

Process and Output Indicators

- Proportion of newborns receiving care by a skilled birth attendant
- Proportion of newborns receiving immediate care at birth as stated in the standards
- Proportion of skilled birth attendants trained in Essential Newborn Care course
- Proportion of skilled birth attendants trained in Neonatal Life Support or Neonatal Advanced Life Support as per standard
- Proportion of Labour Room In-Charge Nursing Sisters/Nursing Officers conducting Labour Room Supervision as per Labour Room Management Guidelines¹
- No of Institutions sending complete H830 Monthly Maternity Statistics Return

Outcome Indicators

- Cause specific neonatal mortality rate
- Proportion of newborns transferred to the NICU or SCBU received in good quality on admission to the receiving unit
- Neonatal Mortality Rate (NMR)
- Neonatal Mortality Rate for newborns born in the same hospital (In born)
- Neonatal Mortality Rate for newborns transferred to the hospital (Out born)
- Rates calculated for specific Neonatal Morbidities

References and Links

1. Family Health Bureau, Ministry of Health and Nutrition, 2007. *Labour Room Management Guideline*, Colombo : Family Health Bureau.
2. Department of Making Pregnancy Safer, World Health Organization, 2006. *Standards for Maternal and Neonatal Care*, Geneva : Department of Making Pregnancy Safer, WHO

3. Family Health Bureau, Ministry of Health and Perinatal Society of Sri Lanka, 2012. *Resuscitation of the newborn baby*, Course Manual. Colombo : Family Health Bureau
4. Department of Making Pregnancy Safer, World Health Organization, 2006. *Pregnancy, childbirth, postpartum and newborn care : a guide for essential practice*, 2nd Edition. Geneva : WHO
5. World Health Organization, 2003, *Managing newborn problems : a guide for doctors, nurses, and midwives*. Geneva : WHO

ANNEXURE I - Preparation for delivery and Immediate Care
(WHO Essential Newborn Care Course, 2006)

Preparation for delivery :

- Ensure the room is warm (not less than 25⁰C and no draught)
- Follow universal precautions. Wash hands with soap and water. Wear gloves.
- Resuscitation equipment are kept together close at hand, Birth attendant is skilful in its use, are daily checked prior to each delivery, kept ready for use .

Immediate newborn care :

- Note the time of delivery.
- Deliver on to mother's abdomen or on to the hands or on to clean or sterile, dry, warm towel.
- Ensure thorough drying. Wipe blood or meconium but not the vernix.
- Note the breathing while drying.
- Ensure no other baby by examining the mother's abdomen, prior to giving Oxytocin.
- Change the gloves, if not wash the gloved hands.
- Clamp and cut the umbilical cord.
- Place the newborn skin-skin between mother's breasts.
- Tie the Identification Disc on the newborn and the mother on the wrist.
- Cover baby's head with a cap and cover the baby and the mother with a warm sheet/blanket
- Encourage and support early breastfeed within the 1st hour.
- Ensure Vitamin K prophylaxis soon after birth – within 1st hour of life. It should be given on the front of the thigh and documented in the Neonatal Examination Format.
- Weighing and measurements could be delayed until baby's first feed is over for 2 hours or more.
- Bathing delayed for 6hrs or more

2.1 CLEANLINESS AND INFECTION CONTROL

The Standard

All women and newborn infants should have access to clean care during labour, delivery and the neonatal period. Birth attendants, other health care workers, mothers and care givers in particular should be educated regarding the relationship of poor hygiene and infections.

Aim

To reduce neonatal mortality and morbidity due to infections.

Requirements

- Availability of national standards and locally adapted guidelines.
- Correct implementation of national standards and locally adapted guidelines on infection control
- Availability of skilled birth attendants and health staff to provide neonatal care, and they are competent in applying the principles of cleanliness and infection control during labour, delivery and the newborn period.
- Availability of clean environment during labour, delivery and newborn care, including clean surroundings, clean surfaces, rooming - in and avoidance of overcrowding in the labour room and wards.
- Availability of clean /sterile equipment (resuscitation bag and mask, electrical suction device with disposable suction catheters, thermometer) and supplies (cord care pack; refer Standard 2.2 on Cord Care, clean water, soap, sterile gloves, sterile gauze, disposable syringes and needles, clean clothing and bedding) in the institution.
- Educational activities to improve awareness of mothers, families and communities and mandatory training for ALL birth attendants yearly, on infection control and its importance during labour, delivery and neonatal period
- Record Keeping (as per Family Health Bureau, Ministry of Health and Nutrition, Labour Room Management Guideline, 2007; labour room infection control check list)

Applying the Standard

The health providers of maternal and neonatal care and birth attendants in particular must perform following tasks:

- Wash their hands with soap and water and wipe in disposable towel before delivery and before and after any examination of the newborns (Annex 2)
- Wear sterile gloves when delivering the baby and providing immediate care. (In exceptional circumstances when there is only one person attending on the delivery and the newborn, two pairs of gloves should be worn at the outset and outer pair removed prior to attending to the cord)
- Ensure availability of clean environment during labour, delivery and neonatal care, including clean surroundings, clean surfaces, rooming - in and avoidance of overcrowding in the labour room and wards
- Ensure that the baby is delivered on to the mother's abdomen or to a sterile surface and immediate newborn care takes place on the mother's abdomen or on a clean surface as the case may be, using sterile instruments, sterile gauze and clamps for cord care and sterile instruments and supplies for maternal and newborn care
- Ensure skin to skin care and early breast feeding that helps to minimize infections (Refer Standard 2.6; Breastfeeding)
- Take universal precautions to avoid exposure to blood and body fluids by protecting broken skin, using gloves, goggles, gowns, masks, aprons and mechanical or electrical suction devices for resuscitation IF needed, disposing solid waste properly and handling needles and other sharps properly
- Sterilize and clean contaminated equipment and supplies
- Advise mothers on cleanliness and hygiene of themselves and the newborn infant at home
- Obtain advise in special situations like HIV, Syphilis and follow the relevant guidelines

Audit

Input Indicators

- Availability of national standards and local guidelines for infection control during labour, delivery and the neonatal period
- Availability of sterile equipment and supplies to ensure safe delivery and care of the newborn
- Availability of skilled attendants with knowledge and understanding to practice universal precautions during labour, birth and newborn care
- No of institutions with designated infection control nursing officers for the maternity section and SCBU/NICU

Output Indicators

- Proportion of hospitals implementing national standards on infection control during labour, delivery and newborn period.
- Proportion of hospitals adhering to infection control procedures as per the Labour Room Management Guidelines¹
- Proportion of staff caring for newborns trained in Labour Room Management including infection control
- Proportion of birth attendants in an institution observing the principles of infection control during labour, delivery and newborn care
- Proportion of health promotional activities in an institution that include the theme of cleanliness and infection control
- Proportion of institutions practicing the recommended procedure of delivering the baby on to mother's abdomen
- Proportion of newborns kept skin-to-skin with the mother until completion of the first feed
- Proportion of newborns in whom other procedures such as weighing are delayed

Outcome Indicators

- Prevalence of neonatal infections (including deaths and referrals)
- Neonatal mortality due to infections
- Percentage of neonatal admissions to the SCBU/NICU due to infections
- Institutional neonatal mortality rate due to infections
- Maternal mortality due to infections

References and Links

1. Family Health Bureau, Ministry of Health and Nutrition, 2007. *Labour Room Management Guideline*, Colombo: Family Health Bureau.
2. World Health Organization, 2008. *Essential Newborn Care training manual*. Geneva: WHO
3. Sri Lanka College of Microbiologists, 2006. *Hospital Infection Control Manual*. Colombo: SLCM
4. Department of Making Pregnancy Safer, World Health Organization, 2006. *Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice, 2nd Edition*. Geneva: WHO
5. World Health Organization, 2003. *Managing newborn problems: a guide for doctors, nurses, and midwives*. Geneva: WHO

Remove wrist watch, jeweler and fold long sleeves of the dress before washing hands

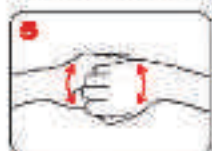
How to handrub? WITH ALCOHOL-BASED FORMULATION



Apply a palmful of the product in a cupped hand and cover all surfaces.



