

KINGDOM OF CAMBODIA
Nation Religion King

(Logo)

Ministry of Health

**National Safe Motherhood Clinical
Management Protocols
For Referral Hospitals**

3rd Edition
June 2020

PREFACE

National Safe Motherhood Clinical Management Protocols is a clinical guide for health workers who provide antenatal, labor, delivery, postpartum and newborn care.

National Safe Motherhood Clinical Management Protocols for this referral hospital has been prepared in accordance with the guideline of the complementary package of activities and a minimum package of activities, National Health Strategies and Strategies or any National Guideline related to the reproductive health and sexual health, mother-child, and nutrition.

With the new advancement of a national policy such as guideline for implementing the service package of antenatal care and postnatal care, any National Guideline of the related program and new recommendation of WHO, national reproductive health program of the National Maternal and Child Health Center, have updated the Safe Motherhood National Protocol for referral hospitals that were published in 2013 and have a new edition released in 2020.

The updated national protocol has contributed to providing technical advice from representatives of departments, relevant programs, national hospitals, Cambodian Midwives Association, Cambodian Society of Gynecology and Obstetrics, capital and provincial health official, any health development partner organization.

The Ministry of Health strongly hopes that the updated national protocol published in 2020 will be used to bring benefits to the health worker especially the health worker in the referral hospital in implementing the clinical guideline to ensure quality and effectiveness in providing care services for mother and newborn baby in Cambodia.

Tuesday, 3rd day of the waxing moon, Month of Ashadha,
Year of the Rat, Tousaka, B.E. 2564
Phnom Penh, June 23, 2020
(Signed and stamped)

Professor ENG HUOT
Secretary of State

ACKNOWLEDGMENTS

The Ministry of Health would like to thank all of the relevant parties for contributing in updating the National Safe Motherhood Protocol for referral hospital of 2020 including the official from reproductive health program, national nutrition program, HIV infection prevention program from mother to child, national immunization program, training unit of gynecology and obstetrics hospital of the National Maternal and Child Health Center, Preah Ang Duong Hospital, Calmette hospital, Khmer Soviet Friendship Hospital, Cambodia-China Friendship Preah Kossamak Hospital, Communicable Disease Control Department, National Center for HIV/AIDS, Dermatology and STD, National Center for Tuberculosis, National Center for Parasitology, Entomology and Malaria Control, Health Prevention Department, Cambodian Midwives Association, Cambodian Society of Gynecology and Obstetrics, Capital and Provincial Health Officials and other partner organization such as WHO, PSI, UNFPA, JICA, SPF, URC, USAID, RACHA, RHAC, GIZ, MSIC, CARE, Save the Children for participating, reviewing, discussing and providing constructive feedback on this protocol.

Thanks to the finalizing Technical Team led by Assisting Professor Pech Sothy, Deputy Director of the National Maternal and Child Health Center, Professor Kum Kanal, Director of the Cambodian Society of Gynecology and Obstetrics and Mrs. Dr. Lam Phirun, Director of the National Reproductive Health Program of National Maternal and Child Health Center. Most importantly, we would like to thank Mrs. Prof, Tung Ratha, Director of the National Maternal and Child Health Center for providing support to the process of updating this protocol.

Lastly, we would like to express our gratitude to WHO for providing technical support and sponsoring this quality revision of this National Safe Motherhood Clinical Management Protocol as well as the publishing of this national protocol.

**The technical working group finalizing the draft of the
national protocol**

- | | |
|---|--|
| 1. Assisting Professor, Pech Sothy | Deputy Director of National Maternal and Child Health Center |
| 2. Professor Kum Kanal | Director of Cambodian Society of Gynecology and Obstetrics |
| 3. Associate Professor Saom Vanrithy | Office Chief of Techniques of National Maternal and Child Health Center |
| 4. Professor Ket Lysotha | Deputy Director of Perinatal Society of Cambodia |
| 5. Dr. Lam Phirun (Mrs.) | Manager of National Reproductive Health Program of National Maternal and Child Health Center |
| 6. Dr. Saing Sona | Trainer of the National Maternal and Child Health Center |
| 7. Dr. Uy Kina | Chief of Gynecology of Khmer-Soviet Friendship Hospital |
| 8. Dr. Heng Rithsopanha (Mrs.) | Chief of Obstetrics and Gynecology of Ang Duong Hospital |
| 9. Dr. Chhun Samsorphea (Mrs.) | Chief of Obstetrics of Calmette Hospital |
| 10. Assisting Professor, Ky Sivantha (Mrs.) | Former Chief of Obstetrics and Gynecology of Cambodia-China Hospital and Preah Kossamak Hospital |
| 11. Dr. Cheang Kanitha (Mrs.) | Technical Officer of WHO |
| 12. Dr. Phal Sano | Technical Officer of WHO |
| 13. Dr. Muong Sopha | Technical Officer of UNFPA |

TABLE OF CONTENTS

Preface	1
Acknowledgments	2
Introduction	11
Communication.....	14
Improve linkages with other health units.....	15
Referral and Transfer of Mother or Newborn.....	16
Infection Prevention and Control.....	17
Quick Check	22
Rapid Assessment and Management	23
Section 1: Antenatal Care	28
1-1 Assess Pregnancy Status (<i>both mother's and fetus's health</i>).....	28
1-2-1 pre-eclampsia, severe pre-eclampsia, eclampsia	36
1-2-2 Check for Anemia and management.....	43
1-2-3 Check for syphilis and manage.....	44
1-2-4 Check for HIV status	45
1-2-5 Management of Vaginal Bleeding in Early Pregnancy	48
1-2-6 Management of Vaginal Bleeding in Later Pregnancy and Labor	52
1-2-7 Management of Fever During Pregnancy and Labor	56
1-2-8 Management of Loss of Fetal Movements	58
1-2-9 Management pre-labor	59
The pre-labor is strongly related to the illness and death of the newborn. The management of pre-labor include stopping the uterine contraction by conducting Tocolosis or keep the progression of labor. Please confirm the age of the fetus.....	59
1-2-10 Management pre-labor Rupture of Membranes.....	63
1-2-11 Respond to Observed Signs or Volunteered Problems	66
Persistent vomiting:	66
B. Vaginal Discharge	66
Tuberculosis	67
1-3 Give Preventive Measures.....	68
1-4 Advice and Counseling.....	69
1-4-1 Advise and counsel on Nutrition and Self-Care	69
1-4-2 Advise and counsel on Birth and Emergency Plan (Birth and Emergency Preparedness)	70
1-4-3 Labor Signs and Danger Signs	71
1-4-4 Advise and Counsel on Essential Newborn Care	71
1-4-1-4-6 Advise on Routine and Follow-up Visits.....	77
Section 2: Labor and Delivery Care	78
2.1 Assessment and Care During Labor and Delivery	78

2-2 Decide stage of labor	79
2-3 Respond to Obstetrical Emergencies on Admission	80
2-4 Give Supportive Care throughout Labor	83
2-5-1 Not in active labor: (8 hours at most)	84
2-5-2 In Active labor (7 hours at most)	85
2-6 Second Stage of Labor-Deliver Baby and Give Immediate Newborn Care	94
Newborn Resuscitation and Post Resuscitation Care	99
2-7 Third Stage of Labor-Delivery of the placenta	103
2-8 Management of selected Labor and Delivery Problems	106
2-8-1 Unsatisfactory Progress in Labor	106
2-8-2 Fever (Temperature >38°C)	108
2-8-3 Malpositions (face and brow) and Malpresentations.....	110
2-8-4 Fetal distress in Labor	113
2-8-5 Prolapsed Cord	115
2-8-6 Shoulder Dystocia	116
2-8-7 Multiple Birth	117
2-9 Monitoring and Actions Needed for Mother and Newborn after Delivery....	119
2-10 Assess the mother after delivery	123
2-11 Management of selected postpartum problems	125
2-11-1 Vaginal Bleeding after Childbirth.....	125
2-11-2 Elevated Diastolic Blood Pressure	130
2-11-3 Fever after Childbirth.....	132
Treat and advise:	137
2-12 HIV testing at childbirth:.....	138
Give preventive medicines to the newborn who is at high risk.....	139
Safe Delivery for HIV Positive Women	139
Universal Precautions	139
Section 3: Postpartum and Newborn Care	140
3-1 Assessment and Care of the Postpartum Woman Until the Baby turns 2 years old	141
3-2 Respond to observed signs and volunteered problems.....	164
3-2-2 HIV Status.....	165
Treat and Advise:.....	165
3-2-3 Dribbling Urine.....	165
3-2-4 Pus or Perineal Pain	166
3-2-5 Feeling Unhappy or Crying.....	167
3-2-6 Vaginal discharge after delivery	167
3-3 Preventive Measures	168
3-3-1 Hygiene and Nutrition	169
3-3-2 Birth Spacing	170
3-3-3 Danger Signs and Emergency Preparation	170
3-3-4: Routine and Follow Up Visits.....	171

3-4 Assessment and Care of the Newborn	172
3-4-1 Danger Signs in a Newborn prior to Discharge	172
3-4-2 Care of the Newborn for All Babies until Discharge.....	172
3-4-2-1 General Guidance.....	172
3-4-2-2 Breastfeeding Assessment and Counseling.....	173
3-4-3 Identification of Problems Needing Special Management	175
3-4-4 Provide Additional Care for the Low Birth Weight (<2500g) or Preterm (<37 weeks) Newborn including Kangaroo Mother Care	178
3-4-5 Advise the Mother on Post-Discharge Newborn Care	181
3-5 Management of Selected Newborn Problems	183
3-5-1 Breathing Difficulty.....	183
3-5-2- Hypothermia (<36.5°C) or Hyperthermia (>37.5°C)	186
3-5-3 Convulsions or Spasms.....	188
3-5-4- Tetanus.....	193
3-5-5 Sepsis	194
3-5-7- Meningitis.....	203
3-5-8- Syphilis	203
3-5-8-1- Diagnosis of congenital syphilis infection for newborn at delivery service.....	203
3-5-8-2- Syphilis Treatment For Newborn baby	204
3-5-8-3- Follow up on the infant.....	204
3-5-9- Baby has Multiple Signs Simultaneously.....	204
3-5-10- Care for a Newborn whose Mother is Very Ill or Transferred	205
3-5-11- Red, Swollen Eye or Draining Pus.....	205
3-5-12- Umbilical Infections.....	208
3-5-13- Severe Jaundice.....	208
3-5-14- Skin Infection	209
3-5-15- Treatment for Birth Injury or Malformations.....	212
3-5-16- Diarrhea	213
3-5-17- Low Blood Glucose.....	214
Section 4: Comprehensive Abortion Care and Post Abortion Care	216
4-1 Clinical Assessment, Diagnosis and Options	216
4-2 Management options.....	218
4-3 Counseling and Informed Consent.....	219
4-4 Pain Management	219
4-5 Uterine Evacuation	220
4-5-1- First Trimester Safe Abortion	220
4-6 Recovery and Follow-up Care.....	221
4-7 Contraceptive Counseling and Services	222
Section 5: Maternal And Newborn Care And Intercurrent Disease	223
Section 6: Assessing And Improving Quality of MNH Care At Hospitals..	234
6-1 Emergency obstetric and newborn care (EmONC)	234