Rub hands palm to palm



Backs of finger to opposing palms with fingers interlocked



Right palm over left dorsum with interlaced fingers and vice versa



rotational rubbing of left thumb clasped in right palm and vice versa



palm to palm with fingers interlaced



rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa



20-30 sec



...once dry, your hands are safe

How to handwash? WITH SOAP AND WATER



Wet hands with water



apply enough soap to cover all hand surfaces



rinse hands with water



dry thoroughly with a single use towel



use towel to turn off faucet



40-60 sec



...and your hands are safe



WHO acknowledges the Hôpital Universitaire de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.



October 2009, version 1

2.2 CARE OF THE UMBILICAL CORD

The Standard

All newborn babies should receive safe cord care at birth and in the immediate newborn period to avoid cord infection and/or cord bleeding. Babies with cord infection / bleeding, should receive immediate attention of a health care worker.

Aim

To reduce neonatal mortality and morbidity due to cord infections, sepsis, and bleeding from the cord.

Requirements

- Availability of national standards and local guidelines on care of the umbilical cord.
- Availability of competent health workers to – apply the principles of hygiene and cleanliness in cord care, to clamp and cut the cord, keep equipment and supplies clean and sterile, advice care givers on cord care at home and on the signs of cord sepsis and cord bleeding and on the importance of seeking care immediately if these appear
- Availability of sterile preferably autoclaved equipment and supplies (packeted system) to provide routine cord care (water, soap, sterile gloves, sterile scissors, sterile clamps, means of sterilizing materials, clean clothes for the newborn)
- Availability of vitamin K injection
- Availability of antibiotics and antiseptic solutions for treatment of infections
- Availability of a functioning referral system and accessibility of a SCBU/NICU for the newborn who needs special care and treatment
- Mechanism to maintain records of the care given to each newborn in the H1162 Neonatal Examination Format/ CHDR B portion if it is in the field
- Health education activities are implemented to increase community awareness on the risks of cord infection and cord bleeding and the importance of seeking care immediately if the baby shows any indication of these conditions
- Accessibility to appropriate information to the families and communities on risk of cord infection and cord bleeding, signs and symptoms of cord infection and bleeding and their prevention and importance of seeking care if cord sepsis or bleeding is suspected
- Knowledge among families about the importance of prevention of cord infection and cord bleeding

Applying the Standard

Health care providers of maternal and newborn care must perform the following tasks:

- Apply the principles of cleanliness and infection control at birth, before clamping and cutting the cord – attention to hand washing, lay the baby on the abdomen of the mother (clean surface in situations where delivery on to the abdomen is not possible) after delivery, birth attendant should wear two pairs of sterile gloves and remove one pair of gloves before cutting the cord, always use sterile instruments to cut the cord
- Apply sterile cord clamps
- Using a sterile cord cutting scissor cut the cord leaving a length of about 3 – 4 cm and check to ensure the cord stump is not bleeding
- Do not apply medicaments to the stump. Expose the stump to air and keep it dry
- Nappy should be worn below the level of the cord. Wear clean loosely fitting gown to allow air circulation. Avoid body fitting garments (body suit type garments) until the cord has fallen off
- Regularly look at the cord during newborn examinations
- If cord examination is necessary during post natal period wash the hands and wipe in sterile disposable towels before and after examination. Do not share supplies with other babies
- If the cord is contaminated with urine or faeces, wash with soap and water/ dry thoroughly with clean cloth. Never use cotton wool as it leaves filaments on the cord. Alcohol/surgical spirit delays healing and is not recommended
- Look for any signs of infection, treat the infection immediately and follow up as per local guidelines
- Do not attempt to pull off the cord
- In case of cord bleeding, if within first 24 hours re-clamp the cord and check. If vitamin K has not been given or missed or cord bleeding continues after first 24 hours give vitamin K injection. If there is further bleeding refer for specialised care
- Advice the mother/ family to wash the hands with soap and water and wipe in clean towel before cord care and to keep the cord stump dry exposed to air. Explain why it is important not to apply any substance to the stump
- Advice on signs of cord infection (redness of the cord, purulent discharge from the cord redness spread to surrounding skin) and cord bleeding and on the need to seek immediate care if any of these complications occur
- Health care providers should therefore focus on complete examination of the baby for diagnosis and prompt management
- Keep equipment and supplies (includes antibiotics /antiseptics/ vitamin K) properly stored and clean and readily available in the institutions
- Record abnormal findings in the H1162 Neonatal Examination Format/ H1164 NICU SCBU History Record Sheet and give a H1165 Neonatal Diagnosis Card on discharge

Audit

Input indicators

- Availability of national standards and locally adapted guidelines on cord care in the institution
- Health care providers for newborns comply with the guidelines
- Availability of equipment and supplies required to provide cord care as per guidelines
- Availability antibiotics, antiseptics, vitamin K injections

Output Indicators

- Proportion of institutions where cord care is provided according to national guidelines
- Proportion of institutions providing Vitamin K to all the newborns within 24hours of birth
- Proportion of institutions using sterile packs for cord care
- Percentage of skilled birth attendants changing gloves/remove one glove (if double glove method) before cutting the umbilical cord
- Proportion of newborns who had a complete newborn examination prior to discharge
- Proportion of health care providers in maternity and newborn units who are aware of signs of cord infection

Outcome Indicators

- Proportion of newborns admitted to the NICU/SCBU with signs of cord sepsis
- Proportion of newborns admitted to NICU/SCBU with signs of cord bleeding

References and Links

1. Department of Making Pregnancy Safer, World Health Organization, 2006. *Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice, 2nd Edition*. Geneva: WHO
2. World Health Organization, 2003. *Managing newborn problems: a guide for doctors, nurses, and midwives*. Geneva: WHO
3. World Health Organization, 2008. *Essential Newborn Care Course training manual*. Geneva: WHO
4. Sri Lanka College of Microbiologists, 2006. *Hospital Infection Control Manual*. Colombo: SLCM
5. Family Health Bureau, Ministry of Health Care and Nutrition, 2007. *Postpartum Care Guide*. Colombo: Family Health Bureau

2.3 THERMAL PROTECTION

The Standard

All newborn babies, at birth and during first few days of life, should receive special attention to maintain a normal body temperature of 36.5 - 37.5⁰ C. Those who suffer from severe hypo or hyperthermia, or display any danger signs after normalization of the temperature should be carefully assessed and promptly treated or referred.

Aim

To reduce neonatal morbidity and mortality due to hypothermia or hyperthermia

Requirements

- Availability of National standards and guidelines on the prevention, detection and management of hypo and hyperthermia and are correctly implemented, respecting the principles of the 'warm chain' (Annex 3) in term babies
- Availability of National standards and guidelines on the prevention, detection and management of hypothermia in preterm babies
- All neonates and their mothers have access to skilled care at birth, and first days of life
- Availability of competent care givers to provide advice to mothers and families on simple measures of prevention and on seeking care when and if needed
- Availability of competent care givers to prevent and to recognize hypo and hyperthermia, re-warm hypothermic and treat hyperthermic babies and refer those with danger signs and severely affected
- Availability of services which are organized in line with the principles of the 'warm chain' (Annex 3) in order to maintain a room temperature of 25 - 28⁰C free of air currents
- Availability of a warm labour room and warm postpartum ward for mothers and babies. The heating system when used must be safe and the recommended system should be specified in the national guidelines. Air conditioners when used should have facilities for proper temperature regulation
- Availability and proper use of equipment in all the units (wall thermometers and thermometers to measure baby's body temperature, heaters where applicable) and supplies (baby pack ; clothes for drying and covering the baby i.e. 2 towels and a cap, proper clothing and bedding)
- Ensure a functioning referral system where babies with severe hypothermia or hyperthermia can be referred for treatment and higher level of care

- Availability of a SCBU/NICU for babies in need of special care and treatment
- Availability of a recording system to maintain newborn records in the Labour Room, SCBU and NICU
- Availability of health educational activities to increase the awareness of mothers, families and communities of the importance of preventing and treating hypo/hyperthermia of the newborn