6-2 Service Quality Improvement.....	235
Section 7: Practical Procedures for mother	237
7-1 Management of the airway and breathing.....	237
7-2 Shock Management.....	238
7-3-2 Augmentation of labor.....	249
7-3-3 Artificial Rupture of Membranes (AROM).....	250
7-4 Episiotomy and Repair.....	252
7-5 Cervical and Vaginal Inspection.....	254
7-6 Repair of Vaginal and Perineal Tears	255
7-7 Repair of Cervical Tears.....	259
7- 8 Breech Delivery.....	260
7-9 Vacuum Extraction	265
7.11 Means of birth termination after delivery.....	276
7-12 Manual removal of placenta	278
7-13 External Bimanual Compression of uterus	281
7-14 Internal compression of uterus.....	281
7-15 Aortic Compression.....	282
7-16 Use of anti-shock trouser	283
7-17 Manual Vacuum Aspiration.....	288
Section 8: Practical Procedures for the Newborn	302
8-1 Expressing Breast Milk.....	302
8-2 Cup or Spoon Feeding	303
8-4 Inserting a Gastric Tube	305
8-5 Measuring body temperature	306
8-5-1 Measuring Axillary Temperature.....	307
8-5-2 Measuring Rectal Temperature	307
8-6 Taking Blood Samples	308
8-6-1 Venepuncture	309
8-6-2 Capillary Blood Sample (Heel Prick).....	310
8-7 Measuring Blood Glucose.....	312
8-9 Giving Injections	316
8-9-1 Intramuscular (IM) Injections	316
8-9-2 Intravenous (IV) Injections.....	318
8-9-3 Intradermal Injections.....	318
8-10 Establishing an Intravenous Line.....	319
Peripheral IV Line	320
8-11 Administration of Intravenous Fluid	321
Feed and Fluids Volumes for Small Babies	322
8-12 Transfusing Blood	325
8-13 Performing a Lumbar Puncture.....	326
Section 9: Newborn and Children Physical Screening	330
9.1 Newborn Physical Screening (0 to 28 days of age)	330

9.1.1	Description.....	330
9.1.2	General Measure	330
9.1.3	Referral.....	330
9.2	Physical Screening for Baby aged from 1 month to 5 years.....	331
9.2.1	Description.....	331
9.2.2	Measure.....	331
9.2.2.1	Defect Checking	331
9.2.2.2	Referral.....	331
Appendix		337
2: Drugs for Pregnancy, Childbirth, Postpartum and Newborn Care.....		340
3: Emergency Obstetric Surgery, Anesthesia, Blood Transfusion.....		342

Provisional translation

Abbreviations

AB	Antibiotic
AIDS	Acute Immune Deficiency Syndrome
ANC	Antenatal Care
ARM	Artificial Rupture of Membrane
ART	Antiretroviral Therapy
ARV	Anti-Retro Viral
BCG	Bacille Calmette–Guérin
BF	Breastfeeding
BP	Blood Pressure
CBO	Community Based Organization
COC	Combined Oral Contraceptives
CoC	Continuum of Care
CPA	Complementary Package of Activities
CS	Caesarean Section
CSF	Cerebro-spinal Fluid
D&C	Dilation and Evacuation
DNA PCR test	Deoxyribonucleic Acid Polymerase Chain Reaction test
DPT	Diphtheria, Pertussis, Tetanus toxoid
EVA	Electric Vacuum Aspiration
FP	Family Planning
G	Gram
HAART	Highly Active Anti-Retroviral Therapy
HC	Health Center
Hep B	Hepatitis B
Hib	Haemophilus Influenzae type B
HIV	Human Immunodeficiency Virus
HR	Heart rate
HSSP	Health Sector Support Project
ICT	Infection Control Team
IM	Intramuscular
IMCI	Integrated Management of Childhood Illness
IMPAC	Integrated Management of Pregnancy & Childbirth
IUD	Intra Uterine Device
IV	Intravenous
J.E	Japanese Encephalitis
JICA	Japan International Cooperation Agency
KMC	Kangaroo Mother Care
L	Liter
LAM	Lactation Amenorrhea Method

LMP	Last Menstruation Period
Mg	Milligram
MgSO ₄	Magnesium Sulphate
ml	Milliliter
MNH	Maternal and Newborn Health
MOH	Ministry of Health
MVA	Manual Vacuum Aspiration
NCHADS	National Center for HIV/AIDS and STD
NCU	Neonatal Care Unit
OD	Operational District
OI	Opportunistic Infection
OPD	Out-patient Department
OPV	Oral Polio Vaccine
PHD	Provincial Health Department
PMTCT	Prevention from Mother to Child Transmission
POP	Progestin-only Pills
PPH	Post-Partum Hemorrhage
RACHA	Reproductive and Child Health Alliance
RAM	Rapid Assessment and Management
RDT	Rapid Diagnosis Test
RHAC	Reproductive Health Association of Cambodia
RPR	Rapid Plasma Reagent
STI/RTI	Sexually Transmitted Infection/Reproductive Track Infections
TBA	Traditional Birth Attendant
TT	Tetanus toxoid
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
URC	University Research Cooperation
WBC	White Blood Cell
WHO	World Health Organization

Introduction

The national safe motherhood clinical management protocols in this document outline the care and management to be provided to mothers and newborns at referral hospitals (RHs) throughout Cambodia. The protocols were developed by a technical team, based on the WHO IMPAC guides. They were developed from the safe motherhood protocols for health centers, published by MoH in 2016, ensuring the complimentary between health centers and referral hospitals. The national protocols should not, however, be seen as a textbook and require the user to refer to other national protocols that provide additional more specific information on particular topics (i.e., tuberculosis, malaria, abortion, HIV, AIDS, infection control).

To be able to provide quality of service, service providers (i.e., doctors, midwives, and nurse) must have the knowledge and skills about clinical management reflected in the protocols, and the hospital has the necessary supplies and equipment to provide the care that meets actual needs. In addition, a functioning referral system must be in place to enable the safe and timely transfer of mothers and/or newborns, when necessary. For example, transfer from health centers to any hospitals, or to higher levels of hospitals, is essential if mothers and newborns are to have access to the full range of care outlined in these protocols.

The protocols should serve as the primary source of information on the care of mothers and newborns in Cambodia and be used by all the service providers, health service managers, agencies/organizations involved in promoting the care of the mother and child and the training of health care providers in maternal and newborn care, so as to ensure that the technical content of training programs on maternal and newborn care reflect the content of these protocols.

The introduction of this document includes communication, linkages with other health facilities, referral and transfer of mother and newborn, infection prevention and control, quick check, and rapid assessment and management (RAM).

Section 1

Covers antenatal assessment and care, including the number of visits, assessment of pregnancy status, checking for common problems, responding to observed signs, giving advising, preventive measures, and counseling the woman on nutrition and self-care, birth preparedness and danger signs, advising and counselling her about birth spacing, and advising her on routine and follow-up visits. Management of the following antenatal problems is also included: anemia, fever, vaginal bleeding in pregnancy, pre-eclampsia and eclampsia, loss of fetal movements, and pre-labor rupture of membranes.

Section 2

Covers labor and delivery care, including assessment of the woman in labor, supportive care throughout labor, management of the first, second, and third stages of labor, care of the mother and immediate newborn, and assessment of the postpartum mother. Management of the following problems is also included: unsatisfactory progress in labor, malposition, and malpresentation including breech, shoulder dystocia, fetal distress in labor, prolapsed cord, multiple births, and asphyxia baby.

Section 3

Covers postpartum and newborn care, including assessment of the postpartum woman and immediate newborn, preventive measures, advice, and counseling on postpartum and newborn care, care of normal-weight newborn, low-birth-weight newborn, preterm newborn, immediate newborn immunization, kangaroo mother care, and routine and follow up visits for mother and baby. Management of the following problems is also included: vaginal bleeding after childbirth, fever after childbirth, breathing difficulty, jaundice, local infections (skin pustules, umbilical infection, thrush, eye infection), and diarrhea.

Section 4

Covers comprehensive abortion care and management of post-abortion complications, including clinical assessment, diagnosis and options, counseling and informed consent, pain management, uterine evacuation methods, recovery and follow-up care, and contraceptive counseling and services.

Section 5

Summarizes the special care needed for mother and newborn when the mother has another medical condition: HIV/AIDS, diabetes, tuberculosis, heart disease, malaria, and adolescent pregnancy.

Section 6

Provides the definitions of Basic and Comprehensive Emergency Obstetric and Newborn Care (BEmONC and CEmONC), and provides a short guide on quality improvement, including the clinical case review, the maternal death audit, and the use of emergency drills for improved management of obstetric and newborn emergencies.

Section 7

Outlines selected practical procedure, including managing the airway and breathing, give IV fluid, artificial rupture of membrane, give an appropriate antibiotic, episiotomy and repair, cervical and vaginal inspection, repair of vaginal and perineal tears, repair of cervical tears, breech delivery, vacuum extraction, manual removal of

placenta, aortic compression, bimanual compression of the uterus, non-pneumatic anti-shock garment using, manual vacuum aspiration, and newborn resuscitation.

Section 8

This section describes the implementation procedure for some babies including expressing breastmilk, feeding the breastmilk, measure the baby's temperature, how to insert the gastric tube, how to take a blood sample, and measuring the level of blood glucose as well as following up and treatment. Blood transfusion and lumbar puncture. This section also describes the prescription of some antibiotics for the appropriate treatment of the baby. Method for neonatal screening for 28 days old baby and children age from 1 month to 5 years old from head to toe. This section has attached the form for neonatal screening.

Section 9

This section describes the neonatal screening for a newborn baby (age 0 to 28 days) and for children age from 1 month to 5 years old in order to look for signs of diseases or defects and determine any actual needs for intervention service and refer to get additional treatment from a specialized doctor if necessary.

Finally, the appendixes include lists of the equipment, supply, and drugs necessary to implement the care outlined in these protocols.

Communication

The following information describes how all health care providers must communicate with women and their families at every contact with them:

Communicating with the woman (and her partner/companion) every time you meet them:

- Make the woman (and her companion) feel welcome
- Be friendly, respectful and non-judgmental
- Use simple and clear language
- Encourage the woman to ask questions
- Provide information related to the woman's needs
- Help the woman to understand her options and make decisions
- Seek the woman's permission before any examination or procedure and inform her of what is being done during the examination or procedure
- Summarize the most important information, including the results of routine tests and the details of treatments
- Verify that the woman understands emergency signs, treatment instructions, and when and where to return for follow-up care.

Maintaining privacy and confidentiality:

- Ensure a private place for examination and counseling
- Ensure that discussions, especially about sensitive subjects, cannot be overheard
- Ensure that the woman has given her consent before discussing matters with her partner or family
- Never discuss confidential information about clients with other providers, or outside of the health facility
- Organize the examination area so that, during examinations, the woman is protected (with a curtain, screen, or wall) from the view of other people
- Ensure all records are confidential and kept locked away
- Limit access to logbooks and registers to responsible health care providers only.

Prescribing and recommending treatments and preventive measures for the woman/baby when prescribing and recommending treatments and preventive measures:

- Explain to the woman what the treatment is, why it is necessary, that it will not harm her or her baby
- Give clear and helpful advice on how to take a medication regularly
- Explain any side-effects and their management to the woman
- Demonstrate procedures or treatments that the woman will carry out at home and have her do a return demonstration
- Advise the woman to return to the clinic if she has any problems or concerns about the procedures or treatments

- For women or babies being treated for severe complications, make sure that the situation is fully explained to the woman and her family, and make sure to respect her opinion as regards treatment options, when necessary documented by a signed informed consent paper
- For follow-up of specific problems, give the woman clear recommendations for when and where to have her next visit
- Explore any barriers that the woman or her family might have about particular treatments and help her to overcome these barriers.

Improve linkages with other health units

Work stepwise to improve the regular interaction with all other referral hospitals, and all health centers, in the hospital catchment area. This should be done together with PHD-MCH and OD-MCH (and partners as available), and can include, for example:

- Regular meetings between Midwifery Coordination Alliance Team and HC midwives, doctors and MWs from the hospital coordinated by MCH of OD and Provincial levels to improve joint discussion, exchange experience on the management of complicated cases, provide feedback, improve referral mechanisms and improve the knowledge as well as skills
- Stimulate supportive supervision by hospital doctors and MWs to peripheral units
- Make sure that peripheral health staff can reach the hospital maternity unit by phone or, to be able to respond to their queries on complicated cases, to receive alerts on incoming emergency referrals, and to be able to give feedback to peripheral unit staff on the outcome of referred women
- In the hospital with a waiting house, the Health officer is obligated to provide health care to pregnant women who come from the rural area
- Systematically improve the referral system, by addressing communication (phone, radio, referral note, feedback, etc.), means of transport (public ambulances, local contracts with private vehicle owners, etc.), financial issues related both to transport and referral level care (health equity funds, user fees, emergency funds, etc.), record keeping, and feedback between levels (MCAT meetings for quarterly feedback, other mechanisms for routine feedback)
- Ensure good communication with PMTCT prevention and care services.

Referral and transfer of mother or newborn

When a mother or newborn present with a problem requiring more than the services available at the facility, the health care provider must weigh the potential risks and benefits of referring/transferring the mother or newborn to a healthcare facility that has the capabilities and resources to effectively manage the problem, for instance from

- CPA1 or 2 to a CPA3 hospital
- BEmONC to a CEmONC

For appropriate care, the guidelines below must be followed.

Guidelines for emergency referral/transfer of the mother or newborn

- When refer/transfer, always:
- Stabilize the mother/newborn before referral/transfer
- Explain the condition to the mother and/or family, and the reason for the referral/transfer
- Quickly organize transport and possible financial help (refer to the guideline)
- Notify the (phone call) referral hospital about the condition and treatment of the mother/newborn and their estimated time of arrival
- Before referral, health care provider completes referral letter and send mother's/newborn's records with them to the referral hospital
- If the mother is in labor, ensure availability of supplies needed for a clean and safe birth during transfer
- Ensure an adequate supply of appropriate drugs/medications as needed during the transfer
- Give oxygen, if available, if the mother or baby is having breathing difficulty, or if the mother is in shock or has any other problem requiring oxygen
- Must have a skilled provider accompany the mother/newborn to the referral hospital
- Ensure that mother's/newborn's condition (i.e., vital signs, intake, output) is monitored before and during transfer and that all findings are recorded.

For the mother, also:

- Cover the woman with a blanket to prevent heat loss, but ensure that she is not overheated
- Allow one family member (in addition to the healthcare provider) to accompany the mother or newborn.

For the newborn, also:

- Ensure that s/he is kept warm before and during transfer

Maintain skin-to-skin contact with mother (or relative) and cover both ensure baby's head is covered

- Protect the baby from direct sunlight
- Encourage the mother to breastfeed her baby during the journey.

Infection prevention and control

To protect the woman, her baby, and staff themselves from infection with bacteria and viruses, including HIV, health care providers must have preventive measures and infection inspections in response to the Standard Precaution and Transmission-base Precaution that can prevent the risk of infection during the treatment and healthcare.

Standard precaution:

- **Hand hygiene:**

- Hand hygiene is the most important measure in preventing and reducing the spread of the virus in the health facility. Infections that frequently happen through hand-to-hand contact are common cold and more severe cases are meningitis, hepatitis A and most type of diarrhea
- Washing hands with water and soap or alcohol and dry with a clean paper towel or towel are the type of hand hygiene that health worker must practice when providing treatment and healthcare services
- The five 6-step crucial time handwashing technical implementation procedures must be widely disseminated through posters of implementation procedures at the handwashing place.

The five-time to practice hand hygiene includes:

- Before caring for a woman and/or her baby
- Before and after any treatment procedure
- After exposure to blood or other body fluids
- After contact with the patient's surrounding
- After removing gloves or after caring for a woman and/or her baby.

Personal protective equipment:

- Health workers must be knowledgeable enough on the usage of PPE and know how to choose the appropriate PPE depending on the risks. As a general recommendation, a healthcare provider should first evaluate the challenges and means of infection before choosing the appropriate PPE based on:
 - Type of procedures
 - Risk of being in contact with blood or body fluid
 - Risk of being in contact with the virus

- Risk of being soiled with the virus
- PPE usage in the maternity section:

Gloves

- Wear sterile gloves when performing: during delivery, cord-cutting, repair of episiotomy or tears
- Wear elbow-length sterile gloves for manual removal of placenta
- Wear clean examination gloves when: drawing blood, performing dipstick, in contact with bodily fluids or mother or newborn have infected wound or cellulitis
- Wear utility gloves when: handling and cleaning instruments, handling contaminated waste, cleaning blood and body fluid spills

Appropriate management for patient care instrument and soiled cloths

All of the medical instrument can be the disposable type or the reusable type. Do not reuse the disposable instrument, and it must be disposed of properly after use. All reusable instruments must be sterilized or rid of virus properly between each time of use and before using with a new patient.

As a general recommendation, the guideline for the 6-sterilization process must be properly implemented to ensure the effectiveness of the medical instrument and tools: 1. Soaking, 2. Cleaning, 3. Drying, 4. Packing, 5. Sterilizing and 6. Storing, as well as implementing the 3 important guidelines in sterilization using the pressure pot or autoclave are:

- Appropriate pressure is 106 kilopascals (KP)
- Appropriate temperature 121 °c
- The appropriate duration of 30 minutes (mn)

For more information, please read the Manual on the Infection Prevention and control for Health Facility and Healthcare.

Sterilizing process of the medical instrument:

Soaking:

- Place all tools and instruments in water or soapy water immediately after use
- Soak for 10 minutes.

Cleaning:

- Use a soft brush or new toothbrush to scrub and completely remove all blood, other body fluids, tissue, and other foreign matter
- Rinse items thoroughly with clean water to remove all detergent.

Drying:

- Leave to dry – away from other dirty items – on a clean rack. It is also possible to dry with a paper towel or clean a regular towel.

Packing:

- Pack cleaned instruments in double-layer wrapping materials, put sterilization tape on the outside and inside of the pack.

Sterilizing:

- Use high-pressure steam sterilizer (autoclave or pressure cooker)
- Arrange all packs and drums in the chamber of the autoclave/pressure cooker in a way that allows steam to circulate freely
- Ensure the correct time, pressure and temperature are reached.

Storing:

- Place sterile packs in closed cabinets. Packs can be kept for one week unless they become wet or contaminated that require sterilizing.

High-level disinfection (HLD):

For instruments that cannot be sterilized (i.e., suction cannula, instruments for MVA...) they must go through high-level disinfection

- Minimum boiling for 20 minutes
- Soaking in chemical solution:
 - 0.2% peracetic acid for 10 mins
 - Glutaraldehyde 2% for 45 mins.

Note: Instruments and tools that have been through high-level disinfection can be kept inside a sterile box for only 24 hours.

Safe handling of contaminated laundry:

- Wear gloves to collect contaminated laundry and surgery cloths
- DO NOT touch contaminated clothing or sheets without gloves on both hands
- Keep clothing or sheets stained with blood or other body fluids separate from another laundry
- Rinse blood or other body fluids off contaminated clothing or sheets before washing them with soap (see National Infection Prevention and Control Guidelines).

• Cleaning the environment:

- Guideline for cleaning environment:
 - Cleaning is the best basic method for keeping the area in the delivery room cleaned
 - Practice hand cleaning/hand hygiene and wear the appropriate PPE (at the very least, rubber gloves, high-top rubber boots, uniform or gown). When there are risks of splatting blood to the face, must wear surgical mask and eye protection instrument
 - The delivery room is placed with the highest risk that is supposedly the most contaminated place, and the contamination from the healthcare staff and patient, the surface must be cleaned with soap and dry before

sterilization, i.e., Sodium Hypochlorite solution (chlorine) 0.05%

- Careless cleaning or inattentive cleaning is not only ineffective but also creates drawbacks as it spread the micro-organism all over the surface, thus increasing the chance of infecting other objects. Therefore, absolute cleaning must be done properly according to the standard.
- Every morning:
 - Clean the table, counter, wheelchair and floor with soapy water to clean all the dust and fragments remaining in the room from the night before in between the care of each patient
 - Immediately clean the blood-stained spot using the paper towel or towel. Then, use the chlorine solution 0.05% and take out the mat or clothes that were cleaned with soap and water
 - Clean the surface that the patient has contacted with (examination table, bed, IV stands or floor, etc.) with chlorine solution 0.05%
 - Clean the visibly contaminated spot on the floor using the cloths with handle, dipped into chlorine solution 0.05% and then clean with soapy water at the end of each day
 - Must take out the contaminated waste and dispose of them as soon as possible to reduce the risk of infection
 - Clean all of the surface contacted with the patient from top to bottom including IV stands, nearby tables, bed, hand wash sink, etc... with the chlorine solution dipped cloths 0.05%
 - Pay special attention to the delivery bed by cleaning the side, the bottom and the foot of it thoroughly using the chlorine solution 0.05%
 - Clean the visibly contaminated spot on the floor using the cleaning cloths with a handle dipped in 0.05% chlorine solution and then with soapy water.

- Prevention of needle or sharp object injuries

- Safely hold on to and throw away the sharp object:

- Must have the safety kit box place next to or in the treatment room
- Only use the needle and syringe once and dispose of them
- No need to separate the needle and syringe
- Do not cover, bent, or snap the needle after use

- Dispose of the plastic syringe needle and blade of the knife immediately after use into a safe box
- Must burn all of the safety boxes when it is filled $\frac{3}{4}$ of the way.
- For detail, please read more on the guideline on the prevention and inspection of the infection in the treatment and healthcare facility of the Ministry of Health.