Applying the Standard

Health care providers attending births and caring for newborn babies, and skilled attendants in particular, must perform the following tasks;

- Ensure that the labour room is warm (25-28⁰C), free from draughts and smoke and not too hot (not more than 35⁰C); this is equally important in health facilities and at home.
- Place the baby on mother's abdomen or chest, skin-to-skin contact or on a warm sterile surface if keeping skin-to-skin with the mother is not possible, immediately after birth
- Dry the baby thoroughly whole body and hair immediately after birth and remove the wet cloth and cover baby with a clean, warm dry cloth and put on a head cap
- Encourage the mother to keep the baby in skin-to-skin contact immediately after birth and to start breastfeeding when the baby is ready, explaining that, this usually occurs within one hour of birth
- Postpone bathing until at least six hours after birth
- If skin-to-skin contact is not possible, use alternative methods of preventing heat loss and providing warmth such as wrapping the baby and covering with a warm sheet and placing the baby in a warm cot
- If the newborn infant is low birth weight ensure that the labour room is warm and use a radiant heater to keep the baby warm. Explain to the mother that skin-to-skin contact must be continued in the ward and at home, as well as during transport in case of referral.
- Measure body temperature one hour after birth in all preterm and LBW babies. If hypothermic re-warm the baby
- Ensure regular monitoring of the temperature in high-risk newborns. Measure and record baby's body temperature in all preterm babies and LBW babies on admission to NICU/SCBU
- In case of an emergency ensure warmth is maintained throughout the management for the emergency and thereafter
- In the postnatal period, teach the mother to prevent hypothermia by breastfeeding on demand, by dressing the baby appropriately for the ambient temperature and by using skin-to-skin contact if the baby is low birth weight

- When conducting the routine visit, check the temperature with a thermometer if the feet are cold, and re-warm the baby if the temperature is below 36.5° C. If the baby has cold feet in instances where a thermometer is not available, re-warm the baby
- When hyperthermia is suspected, check the temperature with a thermometer, assess the baby for danger signs remove some clothes and manage according to findings
- Assess and provide prompt treatment or refer infants with severe hypothermia/ hyperthermia or if any danger sign persist after normalization of the temperature
- Maintain records of the care given, including the babies H1163 Neonatal Examination Format/ H1164 NICU SCBU History Record Sheet, H1163 Neonatal Diagnosis Card, and NICU/SCBU admission register to aid continuity of care. Record temperature and treatment in the H1165 Neonatal Diagnosis Card
- Before discharge from the hospital teach the mother how to keep the baby warm at home, how to recognize hypothermia and hyperthermia, and when to seek help

Audit

Input indicators

- National standards and guidelines on prevention, detection and management of hypothermia and hyperthermia are available and are correctly implemented by health care providers
- The availability and use of thermometers and devices to re-warm a cold baby
- The availability of skilled attendants and other health workers with knowledge and skills to comply with warm chain guidelines

Process and Output Indicators

- The proportion of institutions practicing skin-to-skin contact at birth to prevent hypothermia
- Proportion of institutions keeping mother and baby together until the first breastfeed is over
- The number of institutions conducting in-service training on the principles of the warm chain
- Proportion of health workers and mothers who are aware about the importance of checking the baby's temperature and keeping the newborn baby warm
- Proportion of health workers and mothers who are skillful in identifying and managing hypothermia and hyperthermia in the newborn

Outcome Indicators

- Incidence of hypothermia and its complications in term babies
- Incidence of hypothermia and its complications in preterm babies
- Incidence of hyperthermia and its complications in LBW babies

References and Links

1. World Health Organization, 2008. *Essential Newborn Care Course training manual*, Geneva : WHO
2. Department of Making Pregnancy Safer, World Health Organization, 2006. *Pregnancy, childbirth, postpartum and newborn care : a guide for essential practice*, 2nd Edition. Geneva : WHO
3. World Health Organization, 2003. *Managing newborn problems : a guide for doctors, nurses, and midwives*. Geneva : WHO

Annexure 3

Warm Chain

- Warm delivery area
- Immediate drying
- Skin to skin contact
- Breastfeeding
- Delay checking weighing and bathing
- Cover with warm cloths and cot sheets
- Keep mother and baby together
- When transferring keep warm by skin to skin contact
- Make sure to keep warm when resuscitating
- Training and knowledge of thermal control

Abnormal body temperature

Hypothermia- baby's axillary temperature is less than 36.5°C

Temp $35-36.4^{\circ}\text{C}$ - Mild Hypothermia (cold stress)

Temp $32-35^{\circ}\text{C}$ - Moderate Hypothermia

Temp less than 32°C - Severe Hypothermia

Hyperthermia-

Baby's axillary temperature is more than 37.5°C

2.4 INITIATION OF BREATHING AND RESUSCITATION

The Standard

All women giving birth should be assisted by a person skilled (trained in NALS) in neonatal resuscitation and with access to the correct equipment for resuscitating newborn babies who do not breathe spontaneously. When a complication is anticipated, **additional skilled personnel** should be available to devote full attention to the baby

Aim

To reduce neonatal mortality and disability due to perinatal asphyxia

Requirement

- Availability of a national standards and guidelines on neonatal resuscitation and correct implementation
- All neonates and their mothers have access to immediate neonatal care at birth by a skilled attendant in the health facility
- Health workers in maternal and neonatal care, in particular **skilled attendants**, are available and are competent to: review the partograph to anticipate any risk of intrapartum hypoxia; assess the neonate and normal initiation of breathing; resuscitate and stabilize the newborn baby if necessary; and correctly use and maintain resuscitation equipment
- There is a functioning referral system through which all skilled attendants are linked to a NICU offering comprehensive neonatal care for newborn babies with severe perinatal asphyxia and respiratory distress
- A referral unit (NICU/SCBU) for babies in need of special care and treatment is available and accessible
- There are formats for recording the health and care of each neonate. This includes Neonatal Examination Format H 1162, NICU/SCBU Register H 1163, NICU/SCBU History Record Sheet H1164, Neonatal Diagnosis Card H1165 and CHDR to ensure continuity of care
- Equipment and supplies for resuscitation are available in the Labour Room and Operation Theater and are properly maintained (clean and functioning). Such equipment and supplies comprise as a minimum:
 - Radiant warmer with good light source
 - Minimum of 2 pre-warmed towels
 - Timer or Stop clock
 - Stethoscope
 - Sucker with sucker tubes (50 -100 mm mercury, FG 8, 10, 12 sizes) to be used only if needed

Self-inflating bag of 500ml or T piece resuscitator and three masks 0, 00 and 0/1
 Oropharyngeal airways in different sizes
 Endotracheal tubes (sizes 2.5, 3, 3.5)
 Neonatal Laryngoscope
 NaHCO₃
 Dextrose 10%
 Adrenaline
 Normal Saline
 Oxygen Source
 Cannule
 Feeding tubes and Umbilical catheters

- Families and communities have access to information on perinatal asphyxia and respiratory distress and on the importance of having a skilled attendant for assisting a baby who does not breathe spontaneously at birth

Applying the Standard

Health providers of maternal and neonatal care, in particular skilled birth attendants, must do the following tasks.