- Waste Management from the healthcare service
 - Safely dispose of the waste from healthcare service: waste must be properly sorted by each type:
 - Disposing of the general waste (kitchen waste and non-infective waste) must be placed in the green bin and disposed of in the landfill. The cleaning of box or tools container, utility gloves and wash hands after disposing of the infective waste
 - Medical waste management:
 - Must dispose of the objects stained with blood or other organic substances into a plastic bag or yellow bin, without any leaking or waterproof with the infective waste label on it (see guideline on the Infection Prevention and Inspection)
 - Must burn the infective solid waste (see guideline on the Infection Prevention and Inspection)
 - Immediately dispose of the liquid waste through the gutter or sanitary toilet
 - Dispose of the placenta in the placenta burying ditch
 - For detail, read more on the guideline on the Infection Prevention and Control in the treatment and healthcare facility of the Ministry of Health

- Respiratory Infection Protection

Respiratory hygiene and coughing in a good manner are the standard precautions practiced by every patient, guest and staff in the treatment and healthcare facility to maintain the fluid of the respiratory system (i.e., when coughing or sneezing) to avoid infection through the respiratory system. Health worker must practice hand hygiene such as:

 - Cover nose and mouth when coughing or sneezing with tissue or mask
 - Dispose of the used tissue and mask in the trash bin
 - Do not "spit" (use tissue)
 - Demonstrate the method for hand hygiene after contact with the fluid of the respiratory system

- | |
|--|
| <ul style="list-style-type: none">- Avoid hand contact when ill, use “traditional greeting” instead. |
|--|

Precautions based on transmission methods:

<ul style="list-style-type: none">• Contact transmission
--

Glove wearing:

- | |
|--|
| <ul style="list-style-type: none">– Wear sterile gloves when: delivery, cord cutting, repair episiotomy or tears– Wear elbow-length sterile gloves for: manual removal of placenta– Wear clean examination gloves when: drawing blood, performing dipstick, in contact with bodily fluids, or mother or newborn have infected wound or cellulitis– Wear utility gloves when: handling and cleaning instruments, handling contaminated waste, cleaning blood and body fluid spills |
|--|

<ul style="list-style-type: none">• Protection from blood and other body fluids during deliveries.
--

For all deliveries:

- | |
|---|
| <ul style="list-style-type: none">– Do not wear jewelry, wristwatch or nail polish– Wear sterile gloves– Cover any cuts, abrasions, or broken skin with a waterproof bandage– Handle sharp instruments carefully– Practice safe sharp objects disposal– Wear a long waterproof apron or gown and cap– Wear waterproof, closed shoes or boots– Wear eye protection, or face shield if available |
|---|

<ul style="list-style-type: none">• Infection through Respiratory droplets (> 5µm)

This measure must be taken for the patient with respiratory disease

For detail, read more on the guideline on Infection Prevention and Control in the treatment and healthcare facility of the Ministry of Health.

<ul style="list-style-type: none">• Infection through microdroplets in airborne (< 5µm)
--

This measure must be taken for the patient with Tuberculosis

For detail, read more on the guideline on Infection Prevention and Control in the treatment and healthcare facility of the Ministry of Health.

Quick check

The person responsible for the initial reception of women of childbearing age and newborns seeking care at a health facility must do a Quick Check by asking the following questions and making the following observations:

Ask, check, record	Check, listen, feel
<ul style="list-style-type: none"> Ask the woman why she has come to the clinic 	<p>Is the woman being wheeled or carried in or are any of the following presents:</p> <ul style="list-style-type: none"> Vaginal bleeding Convulsing Looks very ill Unconscious In severe pain In labor Imminent delivery <p>Check if the baby is or has:</p> <ul style="list-style-type: none"> Very small Convulsing Breathing difficulty

Action/Intervention:

- If the emergency sign(s) are present, transfer the woman to the treatment room and do a rapid assessment and management:
 - If imminent delivery, call for immediate assistance
 - If in labor transfer to labor ward
 - If no emergency sign(s), woman can wait to see a health care provider
 - If emergency signs for baby present, transfer to treatment room for immediate examination
 - If no emergency signs, the baby can wait with its mother to see a health care provider

Note: The Quick Check should be repeated periodically if the woman has a long wait to see a health care provider.

Rapid assessment and management

Rapid assessment and management by midwife or doctor involve the diagnose of emergency signs, as follows:

Emergency Signs	Measure	Treat
<p>Airway and Breathing:</p> <ul style="list-style-type: none"> Very difficult breathing or Central cyanosis 		<ul style="list-style-type: none"> Taking care and treat airway and breathing

<p>Circulation and Shock:</p> <ul style="list-style-type: none"> • Cold moist skin or • Weak and fast pulse 	<ul style="list-style-type: none"> • Measure blood pressure • Count pulse 	<p>If systolic BP is <90 mmHg or pulse >110 per minute:</p> <ul style="list-style-type: none"> • Position woman on left side with legs higher than chest • Insert an iv line by catheter, No16G or 18G • Give fluids (lactate ringer or normal saline) rapidly • If not able to insert an IV, use an alternative (oral rehydration if women can drink) • Keep woman warm (cover her) <p><i>(Detail on shock management, please refer to section 7.2)</i></p>
<p>Vaginal Bleeding in Early Pregnancy:</p> <ul style="list-style-type: none"> • Uterus NOT above the umbilicus • Heavy bleeding – pad or cloth soaked in less than 5 minutes 	<p>Vital signs</p>	<p>Heavy bleeding probably caused by inevitable abortion:</p> <ul style="list-style-type: none"> • Insert an IV by catheter, No 16G or 18G line • Give fluids (Lactate Ringer or Normal saline) rapidly • Confirm the diagnosis by vaginal exam (manually or speculum) • Perform uterine evacuation by MVA • Give Oxytocin 10 IU or 0.2 mg ergometrine IM • Repeat Oxytocin 10 UI or 0.2 mg ergometrine IM in 15 minutes if bleeding continues • If suspect possible complicated abortion, give appropriate IM/IV antibiotics
<ul style="list-style-type: none"> • light bleeding 		<ul style="list-style-type: none"> • examine woman by ultrasound, if possible • Confirm the diagnosis: ectopic pregnancy, missed abortion, threatening abortion • Treat accordingly

		<ul style="list-style-type: none"> • If pregnancy unlikely, refer to other clinical guidelines
<p>Vaginal Bleeding in Late Pregnancy:</p> <ul style="list-style-type: none"> • Uterus above umbilicus (any bleeding is dangerous) 	Vital signs frequently	<p><i>Do not do vaginal examination:</i></p> <ul style="list-style-type: none"> • Insert IV by catheter, No 16G or 18G line • Give fluids plasma expander, Ringer lactate or normal saline rapidly if heavy bleeding or shock (page 236) • Perform vaginal examination after ultrasound to confirm no placenta previa • If placenta previa is confirmed, then perform the treatment (page 53)
<p>Vaginal Bleeding during Labor:</p> <ul style="list-style-type: none"> • Bleeding more than 100 ml since labor began 	Vital signs	<p><i>Do not do vaginal examination:</i></p> <ul style="list-style-type: none"> • Insert IV by catheter, No 16G or 18G line • Give fluids rapidly if heavy bleeding or shock
<p>Postpartum bleeding:</p> <ul style="list-style-type: none"> • Heavy bleeding: - Pad or cloth soaked in <5 minutes - Constant trickling of blood - Bleeding >250 ml and still bleeding. 	<ul style="list-style-type: none"> - Vital signs frequently - Amount of blood loss 	<ul style="list-style-type: none"> • Call for emergency assistant • Massage uterus until it is hard and give oxytocin 10 IU IM • Insert IV line and give IV fluids (1 liter) with 20 IU oxytocin at 60 drops/minute; • Empty bladder, catheterize if necessary • Measure and record blood pressure and pulse every 15 minutes.
<p>Check and ask if placenta is delivered: Treatment management: 1. <u>Placenta not delivered:</u> when uterus is hard, deliver placenta by controlled cord traction (page 103)</p> <ul style="list-style-type: none"> • If unsuccessful, remove placenta manually (page 278) • Give appropriate IM/IV antibiotics • After manual removal, continue IV infusion with oxytocin (20 IU oxytocin/liter at 30 drops/minute) 		

- If unable to remove placenta manually, perform laparotomy.

2. Placenta delivered:

if placenta is completely delivered:

- Massage uterus to expel blood clots
- If uterus remains soft, give Oxytocin 10 IU, or ergometrine 0.2 mg IM
- DO NOT give ergometrine to women with eclampsia, pre-eclampsia or known hypertension
- Continue IV fluids with 20 IU oxytocin/liter at 30 drops/minute
- Continue massaging uterus until it is hard.

if placenta is incomplete:

- Remove placental fragments
- Give appropriate IM/IV antibiotics
- Continue IV fluids with 20 IU/1L of oxytocin at 30 drops/minute
- If unable to remove placenta manually, perform laparotomy

Check for perineal and lower vaginal tears:

Treatment management:

- Apply pressure over tear
- Repair the tear

1. If heavy bleeding:

- Continue IV fluids with 20 IU/1L oxytocin at 30 drops/minute; insert second IV line on another hand
- Provide ergometrine 0.2mg IM
- Apply bimanual uterine compression (page 281), or
- Aortic Compression (Page 282)
- Give appropriate IM/IV antibiotics
- Consider laparotomy.

2. Controlled bleeding:

- continue oxytocin infusion with 20 IU/liter of IV fluid at 20 drops/minute for at least 1 hour after bleeding stops
- observe every 30 minutes for 4 hours; keep woman at facility for at least 24 hours

Convulsions or Unconsciousness (eclampsia mostly):

- | | |
|--|---|
| <ul style="list-style-type: none"> • Vital signs • Assess pregnancy status | <ul style="list-style-type: none"> • Protect the woman from fall and injury • Get help • Manage airway: (page 237) |
|--|---|

<ul style="list-style-type: none"> • Convulsions (now or recently) • Unconscious 		<ul style="list-style-type: none"> - If she is not breathing, assist ventilation using Ambu bag and mask - If she is breathing, give oxygen at 4-6 L per minute by mask or nasal cannula if available • After convulsion ends, help woman on to her left side • Insert an IV line and give fluids slowly (30 drops/min) • Give magnesium sulphate (page 40) • If diastolic BP >110 mmHg, give antihypertensive after giving MgSO₄ (page 42) • If temperature >38°C, or history of fever, also give treatment for dangerous fever.
<p>Severe Abdominal Pain:</p> <ul style="list-style-type: none"> • not normal labor 	<p>Vital signs</p>	<ul style="list-style-type: none"> • Insert an IV line and give fluids • If temperature is > 38°C, give first dose of appropriate IM/IV antibiotics
<p>Dangerous Fever:</p> <ul style="list-style-type: none"> • Temperature > 38°C • Very fast breathing • Stiff neck • Lethargy • Very weak/not able to stand 	<ul style="list-style-type: none"> • Vital signs • Diagnose for malaria (by using rapid test or microscope) if you live in malaria area or used to live in an area with malaria transmission for the last one month. 	<ul style="list-style-type: none"> • Insert an IV line and give fluids slowly • Give first dose of appropriate antibiotics • Give antimalaria drug according to national guidelines

Section 1: Antenatal Care

Antenatal care must address both the medical and psychosocial needs of the pregnant woman, within the context of the health care delivery system and the culture in which the woman lives. Periodic visits to a health care provider are necessary during pregnancy for the following reasons:

- Assessment of pregnancy status (health of mother and fetus)
- Early detection and treatment of complication
- Establishment of a supportive relationship between the woman and the health care provider
- Development of a birth and emergency plan with the woman (birth preparedness) with the assistance from healthcare service provider
- Provision of preventive measures, and
- Provision of advice and counseling on nutrition, family planning, sign of labor, danger signs, and set further appointment
- Receive preventive medicine for virus infection from mother to children (ART) if the mother is infected
- Receive all the information found, delivery plan, treatment provided and time of appointment.

It is recommended that all pregnant women have four routine antenatal visits (8 times is better). The first antenatal visit should take place as soon as possible after a missed period. The woman should be asked to return if she does not give birth within 2 weeks after her expected date of birth.

The four recommended visits are scheduled as follows:

- 1) 1st visit: the fetus is less than 12 weeks' old
- 2) 2nd visit: the fetus is 20 to 24 weeks' old
- 3) 3rd visit: the fetus is 30 to 32 weeks' old
- 4) 4th visit: the fetus is 36 to 38 weeks' old

In any necessary case that the mother and the fetus are in danger, the mother must come for check-up frequently before the due time. Must return to consult and give birth on the 41st week if the baby is still not born.

1-1 Assess pregnancy status (both mother's and fetus's health)

The person responsible for the initial reception of the woman at the hospital must do a Quick Check as in page 22, followed, if necessary, by rapid assessment and management (RAM) as in page 23.

At the first visit, the healthcare service provider shall prepare a birth and emergency plans (preparedness for the labor) with the woman and the plans shall be reviewed and, if necessary, modified.

1. The first pregnancy check-up (Less than 12 weeks gestational age)

Ask, check, record	Look, listen, feel
<ul style="list-style-type: none"> • Ask for the Maternal Health book and check the past record, if there is no Maternal Health book to fill in, the book shall be provided for the woman if she has had previous children, if she has the Maternal Health book, check the past record: <ul style="list-style-type: none"> - Woman's age - Woman's weight prior to the pregnancy - Date of the last menstrual period - How far along is the pregnancy? - When do you think you go into labor? - Number of pregnancies/number of deliveries/number of abortions-miscarriages - Number of c-section, suction - Severe vaginal bleeding during/after labor - Convulsion - Dead birth or stillbirth on the first day of birth - Were any children born prematurely? - Ask for other diseases such as diabetes, hypertension, kidney diseases. • Have you decided on a place to go into labor? • Ask for tetanus vaccination, check tetanus vaccination form and record 	<ul style="list-style-type: none"> • Measure weight and height • If possible, calculate the body mass index (BMI) <ul style="list-style-type: none"> • $BMI = \frac{Weight\ (in\ Kilogram)}{Height\ X\ Height\ (in\ Metre)}$ • Check vital signs (Blood pressure, pulse, temperature, respiratory rate) • check for anemia • Check for swollen, cyst on the neck and breast • Conduct urine test to confirm the pregnancy in case the clinical examination does not provide enough proof • Measure fundal height (if it cannot be measured, conduct manual examination into the vagina or conduct radiography examination) • Calculate the expected date for labor • Look for caesarean and other surgery scar on abdomen • Do a blood test to find out the blood group, rhesus (Rh), hemoglobin/hematocrit, glucose level, virus that can spread from the mother to the baby (HIV-Syphilis), Malaria if necessary • Continue to give tetanus preventive medicine if the woman has never had this medicine before or continue to give the tetanus preventive medicine according to the record of providing tetanus preventive medicine

Ask, check, record	Look, listen, feel
<ul style="list-style-type: none"> • Any concerns, crisis or issues? Can you eat? • Do you smoke, drink alcohol and use any drug? Do the people around you smoke? 	<ul style="list-style-type: none"> • If necessary, conduct a full blood count testing to confirm the number blood cell • Urine testing for protein, glucose • Advise to eat healthy foods, move around as normal, do not gain too much weight • Check for signs of violence that can lead to problems during pregnancy and during the delivery to save, consult and record as documents • Make appointments for the second pregnancy check-up and remind the mother to bring her Maternal Health Record and Tetanus vaccination form.

Note:

A. Check for anemia and treatment management:

- Check the lower inner eyelid and palm, if it is pale, it means that there is mild and moderate anemia or conduct a blood test using the HemoCue machine (or laboratory) with the hemoglobin level lower than 11.0 – 7 gram/dl, it is confirmed that there is mild and moderate anemia, must administer 1 pill of folic acid every 2 days for three months with appointments to follow up every 14 days
- Check the lower inner eyelid and palm or conduct blood test if the hemoglobin level is lower than 7g/dl or the lower inner eyelid and palm is seen to be very pale, it means that there is severe anemia, must get to the hospital immediately
- If there is no anemia; administer 60 pills of folic acid for the first time (for detail, see National Policy and Guideline on Micro-substances)
- Ask for weight before pregnancy to calculate the BMI. If the result shows that:
 - Body Mass Index < 18.5, meaning that the weight is low, therefore, the weight will increase during pregnancy from 12.5 – 18 kg
 - Body Mass Index from 18.6 – 24.9, meaning that the weight is normal, therefore, the weight will increase during pregnancy from 11.5 – 16 kg
 - Body Mass Index from 25.0 – 29.9, indicate overweight, therefore, the weight will increase during pregnancy from 7 – 11.5 kg

- Body Mass Index ≥ 30.0 , indicate obesity, therefore, the weight will increase during pregnancy from 4.5 – 9 kg (for detail, see Book on the Good food package, page 64).
- B. Check for woman's night blindness by asking about her sight during the dark (when the sun is down)
- If unable to see, must treat by administering multivitamin 2 pills/day for 30 days
- C. Consult and educate on:
- Benefit and time to come for pregnancy check-up
 - Benefit of conducting blood test to check for HIV-syphilis and urine test
 - Woman's nutrition (eat 3 group of foods, 4 times per day, Iodine salt, take 90 pills of folic acid during pregnancy and learn about the secondary side effect of folic acid pill)
 - Body care (body hygiene, take plenty of rest, avoid lifting heavy objects, sleep inside the mosquito net, reducing daily heavy lifting work)
 - Danger signs during pregnancy (vaginal bleeding, convulsion, severe headache, fever, severe stomachache, fatigue or breathing difficulty)
 - Benefit of receiving the proper dosage of tetanus preventive medicine for both the mother and baby to be immune
 - Prepare for birth and any emergency (place for labor, companion, housekeeper, means of travel, tools, savings)
- D. Record information and other services provided in the record list and Maternal Health Book
- E. Health center must transfer the pregnant woman with problems to the hospital to get emergency care
- F. Service package to be provided continuously according to the record of each check-up.

2. The second pregnancy check-up (20-24 weeks gestational age)

Ask, check, record	Look, listen, feel
<ul style="list-style-type: none"> • Check the Maternal Health Book to verify the first check-up • Ask the woman: <ul style="list-style-type: none"> - Do you know when to go into labor? - Have you decided on the place to go into labor? - Ask and check for vaginal bleeding from the last check-up - Is the baby moving (kicking)? 	<ul style="list-style-type: none"> • Measure weight, compare to the weight measured the first time to evaluate the nutrition problems • Take vital signs (blood pressure, pulse, temperature, respiratory rate) compared with the last record • Look for danger signs during pregnancy and manage the complication

<ul style="list-style-type: none"> - Check the record to find possible complications and treatment received from the last check-up - Check for allergies with drugs used in the past • Ask about tetanus vaccination, check tetanus vaccination form and record • Any concerns, crisis or issues? Can you eat? • Do you smoke, drink alcohol and use drug? Do people around you smoke? 	<ul style="list-style-type: none"> • Evaluate the anemia. If still occurs, must continue treatment or refer (read note "A" in the first pregnancy check-up service package) • Administer 1 dose of Mebendazole • Check for swollen, cyst on the neck or breast • Measure the fundal height, check the form, fetal movement, listen to the fetal heartbeat • Echography examination to determine how far along the pregnancy is, number of children and abnormality of the pregnancy (if any) • Conduct a blood test to find out the blood group, rhesus (Rh), (if not yet done) glucose level, hemoglobin/hematocrit • Check for HIV-Syphilis status, if have not done the first time • Check for Malaria if necessary • Continue to give tetanus preventive medicine if necessary • If necessary, do a full blood count testing to confirm the amount of blood cell • Urine testing for protein, glucose (if possible) • Check for signs of violence that can lead to problems during pregnancy and during the delivery to save, consult and record as documents • Advise to eat healthy foods, move around as normal, do not gain too much weight • If the Rhesus (-), give advice on the future gestation for next time • Give advice on contraceptive, remind about the danger signs, alcohol, drug, traditional medicine
---	--

	<ul style="list-style-type: none"> • Make appointments for the third pregnancy check-up and remind the mother to bring her Maternal Health Record and Tetanus vaccination form.
--	--

3. Third pregnancy check-up (30 – 32 weeks gestational age)

Ask, check, record	Look, listen and feel
<ul style="list-style-type: none"> • Check the Maternal Health Record to verify the second check-up • Ask the woman: <ul style="list-style-type: none"> - Do you know when to give birth? And where? - Ask and check for vaginal bleeding from the last check-up - Is the baby moving (kicking)? - Check the record to find possible complications and treatment received from the last check-up - Check for allergies with drug used in the past • Ask about the tetanus vaccination, check the tetanus vaccination form and record • Any concerns, crisis or issues? Can you eat? • Do you smoke, drink alcohol and use drug? Do the people around you smoke? 	<ul style="list-style-type: none"> • Measure weight, compare to the weight measured the second time to evaluate the nutrition problems • Take vital sign (blood pressure, pulse, temperature, respiratory rate) compared with the last record • Look for danger signs during pregnancy and manage the complication • Evaluate the anemia. If still occurs, must refer (read note "A" in the first pregnancy check-up service package) • Check for swollen, cyst on the neck or breast • Measure the fundal height, feel the abdomen in case there's a twins or multiple children • Feel the abdomen in case of transverse lie fetus or abnormal presentation, fetus movement in the womb • Listen to the fetus's heartbeat • Conduct echography examination if necessary • Do a blood test to find out the blood group, rhesus (Rh), glucose level, hemoglobin/hematocrit (if not yet done) • Check for virus status, the second time HIV-syphilis, woman who are highly exposed to HIV-syphilis infection

	<ul style="list-style-type: none"> • Check for Malaria when necessary • Continue to give tetanus medicine if necessary • If necessary, do a full blood count testing to confirm the amount of blood cell • Urine testing for protein, glucose (if possible) • Give advice as stated below: <ul style="list-style-type: none"> - Check for signs of violence that can lead to problems during pregnancy and during the delivery to save, consult and record as documents - Make appointments for the fourth pregnancy check-up and remind the mother to bring her Maternal Health Record and Tetanus vaccination form.
--	---

Note:

- Consult on the support and condition during labor (encouragement from the caretaker, partner or relatives, cleaning of the body, movement, choosing the right position, encourage to urinate every two hours, encourage to eat and drink as much as desired, explain about the breathing technique, attitude and movement that reduce pain)
- Consult on the nutrition for woman after labor, putting the baby on the mother for skin-to-skin contact and breastfeeding the baby in the first hour, exclusively breastfeed, baby care
- Do not use, distribute and disseminate any form of the child supplement product at the health facility (must strictly follow the sub decree No. 133)
- Consult on contraceptive.