- Ensure that the need for resuscitation is anticipated by reviewing the risk factors; assessing foetal heart beat regularly during delivery and by using the partograph, keeping all equipment and supplies ready for use, and asking for a second skilled person to assist with the birth if a problem is anticipated and/or identified
- Provide immediate newborn care at birth (Standard 2 Immediate care of the newborn)
- Start the stop clock or note the time
- Assess the baby to ensure that breathing is satisfactory, within 1 minute
- If the baby is not breathing or is gasping, despite the stimulation provided by drying, call for help, proceed to initiate resuscitation and explain to the mother. Observe universal precautions to prevent infection. Keep the baby warm
- Resuscitation includes opening the airway by positioning the head in neutral position
- Suction should not be used routinely, if there is lot of mucus, amniotic fluid, blood or meconium, under direct vision suction should be used. Use suction while withdrawing the tube only. Do not use suction more than 100mm Hg. It may be useful to insert an oropharyngeal airway of the correct size to maintain a clear airway if jaw thrust fails.
- If still no breathing - **ventilate**, with the self-inflating bag via a soft fitted face mask of appropriate size, with air or oxygen
- Record the event and the treatment provided according to local guidelines and resuscitation procedures on the H1162 Neonatal Examination Format Part IC. Record the

Apgar score in H1162 Neonatal Examination Format Part A. If necessary transfer to the NICU/SCBU or to a referral center. Use the H1164 NICU/SCBU History Record Sheet or the H1166 Neonatal Transfer Form, respectively

- Stop the ventilation with bag and mask when spontaneous respiration is established or when baby starts crying and RR >30/min with no severe chest in-drawing. Monitor every 15 min for breathing and warmth
- If breathing <30 /min or severe chest in-drawing, slow heart rate, floppy, pale or cyanosed in colour, continue ventilating, arrange for advance resuscitation
- Keep the parents informed about the condition of the baby and what you are doing
- Advance resuscitation includes giving chest compression (3 chest compression to one ventilator breath) and administering drugs (Adrenaline, Sodium bicarbonate, Dextrose and 0.9%saline)
- **After (10) minutes of active assisted ventilation and advanced resuscitation if no breathing or gasping and no heart rate, stop ventilating after discussing with the senior colleague and explain to the mother. Give supportive care to the mother and record the event in the H1162 Neonatal Examination Format**

After successful resuscitation

- Babies who received chest compression should be sent to the SCBU
- Take care to prevent hypothermia and to observe standard precautions for preventing infections
- Monitor closely, paying particular attention to the prevention of hypothermia, establishment of breastfeeding and detection of danger signs
- Refer the baby immediately if conditions do not improve or any danger sign is identified during monitoring after resuscitation
- Keep the parents informed of the baby's condition, provide extra support to the mother for establishing breastfeeding, and explain possible danger signs in the hospital and at home
- When the baby is discharged from the hospital, give a H1165 Neonatal diagnosis card and arrange a follow-up visit as needed
- Inform the public health staff to follow up
- Record the findings of the follow-up visit

Audit

Input Indicators

- National standards and guidelines on neonatal resuscitation are in use
- Availability of skilled attendants who are competent in neonatal resuscitation
- Availability equipment in good working condition and supplies required for neonatal resuscitation

Process and Output Indicators

- The proportion of births assisted by a person with resuscitation skills
- The proportion of referrals to the NICU/SCBU
- Proportion of transfers out due to perinatal asphyxia

Outcome Indicators

- Neonatal mortality due to perinatal asphyxia
- Complications and neurological sequel due to perinatal asphyxia

References and Links

1. Perinatal Society of Sri Lanka and Family Health Bureau, Ministry of Health, 2008. *Resuscitation of the newborn baby : Course Manual*. Colombo : PSSSL
2. Resuscitation Council (UK), 2010. *2010 Resuscitation Guidelines*. London : Resuscitation Council (UK)

2.5 AVOIDING SEPERATION FROM THE MOTHER

The Standard

All newborn babies should, wherever possible, remain and be cared for together with the mother at all times. When referral of the mother or of the baby is necessary, mother and baby should be transferred together.

Aim

To reduce neonatal mortality and morbidity due to hypothermia, delayed or inappropriate feeding and infection.

Requirements

- Availability of National standards and guidelines on avoiding separation of newborn babies from their mothers and they are correctly implemented
- Availability of Written guidelines on how to practice 24-hour rooming-in/bedding-in and kangaroo mother care (KMC) for low birth weight babies and they are correctly implemented by health care workers
- Availability of Birth attendants and other health care workers providing maternal and newborn care who know the importance of not separating mothers and babies and the principles of KMC
- Institutions are organized to avoid separation of the mother and baby in the labour room and in the postnatal ward. Mother – Baby Centers are established in the institutions
- Allow 24-hour rooming-in / bedding-in and KMC for low-birth-weight/small newborns
- Availability of a functioning referral system that ensures that mothers accompany their babies during any necessary referrals and they are and affordable
- Availability of Mother Baby Centers for mothers and babies in need of special care and treatment in the Base Hospitals and above.
- Health education activities are carried out during the antenatal period to improve the awareness of mothers, families and communities of the importance of not separating mothers and newborn infants, particularly at birth and in the first hours after birth

Applying the Standard

Birth attendants and other health care workers caring for mothers and newborns at institutions and at home must:

- Prevent newborn babies becoming separated from their mothers. Do not admit all the premature and/or low birth weight babies to the SCBU
- At birth and during the first few hours of life, keep the baby in skin-to-skin contact with the mother to prevent hypothermia and to facilitate stabilization and breastfeeding. After a normal delivery unless the baby and/or mother has any problem do not keep the baby in the warmer. Newborn can be kept skin-to-skin with the mother even during procedures such as suturing episiotomy. Even after Caesarian Section (CS) ; provided the mother and baby are well, keep baby with mother and transfer the newborn skin-to-skin with mother to the ward
- Encourage the mother to stay together with her baby, preferably in the same bed, in a warm room (at least 25°C/77°F) for the first 12-24 hours. Post CS mothers also should be allowed to keep their babies in the same bed
- Assist mothers of low-birth-weight babies, in the ward and during referrals, to practice skin-to-skin contact (KMC) as long as possible until the condition of the baby improves, or they reach a hospital where the baby can receive special care
- If the baby needs to be referred, for example for special care, give the mother the opportunity to accompany her baby; if the mother is transferred, allow the baby to go with her
- If referral of mother and baby together is not possible, and/or when separation is necessary, keep the mother fully informed of all events and procedures and allow her to see her baby freely
- If a mother requests separation from her baby, explore the reasons sensitively and respect her wishes

Audit

Input Indicators

- Availability of National standards and guidelines on keeping the mother and baby together and on KMC for the care of low birth weight/small infants in health institutions and are correctly implemented

- Availability of facilities (guidelines, rooms/space in the wards, beds, staff, etc.) to allow 24-hour rooming-in
- Availability of facilities (guidelines, rooms/space in the wards, beds, staff, etc.) to provide KMC for low birth weight/small infants
- Availability of Mother Baby Centers in the hospitals
- Availability of Skilled Birth Attendants trained in Essential Newborn Care and Kangaroo Mother Care

Process and Output Indicators

- The proportion of institutions offering 24-hour rooming-in/bedding-in facilities
- The proportion of institutions offering KMC for low-birth-weight/small infants
- The proportion of institutions documenting the reasons for separating a mother from her baby in the Obstetric BHT and H1162 Neonatal Examination Format
- Proportion of institutions with Mother Baby Center Facilities
- Proportion of staff trained in Essential Newborn Care and Kangaroo Mother Care

Outcome Indicators

- Incidence of neonatal infections
- Incidence of cord infections
- The proportion of newborn babies with hypothermia within the first 24 hours of life
- The proportion of babies with hypothermia on admission to the referral hospital out of all the babies transferred in
- The proportion of low birth weight infants who develop hypothermia, infection or feeding problems
- Case fatality rate due to infection, hypothermia and feeding problems
- The proportion of mothers exclusively breastfeeding their babies at the time of discharge

References and Links

1. World Health Organization, 1998. *Postpartum care of the mother and newborn: a practical guide*. Geneva: WHO
2. Anderson GC et al. *Early skin-to-skin contact for mothers and their healthy newborn infants* (Cochrane Review). In: The Cochrane Library, Issue 4, 2004. Chichester, John Wiley & Sons, 2004.
3. Department of Making Pregnancy Safer, World Health Organization, 2006. *Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice, 2nd Edition*. Geneva: WHO
4. World Health Organization, 2003. *Managing newborn problems: a guide for doctors, nurses, and midwives*. Geneva: WHO
5. Family Health Bureau, 2007. *WHO Essential Newborn Care Course*. Colombo: Family Health Bureau
6. World Health Organization, 2003. *Kangaroo mother care: A practical guide*. Geneva: WHO
7. World Health Organization, 1997. *Thermal protection of the newborn: a practical guide*. Geneva: WHO

2.6 BREASTFEEDING

The Standard

All mothers should receive skilled practical help with early and exclusive breastfeeding, and full information on the benefits of breastfeeding should be made available to them and their families

Aim

To reduce neonatal mortality and morbidity due to inappropriate feeding practices by promoting, protecting and supporting initiation of breastfeeding within one hour of birth and exclusive breastfeeding up to complete six months and continued breastfeeding for up to two years of age or beyond with adequate and safe complementary feeding.