4. Fourth Pregnancy Check-up (36 - 38 weeks gestational age)

Ask, check, record	Look, listen and feel
<ul style="list-style-type: none"> • Check the Maternal Health Record to verify the third check-up • Ask the woman: <ul style="list-style-type: none"> - Do you know when to give birth? And where? 	<ul style="list-style-type: none"> • Measure weight, compare to the weight measured the third time to evaluate the nutrition problems

<ul style="list-style-type: none"> - Ask and check for vaginal bleeding from the last check-up - Is the baby moving (kicking)? - Check the record to find possible complications and treatment received from the last check-up - Check for allergies with drug used in the past • Ask about the tetanus vaccination, check the tetanus vaccination form and record • Any concerns, crisis or issues? Can you eat? • Do you smoke, drink alcohol and use drug? Do the people around you smoke? • During the last check-up, did you get any advice on the contraceptive method? 	<ul style="list-style-type: none"> • Take vital sign (blood pressure, pulse, temperature, respiratory rate) compared with the last record • Look for danger signs during pregnancy and manage the complication • Evaluate the anemia. If still occurs, must refer (read note "A" in the first pregnancy check-up service package) • Check for swollen, cyst on the neck or breast • Measure the height of the uterus, feel the abdomen in case there are twins or multiple children • Feel the abdomen in case of transverse lie fetus or abnormal presentation, fetus movement in the womb • Listen to the fetus's heartbeat • Conduct echography examination if necessary • Do a blood test to find out the blood group, rhesus (Rh), glucose level, hemoglobin/hematocrit (if not yet done) • Remind the pregnant woman infected with HIV to give birth to the baby at hospital with HIV treatment service by providing medicine against it • Check for Malaria when necessary • Continue to give tetanus medicine if necessary • If necessary, do a full blood count testing to confirm the amount of blood cell • Urine testing for protein, glucose (if possible) • Give advice as stated below:
---	---

	<ul style="list-style-type: none"> - Check for signs of violence that can lead to problems during pregnancy and during the delivery to save, consult and record as documents - Remind the mother to bring her Maternal Health Record and Tetanus vaccination form.
--	--

Note:

- Consult on the sign of labor (vaginal discharge of bloody sticky or abdominal/lumbar pain every 20 minutes or watery bag breaks) remind of the condition when going into labor (encouragement from the caretaker, partner or relatives, cleaning of the body, movement, choosing the right position, encourage to urinate every two hours, encourage to eat and drink as much as desired, explain about the breathing technique, attitude and movement that reduce pain)
- Consult on not to cut down on eating, not to drink traditional medicine/medicinal wine and remind about nutrition for woman after labor, putting the baby on the mother for skin-to-skin contact and breastfeeding the baby in the first hour, exclusively breastfeed, not giving any other fluid than the breastmilk such as water and other beverages and cinnamon
- Consult on the danger practice to be avoided such as unsuitable steaming, warming by the fire, hot stone/cold block of ice pressing on the abdomen, putting any object on the baby's fontanelle/umbilical
- In the remote area, the minority association must be consulted to dismiss some of the wrong belief such as beating the woman to chase away the evil spirit, deliver the baby in an inappropriate and unsanitary place.

Consult on contraceptive, reduce frequent pregnancy and choosing the modern birth control method according to their needs.

1-2 Check for danger signs and treatment management of complications

1-2-1 pre-eclampsia, severe pre-eclampsia, eclampsia

Screen all pregnant women for pre-eclampsia at every antenatal visit as follows:

Ask, check, record	Look, listen, feel
<ul style="list-style-type: none"> • Check for blood pressure, especially the 	<ul style="list-style-type: none"> • Measure blood pressure - If diastolic blood pressure is 90 mmHg or more, repeat after at least 15 minutes rest

diastolic pressure at last visit	<ul style="list-style-type: none"> - If diastolic blood pressure is still 90 mmHg or more, ask the woman if she has: <ul style="list-style-type: none"> ○ Used antihypertensive drugs ○ severe headache ○ Silver lights, blurred vision, epigastric pain, and ○ Check urine for protein.
----------------------------------	--

Pre-eclampsia, severe pre-eclampsia and eclampsia are managed similarly, with the exception that delivery must occur within 12 hours of onset of convulsions in eclampsia. All cases of severe pre-eclampsia should be managed actively.

Assess and manage the woman who presents with pre-eclampsia, severe pre-eclampsia or eclampsia as follows:

General management:

- If the woman is unconscious or convulsing, shout for help and mobilize all available personnel
 - Perform a rapid evaluation of the general condition of the woman, including vital signs
- If the woman is not breathing or her breathing is shallow, check airway and provide necessary management (page 237)
- If she is not breathing, assist ventilation using an ambu bag and mask or give oxygen at 4 – 6 L per minute by endotracheal tube
- If she is breathing, give oxygen at 4 – 6 L per minute by mask or nasal cannula

- If the woman is unconscious:
 - Check airway and the respiratory opening, if necessary, insert the tongue depressor in the mouth and vacuum clean the airway if secretions obstruct airway
 - Position her on left side
 - Check for stiff neck
 - Protect her from collision injury
- If woman is convulsing:
 - Position her on her left side or reduce the risk of aspiration of secretions, vomit
 - Vacuum clean the respiratory secretions and insert the tongue depressor to open up the airway or prevent tongue biting if the woman is suffering from eclampsia convulsion
 - Protect her from injuries such as fall from the bed

- Provide constant supervision.
- If eclampsia is diagnosed, give magnesium sulfate as indicated in the following table
- If the cause of convulsions has not been determined, manage as eclampsia and continue to investigate other causes.
-

Assessment/Signs and Symptoms	Appropriate Management
<p>High blood pressure:</p> <ul style="list-style-type: none"> - Diastolic blood pressure \geq 90 mmHg (15 minutes apart) on two readings 	<p>High blood pressure:</p> <ul style="list-style-type: none"> - Advice to take rest, reduce heavy work - Advice on the danger signs (severe headache, blurred visions, dizziness, epigastric pain) - Reassess the next antenatal visit in 1 week if the fetus is more than 8 months' old - If hypertension persist at next visit, please refer to following for management.
<p>Pre-eclampsia:</p> <ul style="list-style-type: none"> • two readings (15 minutes apart) of diastolic blood pressure are between 90-110 mmHg and proteinuria ++ 	<p>Pre-eclampsia:</p> <ul style="list-style-type: none"> • Monitor blood pressure, urine (for proteinuria), reflexes and fetal condition • Counsel the woman and her family about danger signals of severe pre-eclampsia and eclampsia • Encourage additional periods of rest • Encourage the woman to eat normal diet (salt restriction should be discouraged) • Do not give anticonvulsants, antihypertensives, sedatives or tranquilizers • if the condition of the woman is improved, follow up as outpatient, but if signs remain unchanged, the woman is required to hospitalize. • If hospitalized:

	<ul style="list-style-type: none"> - Provide normal diet (salt restriction should be discouraged) - Monitor blood pressure (twice daily) and urine for proteinuria (daily) - Do not give anticonvulsants, antihypertensives, sedatives or tranquilizers and diuretics.
<p>Severe pre-eclampsia:</p> <ul style="list-style-type: none"> • Diastolic blood pressure 110 mm Hg or more and proteinuria +++ • OR diastolic blood pressure 90 mmHg or more on two readings and proteinuria ++ and any of: <ul style="list-style-type: none"> - Severe headache - Blurred vision - Epigastric pain 	<p>Severe pre-eclampsia:</p> <ul style="list-style-type: none"> • Start an IV infusion Ringer lactate and give fluids (the amount of fluids should be determined based on the actual need) • Give Magnesium Sulfate • Monitor vital signs and knee reflexes • If diastolic blood pressure remains 110 mmHg, give antihypertensive drugs after given MgSO₄ (page 42) • Insert a urinary catheter to monitor urine output and proteinuria • Maintain a strict fluid balance record • Deliver the baby within 24 hours based on mother and fetus conditions and manage accordingly. if cervix is soft, thin, partly dilated, rupture membranes and induce labor (part 7.3) • If the delivery is not anticipated within 24 hours, deliver by caesarean section • In case of premature delivery, give corticosteroids to avoid fatality to the premature-newborn
<p>Eclampsia:</p> <ul style="list-style-type: none"> • Convulsions • Diastolic blood pressure 90 mmHg or more • Proteinuria ++ or more 	<p>Eclampsia:</p> <ul style="list-style-type: none"> • All above, plus • In case convulsion happens, gather equipment (airway suction, mask

	<p>and bag, oxygen) and give oxygen at 4 -6 L per minute.</p> <ul style="list-style-type: none"> • Protect the woman from injury • Deliver baby within 12 hours after onset of convulsions. If cervix is soft, thin, partly dilated, rupture membranes and induce labor (part 7.3). If delivery is not anticipated within 12 hours, deliver by caesarean.
--	---

Giving the dose of Magnesium Sulphate (MgSO4):

A. First dose:

MgSO4 is the most effective drug to give to severe pre-eclamptic mothers to prevent fitting and to eclamptic mothers to make blood flow in the brain better and prevent convulsions from occurring again.

Using 50% MgSO4 (10ml amps = 5g):

- Draw up MgSO4 5g (10ml) and dilute with 20 ml of a solution (total 30ml) for IV injection using three 10cc syringes and give slowly – over 15-20 minutes – either through a scalp vein 25G needle into the rubber tubing of a fast flowing IV infusion (this latter method dilutes the drug entering the body of the women very effectively)
- Give MgSO4 5g (10ml) using 10 cc syringe by injecting deep into the right buttock muscle of the woman by long needle (6cm)
- Give MgSO4 5g (10ml) using 10 cc syringe by injecting deep into the left buttock muscle of the woman by long needle (6cm)

Note: The first dose of MgSO4 is 15g (5g injecting slowly through IV + 5g injecting deeply into right buttock muscle + 5g injecting deeply into left buttock muscle

If the woman is still having a fit after receiving the amount above, must administer 2g of MgSO4 (4ml of medicine mixed with 6ml of injectable solution) slowly through IV injection (through 25G scalp vein) again for 5-10 minutes. Record the time and dose of the medicine provided.

B. Continuous dose:

Administer 5g of MgSO4 through deep IM injection every 5 hours, switch the injection between the left and the right side of the hip up until 24 hours after birth (or 24 hours after the last convulsion if the eclampsia occur after the birth).

- Monitor the overuse of MgSO₄ by checking on the knee muscle reflexes, amount of urine (normally more than 25ml per hour) and respiratory rate (normally more than 12 times per minute) consistently before administering the next dose
- Pause on the next dose of MgSO₄ if the following signs occur:
 - Decrease muscle reflexes (knee)
 - Amount of urine less than 100ml in 4 hours
 - Respiratory rate less than 12 times per minute
- When the respiratory rate is less than 10 times/minute, must stop administering MgSO₄ and start administering 1g of Calcium Gluconate 10% (1 glass vial= 10ml) (antidote of MgSO₄) through IV injection for more than 3 minutes
- If the woman stops breathing, pump the air using the ambu bag and mask and stop administering MgSO₄ and start administering 1g of Calcium Gluconate (10ml) slowly through IV injection for more than 3 minutes

(the reaction of MgSO₄ for the above dosage rarely happen in a career of the gynecologist. Most of them have never seen a case like that).

- Point to consider when caring for woman with preeclampsia or eclampsia:
 - Don't leave the woman alone
 - Lay the woman on the side and don't let them fall or get injured
 - Beware of tongue biting and protect the breathing by inserting the tongue depressor (do not try to insert the tongue depressor when the woman is in an intense state of convulsion or biting her teeth shut)
 - Do not inject the MgSO₄ too quick as it can cause apnea and death
 - If the respiratory rate is slow (respiratory rate less than 12 times/minute) after injecting MgSO₄, must pause on administering the next dose of MgSO₄
 - Do not administer MgSO₄ 50% through IV injection without mixing it as a liquid solution
 - If the woman needs to go into deliver, manage as normal birth and continue to administer MgSO₄ 24 hours after birth (page 94)
 - Keep the woman laying on her left side.

Note: After receiving MgSO₄ the woman can feel uncomfortably hot, thirsty, headache, vomiting or nauseous.