Requirements

- Availability of National policy, legislation, standards and guidelines to protect, promote and support breastfeeding (including the Sri Lanka Code for the promotion, protection and support of breastfeeding and marketing of designated products and subsequent relevant World Health Assembly resolutions and Codex Alimentarius standards) and they are correctly implemented
- Availability of written policy to promote and support exclusive breastfeeding and its implementation in health institutions and is regularly monitored
- Health care workers are available and competent to give advice and to support mothers to initiate and establish exclusive breastfeeding at birth and to sustain it during the postpartum period and beyond
- The necessary equipment and supplies are available to demonstrate to mothers how to establish and maintain exclusive breastfeeding
- Women and their families have access to information on the importance of early and exclusive breastfeeding
- Breastfeeding counseling services are available for women, families and communities to ensure early and exclusive breastfeeding
- Newborn babies who are not breastfed (for whatever reason) receive special attention from the health and social welfare system, since they constitute a risk group
- The establishment and maintenance of early and exclusive breastfeeding is monitored and reasons for its non-initiation and discontinuation are recorded in H 1162 Neonatal Examination Format and in a H1165 Neonatal Diagnosis Card
- Lactation Management Centers established in all the specialist institutions to provide extra support to the mother to continue breastfeeding
- Availability of Infant feeding guideline for HIV positive mothers.
- Availability of Mother support groups in the MOH.

Applying the Standard

Health workers, skilled attendants in particular, must perform the following tasks

- As part of antenatal care, counsel all pregnant women on the benefits of early and exclusive breastfeeding and the risks of formula feeding. Any concerns that the woman may have should be addressed
- At birth, help provided to initiate breastfeeding when the baby is ready and maintain exclusive breastfeeding. This comprises: placing the baby in skin-to-skin contact with the mother; explaining that the baby usually begins breastfeeding spontaneously within one hour when he is ready; assessing and helping with correct positioning and attachment to the breast; and addressing any concerns the mother may have, including those related to giving colostrum to the baby
- Extra support should be provided to primi mothers, after caesarian section, adolescent mothers, women with small or sick babies, those with abnormalities involving face and palate and GIT obstruction and malformation. If not suckling (after 6 hrs of age) or stopped feeding refer baby urgently
- Advise the mother that pre-lacteal feeds, water, teas or other fluids or foods are not needed by breastfeeding babies, that breastfeeding should not be restricted, and that the feeding pattern should respect the baby's demands (8 times or more during 24 hrs, on demand day and night)
- In the postnatal period, assess breastfeeding routinely and provide support as needed
- Lactation Management Centers with health workers trained in Lactation Management Counselling should be available (preferably 24hour service) in health institutions to provide extra support to the mother to continue breastfeeding
- If the pregnant woman is HIV-positive, refer infant feeding guidelines for HIV- positive mothers
- New mother access the mother support groups established in the MOH area

Audit

Input Indicators

- Availability of written policy and guidelines on early and exclusive breastfeeding in the health institution

Process and Output Indicators

- The proportion of health institutions practicing early skin-to-skin care
- The proportion of health workers caring for newborns in institutions have been trained in breastfeeding counseling
- The proportion of institutions that have breastfeeding assessment as part of the routine examination of the neonate
- The proportion of health care providers receiving regular updating in promoting, protecting and supporting exclusive breastfeeding
- Initial and continuation rates of exclusive breastfeeding are monitored or audited by follow-up questionnaire/interview and review of records

Outcome Indicators

- Proportion of newborn babies breastfed in the first hour after birth
- Proportion of newborn babies who are breastfed exclusively at the time of discharge
- Proportion of infants of age who are exclusively breastfed at six months
- Degree of awareness of the mother, her partner and her family of the benefits of exclusive breastfeeding for complete six months and continuation of breastfeeding up to two years and beyond

References and Links

1. World Health Organization, 1998. *Postpartum care of the mother and newborn: a practical guide*. Geneva: WHO
2. World Health Organization, 2003. *Global Strategy for Infant and Young Child Feeding*. Geneva: WHO
3. Ministry of Healthcare and Nutrition, 2010. *National Nutrition Policy of Sri Lanka*. Colombo: Ministry of Healthcare and Nutrition
4. *Sri Lanka Code for Protection, Promotion and Support of Breastfeeding and Marketing of Designated Products ; (Amended Code – 2002)*, 2004. Colombo: Ministry of Healthcare and Nutrition and Uva Wellassa Development
5. World Health Organization and UNICEF, 2009. *Baby Friendly Hospital Initiative: Revised updated for integrated care, A 20 hour course for maternity staff*, Geneva: WHO

6. Family Health Bureau, Ministry of Health, 2012. *Building and other guidelines for Neonatal Intensive Care Units, Special Care Baby Units and Mother Baby Centers*. Colombo: Family Health Bureau
7. Department of Making Pregnancy Safer, World Health Organization, 2006. *Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice*, 2nd Edition. Geneva: WHO
8. World Health Organization, 1993. *Breastfeeding Counselling: A Training Course*. Geneva: WHO
9. World Health Organization, 1998. *Evidence for the ten steps to successful breastfeeding*. Geneva: WHO

3.CARE OF THE NEWBORN DURING THE FIRST 12-24 HOURS

The Standard

During the first 12–24 hours after birth, all newborn babies should be carefully observed by a skilled attendant, their state of health should be regularly monitored, and the mother should receive advice on exclusive breastfeeding and appropriate infant care. All newborn babies should be examined by a medical officer within first 24 hrs and before they are discharged.

Aim

To ensure the infant's normal adaptation to extrauterine life, to prevent, detect in good time and manage complications likely to occur in the first day of life and to reassure the mother

Requirements

- National standards and locally adapted guidelines on newborn care during the first 12–24 hours are available and are correctly implemented by birth attendants
- All newborns and their mothers have access to care by skilled health workers during the first 12–24 hours after birth
- Health workers in the institutions providing maternity and newborn care are competent to review maternal and birth records and interview the mother to detect possible neonatal problems; conduct a complete physical examination of the newborn infant to identify major problems; monitor the breathing, temperature and general condition of the baby during stabilization; assess breastfeeding and provide support to the mother to, establish and maintain exclusive breastfeeding; provide care for mild problems; identify and manage correctly complications requiring referral; counsel the mother/family on danger signs and essential newborn care; Immunize the baby with BCG and advise the mother to inform her area Public Health Midwife (PHM) for follow up at home
- Essential equipment, drugs and supplies to provide basic and pre-referral emergency care for the newborn infant are available in the institution
- A functioning referral system is in place for babies in need of special care and treatment
- A mechanism is available for reviewing past care and recording the current care of each child. This includes baby's H1162 Neonatal Examination Format, H1164 NICU/SCBU History Record Sheet where relevant to aid continuity of care

- Health education activities are conducted to increase community awareness of the needs of the baby in the first day of life and importance of skilled care

Applying the Standard

Skilled attendants, after moving the mother and baby to the postnatal ward, must perform the following tasks;

- Review the most important aspects of the mother's history to identify recent infections or any other medical problems that warranted medical attention during pregnancy
- Review the section 1A and 1B of the H1162 Neonatal Examination Format for information such as rupture of membranes, duration of labour, fever, birth asphyxia, need for resuscitation, prophylaxis at birth and birth weight, to identify at risk conditions
- Wash hands below elbow with water and soap and wipe using disposable hand towels before and after examining the newborn infant. In between examination of uninfected babies alcohol hand rub should be used
- Examine the baby within the first few hours of life to identify congenital anomalies, birth injuries, prematurity or low birth weight, signs of infection and state of adaptation (breathing, temperature and initiation of breastfeeding) and complete Part II of the Neonatal Examination Format (H 1162). It is mandatory that a medical officer perform neonatal examination in every newborn within 24 hours
- Monitor the baby's state of health, in particular temperature, breathing and breastfeeding, every 4–6 hours
- Provide information and support to the mother and father particularly if she is a young primipara; including counselling and advice on exclusive breastfeeding, hygiene, cord care, how to keep the baby warm, and when and where to seek care
- Re-examine the baby at time of discharge from the hospital and complete the discharge check list of the Neonatal Examination Format (H 1162), considering particularly breastfeeding, cord, skin, activity, parental competence, immunization etc
- Ensure vitamin K is given after birth and the BCG vaccination is given on Day 1
- Ensure that the baby is kept warm and feeds well, and is kept close to the mother

- Advise the mother to inform the area PHM as soon she goes home for further follow up

Audit

Input Indicators

- Availability of national standards and guidelines for providing neonatal care during the first 12-24 hours in health institution
- Availability of equipment and supplies to provide postnatal care during the first 12-24 hours
- Skilled attendants are available to provide neonatal care
- A referral system is in place

Process and Output Indicators

- The proportion of newborn infants receiving neonatal care by a skilled attendant during the first 12–24 hours
- The proportion of health institutions providing “**routine care**” during the first 12–24 hours
- Proportion of institutions that provide vitamin K to all the newborns
- Proportion of institutions that have adequate member of CHDR in the institution (Newborn Formats and/or CHDR)
- Proportion of institutions conducting newborn examination in all the newborns prior to discharge
- Proportion of institutions that complete all the sections of the Neonatal Examination Format (H 1162) prior to discharge
- Proportion of newborns in whom breastfeeding is established prior to discharge
- The proportion of mothers who received information on breastfeeding and infant care

Outcome Indicators

- Neonatal mortality in the first 12–24 hours after birth
- Incidence of hypothermia in the institution
- Percentage of newborns exclusively breastfed at the time of discharge from the hospital
- Early detection and prompt treatment or referral of newborn infants with complications and diseases occurring in the first 12–24 hours after birth
- Awareness of families of babies’ needs and danger signs
- Awareness of families of danger signs in the newborn

References and Links

1. Lawn J, Cousens S, Zupan J. 2005. *Four million neonatal deaths: Where? When? Why?*, 2005. Lancet Neonatal Survival Series, 9-18
2. Department of Making Pregnancy Safer, World Health Organization, 2006. *Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice*, 2nd Edition. Geneva: WHO
3. Family Health Bureau, 2007. *WHO Essential Newborn Care Course*. Colombo: Family Health Bureau
4. World Health Organization, 2003. *Managing newborn problems: a guide for doctors, nurses, and midwives*. Geneva: WHO

4. ROUTINE POSTNATAL CARE OF THE NEWBORN

The Standard

Following discharge the newborn should receive a postnatal visit from the PHM without delay. The postnatal visit comprise of physical examination and assessment of breastfeeding. Whenever a complication or disease is suspected, the baby should be referred to the MOH or to the closest hospital. Until discharge from the hospital the newborn should be taken care of by the institutional staff.

Aim

To reduce morbidity and mortality in the neonatal period by providing appropriate care during postnatal period and detecting and managing complications without delay.

Requirements

- Availability of National standard and guidelines on routine postnatal care for the newborn and are they correctly implemented
- The PHM visits the newborn at home as early as possible. PHM should make at least 2 visits during the first ten days and 1 visit between 15 to 21 days. The newborn should be brought to the postnatal clinic at the MOH office at 4 – 5 weeks
- In case of newborns with problems, discharged later from hospital, PHM should make the first visit **as early as possible**; preferably within the first three days after the newborn arrive home. She should make more visits to such newborns as per requirement
- PHMM are available and competent in providing postnatal care for the newborn (assessment and examination of the newborn; assessing a breast feed, promoting and supporting exclusive breastfeeding; support mothers to overcome difficulties in breastfeeding, recognition of the neonatal complications; advice on hygiene, nutrition, cord care and danger signs; preparation and administration of neonatal medications prescribed by a medical practitioner; when and how to refer the baby; and when and how to immunize the baby)
- When a newborn remains in the hospital for a longer period health workers in the institutions provide above care to the newborns until discharged from the hospital
- Equipment, supplies (examination table, baby weighing scale, paediatric stethoscope, heat source, room thermometer, measuring tape, ophthalmoscope), BCG vaccines and drugs for treating mild complications and for providing emergency treatment are available in the institutions

- A functioning referral system for the hospitals exists that ensures that comprehensive neonatal care is available and that babies in need of special care and treatment have access to LMC/SCBU/NICU
- A mechanism is in place for recording care, including H1162 Neonatal Examination Formats, H1166 Neonatal Transfer Forms (Institutions) and Child Health Development Records to ensure continuity of care
- Health education activities are carried out to increase the awareness of parents, caregivers, families and the community of the postnatal support and care needed by mothers and their babies

Applying the Standard

Providers of maternal and neonatal health care

- Public Health Midwife should make a postnatal visit **as early as possible**, preferably within the first three days after the newborn arrive home. Within the first ten days, 2 visits have to be made to the mother and baby at home, and when necessary more visits have to be made during this time or even later
- In case of babies who had problems during perinatal period eg. Premature baby, baby with feeding problem, baby who goes home with a NG tube, write a referral letter to the PHM/MOH in the local language and attach to the CHDR
- Assess and examine the baby, noting general condition and checking in particular cord, skin and breathing
- Assess breastfeeding and support the mother to resolve any problems or concerns, and promote and support exclusive breastfeeding
- Advise on the baby's hygiene, general care, breastfeeding and on keeping the baby warm
- Check whether BCG vaccination and Vitamin K are given
- Identify any complications, discuss with the mother, and refer the baby as needed
- Advise caregivers on recognizing danger signs and discuss options for seeking care if needed
- Arrange an appointment for the next routine home visit. If necessary arrange for additional home visits eg; to support breastfeeding
- Ensure that routine postnatal care is offered to the mother at the same time
- For babies staying in the hospital for longer durations, routine postnatal care should be provided by the health care providers in the hospital
- The newborn should be assessed at the postnatal clinic of the MOH at 4 weeks according to guidelines

Audit

Input Indicators

- Availability of a national standards and guidelines on postnatal care
- Skilled attendants are available in the institutions and at field to provide postnatal care to the newborn
- Basic equipment and supplies (examination table, baby weighing scale, paediatric stethoscope, thermometer) required for examination of the newborn are available in the institutions and at field clinic centers

Process and Output Indicators

- The proportion of neonates visited by the PHM at least once within the first ten days of life
- The proportion of neonates with complications identified at a postnatal domiciliary visit who are correctly referred to the MOH clinic or to the institutional referral clinic
- The proportion of neonates who are exclusively breastfed at one month
- The proportion of babies seen by the MOH at the postnatal clinic at 4 weeks

Outcome Indicators

- Early Neonatal mortality.
- Incidence of neonatal morbidities
- Exclusive breastfeeding rates of infants up to 6 months

References and Links

1. Family Health Bureau, Ministry of Health Care and Nutrition, 2007. *Postpartum Care Guide*. Colombo: Family Health Bureau
2. World Health Organization, 2009. *Postpartum care of the mother and newborn: a practical Guide*. Geneva, WHO
3. Lawn J, Cousens S, Zupan J. 2005. *Four million neonatal deaths: Where? When? Why?*, 2005. Lancet Neonatal Survival Series, 9-18

5. CARE OF THE HIGH RISK NEWBORN

5.1 MANAGEMENT OF PRETERM AND LOW BIRTHWEIGHT NEONATES

The Standard

All preterm and low birth weight (LBW) neonates should receive additional care and, if very preterm or very low in weight, should be referred together with the mother to a referral hospital with a NICU/SCBU

Aim

To reduce neonatal mortality and morbidity due to low birth weight and prematurity