Formulation of Magnesium Sulphate (MgSO₄)

		Solution magnesium sulphate 50% : 5g/10ml amps
IV	5g	Dilute with solution injectable: total 30 ml (10 ml of magnesium sulphate, 20 ml of solution injectable)
IM	10g	IM (buttock) deep without dilute, each site 5g
Reconvulsion	2g	2g of magnesium sulphate dilute with solution injectable 10 ml, IV slowly

Give appropriate antihypertensive drug after give MgSO4:

If diastolic blood pressure is >100 mmHg:

- Give hydralazine 10mg = 1ml dilute with 9ml solution IV slowly (3-4 minutes). If IV not possible, give IM
- If after 30 minutes, diastolic blood pressure remains > 90 mmHg, repeat the dose until blood pressure decrease to 90mmHg. 20mg in total is the first dose
- Record dose and time of injection on patient record
- Refer to the eclampsia management protocol above for continues dose.

Drug choice and dosage for fighting against severe hypertension

Drug Choice	Dosage
Nifedipine immediate release	Treatment by pill <ul style="list-style-type: none"> • Administer 5-10mg orally • If the blood pressure does not go down, add more 30 minutes later and until the blood pressure go down to the desired rate • The highest dosage is 30mg for acute treatment setting.
Alpha methyidopa	Treatment by pill <ul style="list-style-type: none"> • Administer 750mg orally • Continue to administer every 3 hours until the blood pressure goes down to the desired rate • The highest dosage is 3g in 24 hours.

Drug choice and dosage for fighting against non-severe hypertension

Drug Choice	Dosage
Alpha methyidopa	<ul style="list-style-type: none"> • Administer 250mg orally every 6 to 8 hours • The highest dosage is 2000mg in 24 hours.
Nifedipine (modifier release)	<ul style="list-style-type: none"> • Administer 1 pill (20mg) 2 or 3 times orally • The highest dosage is 160mg in 24 hours.

1-2-2 Check for anemia and management

Recent study shows that not just severe anemia that put the woman at risk of dying, but all degree of anemia. Anemia in pregnancy decrease ability to survive when those women develop bleeding during and after delivery.

For newborn, anemia causes premature delivery or low birth weight and risk of dying. Globally, 22% of maternal death associated with anemia. Pregnant women referred to hospital for other purposes should be screened for anemia.

Ask, check, record	Look, listen, feel
<ul style="list-style-type: none"> • Do you tire easily? • Are you breathless (short of breath) during routine household work? 	<ul style="list-style-type: none"> • Amount of hemoglobin? • Look for anemia on palms and conjunctiva pallor (anemia or mild-moderate anemia) • Count the number of breaths in one minute

Assess and manage anemia

<p>General Management:</p> <ul style="list-style-type: none"> • Measure hemoglobin • Look for conjunctival and palmar pallor • Check if breaths per minute > 30 • Give the standard dose of iron/folic acid to all non-anemic women (90 tabs over the course of pregnancy, 60 at first visit, 30 more at a subsequent visit); provide additional care as below for severe or mild-moderate anemia.

Assessment/signs and symptoms	Appropriate management
<p>Severe anemia:</p> <ul style="list-style-type: none"> • Hemoglobin <7 g/dl AND/OR • Severe palmar and/or conjunctival pallor • Any pallor with any of: <ul style="list-style-type: none"> >30 breaths per minute - Woman tires easily - Breathless at rest 	<p>Severe anemia:</p> <ul style="list-style-type: none"> • Initiate double dose of 60mg iron/folic acid 2 tablets daily (1 tablet during breakfast and 1 tablet during dinner daily) for 3 months • In case of malaria, please follow the national treatment guidelines for malaria in Cambodia • Counsel on compliance with treatment • If < 36 weeks gestation and woman after labor, administer folic acid medicine (60mg-400micrograms) to

	<p>be taken 2 times per day for 3 months and request the woman to return to follow up after 14 days of treatment and then must follow up every 4 weeks and continue the treatment for 3 months</p> <ul style="list-style-type: none"> • If \geq 36 weeks gestation admit to hospital until delivery (see national treatment guidelines on administering folic acid medicine to protect and treat anemia for pregnant woman and woman after labor) • Women with severe anemia should receive blood transfusion.
<p>Mild to Moderate anemia:</p> <ul style="list-style-type: none"> • Hemoglobin 7-11 g/dL- OR hematocrit 21%-30% • Palmar or conjunctival pallor 	<p>Mild to Moderate anemia:</p> <ul style="list-style-type: none"> • Administer 60mg iron/folic acid 2 tablets daily (1 tablet during breakfast and 1 tablet during dinner daily) for 30 days following up after 2 weeks • Repeat the above for 3 months if still anaemia • In case of malaria, please follow the national treatment guidelines for malaria in Cambodia • Counsel on compliance with treatment

1-2-3 Check for syphilis and manage

Conduct rapid test for syphilis on every woman's first antenatal check-up and check the woman condition every time she come for check-up. If the woman has not done the test during the pregnancy, the woman must conduct this test during labor. Provide information on the benefit of the syphilis test.

Ask, Check, Record	Look, Listen, Feel
<ul style="list-style-type: none"> • Have you been tested for syphilis during this pregnancy? • Have you or your partner been treated for syphilis? • Are you allergic to penicillin? 	<ul style="list-style-type: none"> • Perform a rapid syphilis test (if not available, refer woman to facility where test is available and perform treatment accordingly)

Management of syphilis

- Provide information about the advantage of syphilis testing
- Look for any genital ulcer or sore:
 - If it is present, follow National Guidelines on STI/RTI case management)
 - If not present, do rapid syphilis test
- Take blood from finger prick. Using Treponema-specific rapid diagnosis test (RDT) "Bioline" or Duo for HIV and syphilis test.
 - If test result is negative, it is very unlikely that the woman is infected by syphilis.
 - If the test is reaction, do qualitative RPR testing by collecting a sample of 5ml then send it to the laboratory.
 - If the qualitative RPR test is negative, syphilis infection detected by rapid test has probably been treated in the past.
 - If the qualitative RPR testing is positive, the infection is probably more recent and might not be treated, so it needs to be treated as soon as possible, especially the treatment should be done by health care provider at ANC service.

Give Benzathine Benzyl penicillin G 2.4million units IM single dose to all asymptomatic pregnant women found to have positive rapid and RPR tests. It is also used to treat pregnant women with primary syphilis (present genital ulcer) and secondary syphilis.

In case Penicillin-allergic, give Erythromycin 500mg, orally four times daily for 14 days. (For more information and follow up and monitoring, please see Standard Operational Procedures for syphilis screening among pregnant women in Kingdom of Cambodia, MOH, July 2008)

- Encourage the woman to bring her sexual partner for syphilis testing and treatment. Provide counseling on correct and consistent use of condoms to prevent new infection. Refer the woman to health facility where STI and treatment the service is available, if there is no service yet at that hospital.

1-2-4 Check for HIV status

PMTCT service is integrated into existing MNCH, in order to facilitate access to health services for women s and to reduce stigmatization and discrimination. All women receiving antenatal care should be offered confidential counseling and testing for HIV as a standard part of ANC, preferably at the first ANC visit. Counselors should encourage the partners of pregnant women (particularly of women found to be HIV-infected, women with STIs and women with a history of high-risk behaviors or whose partners have a history of risk behaviors) to participate in counseling and rapid confidential testing.

Pregnant women, whose HIV status at delivery is unknown, should be offered counseling and testing during labor, routine HIV test should be offer during ANC. But woman can refuse if she doesn't want.

Ask, check, record

A. General:

- Ask for the level of knowledge of the woman about HIV, mode of transmission,
- provide key information on HIV and advantage of knowing HIV status, then ask:
 - Have you ever been tested for HIV during this period of pregnancy?
if not, provide her with information on the benefit of knowing her status and encourage her for testing.
if yes, check result (explain to the woman that she has a right not to disclose result), if positive result, then ask: are you taking any ARV medicines?
check ARV treatment plan, then ask:
has your partner been tested?
- Ask for any problems she has.

B. Pre-testing counseling:

The following topics should be covered in the pre-test counseling:

- Basic HIV/AIDS information, including HIV transmission and prevention
- Advantages of routine HIV counseling and testing
- Risks of contracting of HIV and risk reduction options
- MTCT and available options for prevention, including infant feeding options
- Confidentiality of HIV testing. Test results are confidential and will not be shared with anyone other than health care workers directly involved in providing services to the patient
- Implications of negative test results, including an explanation of the "window period"
- Implications of reaction test results must be sent to do a verification test at the hospital with the opportunistic infection treatment service and antiretroviral therapy (Pre-ART/ART)
 - Importance of disclosure of test results
 - Availability of HIV treatment and support services.

Note: *Anyone can refuse the test.*

C. Post – test counseling:

✚ HIV Test Negative:

- Ensure the client understands the "window period" and advise repeat testing in 3 months if there has been recent or ongoing high risk exposure
- Review the client's plans for risk reduction, including how to prevent possible future HIV infection
- Explore the woman's perceptions of her husband or partner's behaviors and HIV status. If the woman thinks that her husband or partner may have HIV infection or high risk behaviors, husband or partner's testing should be advised
- Explain the high risk of transmitting HIV to the infant if HIV infection is acquired during pregnancy or breastfeeding and how to minimize this risk of HIV transmission
- Inform the women that further counseling is available if needed.

✚ **Test for HIV reaction:**

In case of reaction to the rapid test, the adviser must not give the test result to the woman but advise woman to do a verification test at VCCT of the referral hospital with the opportunistic infection treatment service and medicine against HIV (Pre-ART/ART) nearby

✚ HIV Test Positive:

- Adviser at VCCT must transfer the woman to register for the Pre-ART/ART service to get the medicine against the HIV (option B+), 3 types of medicines combined
- Woman infected with HIV must continue to be monitored and provided with antenatal service as the woman without HIV
- Explain the importance of safe delivery and help the client to plan for delivery at the hospital where the treatment and support facilities are available
- Provide information about safe abortion services
- Discuss the benefits and risks of HIV disclosure and encourage partners and children to go for HIV testing and counseling
- Provide counseling on living and coping with HIV (psychosocial support)
- Remind the woman on how to prevent transmission of HIV
- Clearly explain infant feeding options and follow-up services.

☆ **Management and advice**

- Check for signs and symptoms of STIs and HIV. If the facility for testing is available, perform a rapid HIV test if not performed in this pregnancy.

If the woman appears to have signs suggesting HIV infection, assess and provide care as follows.

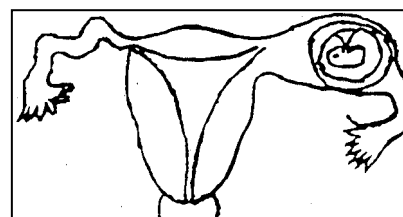
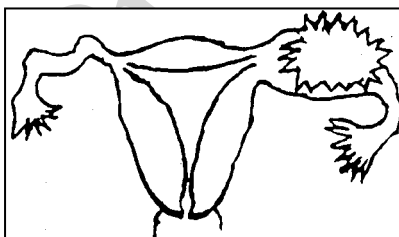
Ask, check, record	LOOK, Listen, Feel
<ul style="list-style-type: none"> • Have you lost weight? • Do you have a fever? If yes, how long? • Do you have diarrhea (continuous or intermittent). • If yes, how long? • Do you have a cough? If yes, how long? 	<ul style="list-style-type: none"> • Look for visible wasting • Look for ulcers and white patches in the mouth (thrush) • Look at the skin for: <ul style="list-style-type: none"> - Rash - Blisters along the ribs on one side of the body

- The woman is likely to have HIV (two of these signs: weight loss, fever, diarrhea more than 1 month):
 - Advise on HIV testing and counseling
 - Counsel on safer sex, including use of condoms
 - Perform a rapid HIV test if not performed in this pregnancy

1-2-5 Management of vaginal bleeding in early pregnancy

Vaginal bleeding in early pregnancy is bleeding that occurs during the first 26 weeks of pregnancy.