Requirements

- Availability of National standards and guidelines on the care, referral and follow-up of preterm and LBW infants and they are consistent with accessibility to a referral hospital and are correctly implemented
- All newborns and their mothers have access to skilled care at birth and during the postnatal period
- Skill birth attendants are available and are competent to identify preterm and LBW infants; assess their general condition; respond to their special needs (prevention and treatment of hypothermia and infection, feeding, monitoring of health status and follow-up); practice Kangaroo Mother Care (skin-to-skin contact, frequent breastfeeding, support for the mother, monitoring and follow-up and ensure their proper referral as necessary
- Availability of Minimum equipment in the referring center (weighing scales, thermometer, warmers, ambu bags), supplies (clean water, soap, a room where mother and baby can stay together) and drugs and oxygen for the care and treatment of preterm and LBW babies
- PHM is linked to the MOH and the closest hospital offering comprehensive neonatal care for LBW and preterm infants
- A referral hospital with NICU is accessible and well equipped to care for very preterm and very LBW babies in need of special care
- Mother Baby Centers available in the hospitals to prepare mother and baby for the discharge

- A recording system and supervision are in place to monitor and evaluate outcomes of preterm and LBW infants
- Health promotion activities are carried out to increase community awareness of the needs of preterm and LBW and their mothers

Applying the Standard

Health care providers and skilled attendants in particular, must:

- Weigh all newborn babies at birth and classify them by weight risk group and/or gestational age risk group according to guidelines;

Weight risk group

Less than 2500g – Low birth weight

1500 - < 2500g at birth - Very Low Birth Weight

<1500 – Extremely Low Birth Weight

Gestational age risk group

Preterm - < 37 weeks

Very preterm – 28 - 32weeks

Extreme preterm - < 28 weeks

- Consider referring those with birth weights less than 1500g and very pre term less than 32 weeks preferably with the mother whenever possible, to a hospital with a NICU. Ensure extra warmth during referral
- Refer both baby and mother to a higher level of care if there is any danger sign (breathing problems, difficult feeding, resistant hypothermia, fever, convulsion, ‘not looking well’)
- For transport of pre term and LBW babies ideally in a transport incubator. If not available using skin-to-skin contact or other suitable method to prevent hypothermia
- Babies < 32 weeks can be delivered into a hygienic transparent polythene bag **only up to neck level**. Cover the head with a head cap. Baby can be transported in the bag with a head cap
- On referral always send the baby with a duly filled Neonatal Transfer Form (H 1166)
- Where referral is not possible, the referral hospital is not equipped, or the infant is only moderately preterm, use KMC as the preferable form of care;
- Be particularly careful to ensure thermal protection: the room should be warm (not less than 25°C with no draught), when the baby is stable support the mother to provide KMC as long as possible. Advise use of extra clothes, socks, cap, blankets, when not with the mother, especially during the first weeks of life; Wash or bathe in a warm room, in warm water. Dry immediately and thoroughly. Keep warm. Small babies only wash as needed (face, neck, armpits, groins, buttocks), check frequently the feet for warmth to monitor the baby’s temperature regularly

- Provide extra support to the mother in establishing and maintaining breastfeeding, making use of expressed breast milk using alternative methods (eg; cups, spoon, syringe) if the infant is not suckling well, weigh the infant daily; Special support should be provided to breastfeed twins
- Pay special attention to prevent infection, including washing hands before handling the baby and using alcohol hand rub in between, providing care in a clean environment and ensuring close contact with the mother
- Antibiotics should be used rationally
- Monitor the baby's general health status as required
- Keep the mother and baby together in the hospital until the baby has an adequate weight gain, and visit daily/as required if the baby is at home;
- Vaccinate the baby with BCG before discharge, and continue the routine vaccination regime
- Explain to the mother the importance of follow-up, and arrange an appointment for a follow up visit as required
- Discharge and/or refer mother and baby with complete records (Neonatal Diagnosis Card; H 1165 at discharge and Neonatal Transfer Form H 1166at transfer);
- Conduct follow-up according to local guidelines, (two visits by the PHM on first 10 days, 1 visit between 15 – 21 days and additional visits if required) until the baby reaches 2500g, and refer the baby to higher level of care if any danger sign or failure to thrive is detected during follow-up
- Provide the mother and family with all necessary information on the baby's condition, treatment required at home and in the hospital, and follow-up; and
- Record the diagnosis and treatment on the NICU/SCBU Admission Register, the Neonatal Diagnosis Card H 1165and the Child Health Development Record

Audit

Input Indicators

- National standards and guidelines on the management of LBW and preterm babies are available and are correctly implemented
- Health providers are available and competent in the care of preterm and LBW babies, including KMC

Process and Output Indicator

- The proportion of preterm/LBW infants identified
- The proportion of preterm/LBW infants referred
- The proportion of health facilities practicing KMC for the care of preterm and LBW babies

- The proportion of mothers of preterm/LBW babies who know about and practice KMC

Outcome Indicators

- Neonatal mortality rate of preterm babies
- Neonatal mortality of LBW babies
- Confidence of health providers and families in the care and survival of preterm and LBW infants
- Morbidities in preterm infants
- Morbidities in LBW infants

References and Links

1. Department of Making Pregnancy Safer, World Health Organization, 2006. *Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice, 2nd Edition*. Geneva: WHO
2. World Health Organization, 2003. *Managing newborn problems: a guide for doctors, nurses, and midwives*. Geneva: WHO
3. World Health Organization, 2003. *Kangaroo mother care. A practical guide*. Geneva: WHO
4. Family Health Bureau, Ministry of Health, 2012. Building and other guidelines for Neonatal Intensive Care Units, Special Care Baby Units and Mother Baby Centers. Colombo: Family Health Bureau

5.2 MANAGEMENT OF NEONATAL INFECTIONS

The Standard

All neonates with infections, whether born at a health institution or at home, should be given immediate attention and treated with antibiotics or referred. Such infants should also be assessed for thermal instability (hypothermia or fever) and feeding problems and treated accordingly

Aim

To reduce neonatal mortality, morbidity and disability due to neonatal infections

Requirements

- Availability of National standards and guidelines on the diagnosis and management of infections in newborn infants and they are correctly implemented
- All neonates and their mothers have access to skilled care during delivery and the postnatal period
- Providers are competent in infection control measures in the Labour Room, NICU, SCBU and Postnatal Wards
- Providers of maternal and neonatal health care are available and are competent in: causes of infection in the neonatal period; signs and symptoms of infection in the newborn infant; examination of the neonate to detect signs of infection; supportive care and treatment before referral, in health facilities or at home; when and how to refer an infant with infection; and how to communicate with parents and families about danger signs and seeking care
- Antibiotics, equipment and proper supplies for treating neonatal infections are available at all levels of care
- Availability of laboratory facilities to diagnose and monitor neonatal infections
- There is a functioning referral system that ensures that all skilled attendants and health providers in primary care facilities are linked to a referral centre offering comprehensive neonatal care for cases of severe neonatal infection
- A referral unit with the capacity to treat severe neonatal infections is available and accessible
- A space for “isolation area” for septic babies should be available in all the NICU/SCBU
- One to one nursing care has to be ensured to all newborns who are receiving NICU care
- A mechanism is available for recording the care given to each neonate. This includes
 - NICU/SCBU Admission Register (with rates of neonatal infection and deaths), duly filled H1164 NICU/SCBU History Record Sheets, H1166 Neonatal Transfer Forms, as well as H1165 Neonatal Diagnosis Cards to ensure continuity of care

- Health promotion activities are carried out to increase community awareness of the importance of seeking care when a newborn infant shows signs of infection
- Monitoring system for infection control has to be available in LR, NICU/SCBU and Postnatal Wards

Applying the Standard

Providers of maternal and neonatal health care, in particular skilled attendants must:

- Provide parents and families with appropriate information on the danger signs of neonatal infections, and on when and where to seek care, at all opportunities (at birth, before discharge and during postnatal visits);
- Assess the condition of the neonate at birth to exclude infections
- Review maternal and neonatal records, examine the baby to identify risk factors and danger signs of infection before leaving the mother and baby alone after birth, and monitor the infant's condition during the first 12–24 hours after birth
- During the postnatal visit, ask the mother about the baby's condition, and weigh and examine the baby to identify risk factors and danger signs of infection, paying particular attention if the mother complains that the baby is not well
- If the baby has signs of local infection (eye infections, skin infections – pustules or blisters, thrush infections), refer to a medical officer for treatment and advise the mother and follow up after 2–3 days
- If the infant has signs of systemic infection refer newborn baby immediately to the closest hospital for medical attention. Provide supportive care to correct hypothermia, fever, hypoglycaemia and/ or feeding problems, and refer immediately to a hospital with specialized care.
- For neonates with infections monitor progress by regular investigations such as CRP
- If any risk factor is identified (such as prolonged rupture of membranes for more than 18 hours) and the baby is asymptomatic (do we start antibiotics anyway??) take deep ear swab at birth for culture and sensitivity, observe or treat the baby accordingly or refer
- Provide the parents and the family with all necessary information on the baby's condition, any necessary treatment at home or at the health institution, and follow-up; and record the diagnosis and the treatment in the Neonatal Formats, H1165 Neonatal Diagnosis Card and the CHDR

Audit

Input Indicators

- Availability of guidelines on infection control, diagnosis, treatment and referral
- Availability of standard neonatal culture bottles
- Availability of antibiotics and supplies suitable for treating newborn infants
- Availability of staff competent to deal with neonatal infections and to communicate with parents and families regarding danger signs and care-seeking
- Availability of support materials for communicating danger signs to parents and families
- Availability of functioning transport system for neonatal emergencies

Process and Output Indicators

- The proportion of neonates with infections correctly diagnosed
- The proportion of neonates with infection correctly treated or referred

Outcome Indicators

- Neonatal mortality due to infections
- Disabilities due to neonatal infections

References and Links

1. Lawn J, Cousens S, Zupan J. 2005. *Four million neonatal deaths: Where? When? Why?*, 2005. Lancet Neonatal Survival Series, 9-18
2. World Health Organization, 2003. *Managing newborn problems: a guide for doctors, nurses, and midwives*. Geneva: WHO
3. Department of Making Pregnancy Safer, World Health Organization, 2006. *Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice*, 2nd Edition. Geneva: WHO
4. Family Health Bureau, Ministry of Healthcare and Nutrition. 2007. *Postnatal Care Guide*. Colombo: Family Health Bureau

5.3 MANAGEMENT OF BIRTH TRAUMA

The Standard

All neonates diagnosed with major birth trauma should be given immediate attention to prevent deterioration of health status and to avoid pain and should be referred, with the mother, to a unit where they can receive special care. During referral all measures to prevent hypothermia, pain, infection and hypoglycaemia should be promoted and implemented

Aim

To reduce neonatal mortality, morbidity and disability due to birth trauma

Requirements

- Availability of National standards and locally adapted guidelines on management of neonates with birth trauma are available and are correctly implemented
- All neonates and their mothers have access to skilled care at birth and during the postnatal period
- Health providers of maternal and neonatal care, in particular skilled attendants, are available and are competent in: causes of birth trauma; signs and symptoms of birth trauma; examination of the neonate to detect birth trauma; supportive care, monitoring and treatment before and during referral; when and how to refer a neonate with birth trauma; and how to communicate with parents and families in the event of birth trauma
- Equipment, supplies and drugs are available for providing first aid in the case of birth trauma
- A functioning referral system is in place that ensures that all skilled attendants are linked to a referral centre offering comprehensive neonatal care
- A referral unit is available and accessible, where special care can be provided in the case of severe birth trauma
- A mechanism is available for recording the care given to each neonate. This includes the Birth Register (which must include rate of birth trauma, types of injury and deaths), referral records, and babies' neonatal diagnosis cards to ensure continuity of care

Applying the Standard

Health care providers of maternal and neonatal care, in particular skilled attendants, must:

- Carefully examine all neonates at birth to exclude birth injuries

- If a major injury is identified, take immediate measures to prevent pain and deterioration in health status
- Refer the baby together with the mother to a centre where special care is available. A Neonatal Transfer Form (H 1166)with details of labour, delivery, initiation of breathing and care provided should accompany the baby
- If referral is not possible, observe the baby for at least 24 hours, paying particular attention to prevention of hypothermia, establishment of breastfeeding and the absence of anaemia, convulsions or any danger sign. All these conditions should be excluded and breastfeeding should be well-established before the baby is discharged from the health facility. Referral should always be possible- there should be no situation where the baby is sent home with serious birth trauma because he/she could not be referred
- Parents should be advised about possible complications and the need to seek help if any danger sign occurs at home
- Records should be kept of birth injuries and related referrals, in the Birth Register, and Neonatal Formats.
- Audits of neonatal morbidity should also be held in the institutions
- Maintain a birth trauma register in the institution
- Maintain a disability register in the institutions for follow up of patients

Audit

Input Indicators

- The availability of guidelines on birth trauma in health facilities
- The availability of health providers who know when, where and how to refer neonates with major birth trauma.
- A referral facility is accessible to the health institution
- Health facilities keep records on rate of birth trauma, type of injury, deaths and referrals

Process and Output Indicators

- The proportion of neonates with birth trauma
- The proportion of neonates with birth trauma treated or referred

Outcome Indicators

- Mortality due to complications of birth trauma
- Disability due to birth trauma

References and Links

1. World Health Organization, 2003. *Managing complications in pregnancy and childbirth. A guide for midwives and doctors*. Geneva: WHO

2. World Health Organization, 1998. *Postpartum care of the mother and newborn: a practical guide*. Geneva: WHO
3. Family Health Bureau, 2006. *Postpartum Care Guide*. Colombo: Family Health Bureau
4. Department of Making Pregnancy Safer, World Health Organization, 2006. *Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice, 2nd Edition*. Geneva: WHO

5.4 Management of congenital abnormalities (birth defects)

The Standard

All neonates with major congenital anomalies should receive immediate care to prevent deterioration in health status and to avoid pain, and should be referred to a unit where further diagnosis, special care and parental counselling can be provided. When treatment is impossible, priority should be given to providing the parents with information and emotional support

Aim

To reduce neonatal mortality, morbidity and disability due to congenital anomalies

Requirements

- National standards and locally adapted guidelines on management of congenital anomalies, with a clear indication of treatable birth defects are available in health institution and are correctly implemented
- Health care providers, and skilled attendants in particular, are available and are competent in: examination of the neonate; recognition, care and referral of newborn infants with birth defects; and communication and counselling of the parents of newborn infants with congenital anomalies.
- Equipment, supplies and drugs are available for providing immediate care to neonates with congenital anomalies and job aids are available to assist health providers in recognizing the birth defect
- A functioning system is in place that ensures any necessary referral to a specialist centre offering special care
- A referral unit with diagnostic and surgical capacity is accessible and affordable.
- A mechanism is available for recording malformations and care in order to improve the identification and treatment of congenital anomalies
- Health promotion activities are carried out on the prevention and management of congenital anomalies

Applying the Standard

Health providers, and skilled attendants in particular, must:

- Carefully examine all infants at birth to exclude congenital anomalies;
- Whenever a birth defect is identified, provide proper care for the baby to prevent deterioration in health status and to avoid pain;

- deterioration in health status and to avoid pain;
- Inform the parents when a congenital anomaly is identified, and provide emotional support and counselling according to local guidelines and options for correcting the birth defect;
- If necessary, refer the infant to a referral centre with good diagnostic and surgical capacity if available and, if the infant's conditions permits, refer the infant with the mother for further diagnosis, treatment and parental counselling;
- Record and report all congenital anomalies according to service guidelines (contributions to national data base – birth defects registry)

Audit

Input Indicators

- National standards and locally adapted guidelines on the management of congenital anomalies are available
- Congenital anomalies are regularly recorded and reported
- Health care providers know when, how and where to refer a newborn infant with a birth defect
- Health care providers have the basic communication skills to inform and provide emotional support to parents

Process and Output Indicators

- The proportion of infants with congenital anomalies receiving correct treatment and/or referral

Outcome Indicators

- Mortality due to complication of birth trauma
- Disability due to birth trauma

References and Links

1. World Health Organization, 2003. *Managing complications in pregnancy and childbirth. A guide for midwives and doctors*. Geneva: WHO
2. Family Health Bureau, 2007. *WHO Essential Newborn Care Course*. Colombo: FHB
3. Department of Making Pregnancy Safer, World Health Organization, 2006. *Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice, 2nd Edition*. Geneva: WHO