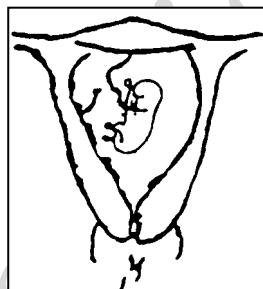
- A. **Ectopic pregnancy.** An ectopic pregnancy is one in which implantation occurs outside the uterine cavity. Ectopic pregnancy should be considered when identifying the cause of vaginal bleeding in early pregnancy in any mother with anemia, pelvic inflammatory disease (PID), threatened abortion, or unusual complaints about abdominal pain.



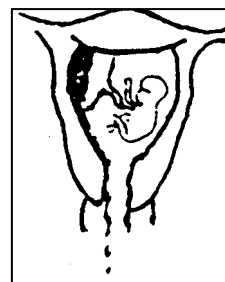
Rupture Ectopic

Unruptured Ectopic

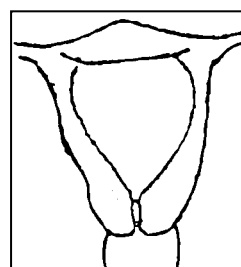
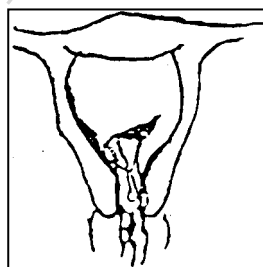
- B. **Miscarriage** should be considered in any woman of reproductive age who has a missed period (delayed menstrual bleeding with more than a month having passed since her last menstrual period) and has one or more of the following: bleeding, cramping, partial expulsion of products of conception, dilated cervix, or smaller uterus than expected.
- **Spontaneous miscarriage** is defined as the loss of pregnancy before fetal viability (26 weeks' gestation). The stages of spontaneous abortion may include:
 - Threatened abortion (pregnancy may continue)
 - Inevitable abortion (pregnancy will not continue and will proceed to incomplete/complete abortion)
 - Incomplete abortion (products of conception are partially expelled)
 - Complete abortion (products of conception are completely expelled).
 - **Missed abortion:** Fetus no heart beat, uterus size smaller than gestational age, woman had light bleeding or no bleeding, cervix close.
 - **Abortion** is a process by which pregnancy is terminated through medical or any certain measures before fetal viability (26 weeks gestation)
 - **Unsafe abortion** is a procedure performed either by persons lacking the necessary skills or in an environment unsuitable for medical standards
 - **Septic** is an abortion complicated by infection. Sepsis is infection arising from the lower genital tract following either spontaneous or unsafe abortion. Sepsis is more likely to occur if there are retained products of conception and evacuation has been delayed. Sepsis is a frequent complication of unsafe abortion involving instrumentation.



Threatened abortion



Inevitable abortion



Incomplete abortion

Complete abortion

- **Molar pregnancy** is characterized by an abnormal proliferation of chorionic villi. Assess and manage the treatment of the woman who presents with vaginal bleeding in early pregnancy, as follows or stabilize the woman and send her to the hospital with the appropriate treatment management.

Assessment and management of vaginal bleeding in early pregnancy	
General management (all cases)	
<ul style="list-style-type: none"> • Rapidly assess the woman's general condition • If shock is suspected, begin treatment immediately (as in section 7.2) • If the mother is in shock, consider ruptured ectopic pregnancy • Assess if IV fluid is needed and start an IV infusion and infuse IV fluids • Assess with echography if needed • Consider antibiotics if needed/indicated based on the condition of the woman. 	
Assessment/signs and symptoms	Appropriate management
Threatened abortion: <ul style="list-style-type: none"> • Light bleeding • Closed cervix • Uterus corresponds to dates 	Threatened abortion: <ul style="list-style-type: none"> • Medical treatment is not usually necessary • Advise the mother to avoid strenuous activity and sexual intercourse, but bed rest is not necessary • If bleeding stops, • assess for fetal viability (ultrasound): <ul style="list-style-type: none"> – If fetus is still alive, continue to stay at the hospital for further follow-up – If the fetus dies, do evacuation (Section 4).
Inevitable abortion: <ul style="list-style-type: none"> • Heavy bleeding • Dilated cervix • Uterus corresponds to dates 	Inevitable abortion: <ul style="list-style-type: none"> • If pregnancy is less than 12 weeks, plan for evacuation of uterine contents by MVA. • If pregnancy is between 12-18 weeks, do instrumental evacuation. • If pregnancy is greater than 18 weeks, await spontaneous

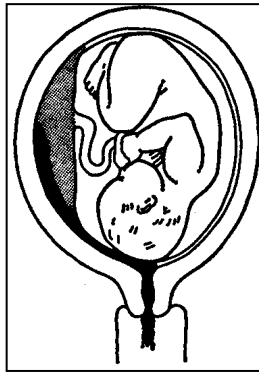
	<p>evacuation (see national guidelines for post-abortion care)</p> <ul style="list-style-type: none"> • Ensure follow up of the mother after procedure and treatment. •
<p>Incomplete abortion:</p> <ul style="list-style-type: none"> • Heavy bleeding • Dilated cervix • Uterus smaller than dates 	<p>Incomplete abortion:</p> <ul style="list-style-type: none"> • Use manual vacuum aspiration for evacuation of uterus –(see national protocol for post abortion care) • Ensure follow-up of the woman after treatment
<p>Complete abortion:</p> <ul style="list-style-type: none"> • Light bleeding • Closed cervix • Uterus smaller than dates • Uterus softer than normal 	<p>Complete abortion:</p> <ul style="list-style-type: none"> • Evacuation of the uterus is not usually necessary • Observe for heavy bleeding • Ensure follow-up of the mother after treatment
<p>Missed abortion:</p> <ul style="list-style-type: none"> • Bleeding –stopped or slight brownish discharge • Pain-none • Cervix-closed • Uterus smaller than dates 	<p>Missed abortion:</p> <ul style="list-style-type: none"> • Provide emotional support • Counsel women on the need of uterus evacuation • If ultrasound confirms the diagnosis, consider Dilatation & Evaluation • Follow-up mother after treatment.
<p>Ectopic pregnancy:</p> <ul style="list-style-type: none"> • Light bleeding • Abdominal pain • Closed cervix • Uterus slightly larger than normal • Uterus softer than normal • Abdominal distension • Rebound tenderness • Shock (ruptured) 	<p>Ectopic pregnancy:</p> <ul style="list-style-type: none"> • Stabilized woman • Cross match blood <p>Prepare blood donor Arrange for immediate laparotomy. DO NOT wait for blood before performing surgery.</p>
<p>Molar Pregnancy:</p> <ul style="list-style-type: none"> • Severe vomiting • Mild or heavy bleeding • Closed or dilated cervix • Uterus larger than dates • Uterus softer than normal 	<p>Molar Pregnancy:</p> <ul style="list-style-type: none"> • Stabilize the woman and refer to a hospital where rapid surgery is available • Prepare blood and the blood donor • If diagnosis of molar pregnancy is confirmed by the ultrasound must:

<ul style="list-style-type: none"> • Partial expulsion of products of conception which resemble grapes 	<ul style="list-style-type: none"> - Measure BetaHCG - Start lung radiography and • End the pregnancy by Manual Vacuum Aspiration (MVA) or Electric Vacuum Aspiration (EVA) (section 7-16). Curettage should not be done as uterine perforation is very common. When evacuation the uterus, 2 or 3 syringes must be quickly prepared for suction • Infuse oxytocin 20 IU in 1 L IV fluids (normal saline or ringer lactate) at 60 drops per minute to prevent hemorrhage once evacuation is underway <p>Post Evacuation Management:</p> <ul style="list-style-type: none"> • Confirm that there is no fragment of molar pregnancy before discharging the woman • Recommend the woman to use contraceptive pills at least for a year to prevent pregnancy. Tubal Ligation can be provided for woman who have enough child • Follow up on the woman every week for the first month after evacuation by testing the BetaHCG. 3 months later, follow up every month and then every 3 months in the first year and every 6 months in the second year • If the amount in the test result remains stable or increase in the first month or return to being positive during the first year, must immediately send the woman to the level 3 hospital or National Hospital to monitor further and manage Choriocarcinoma.
---	---

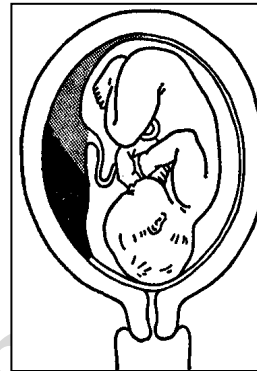
1-2-6 Management of vaginal bleeding in later pregnancy and labor

Vaginal bleeding in later pregnancy is bleeding that occurs after 26 weeks of pregnancy. The probable causes are abruptio placentae, ruptured uterus, and placenta previa; all three of these conditions may be accompanied by shock.

A. Abruptio placentae is the detachment of a normally located placenta from the uterus before the fetus is delivered, and is characterized by bleeding after 26 weeks gestation and intermittent or constant abdominal pain.



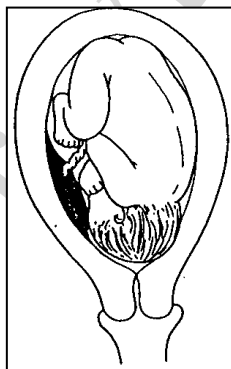
External Hemorrhage



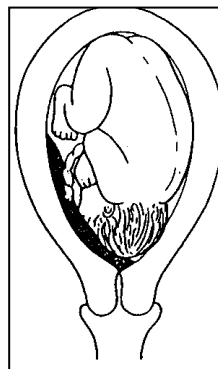
Internal/Concealed Hemorrhage

B. Ruptured uterus is characterized by intra-abdominal and/or vaginal bleeding and severe abdominal pain that may decrease after rupture.

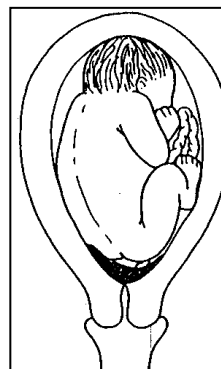
C. Placenta praevia is implantation of the placenta at or near the cervix and is characterized by bleeding after 26 weeks gestation.



Marginal



Partial



Total

Assess and manage the woman who presents with vaginal bleeding in later pregnancy (more than 26 weeks) and labor as follows:

<p>General management:</p> <ul style="list-style-type: none"> • Shout for help, urgently mobilize all available personnel • Rapidly assess the woman's general condition including vital signs (pulse, blood pressure, respiration and temperature) • DO NOT do a vaginal examination (as it can worsen the bleeding) at a place that does not have surgical capacity • If shock is suspected, begin treatment immediately as shown part 72 • Start an IV infusion and infuse IV fluids • Assess with ultrasound as indicated. 	
<p>Assessment/signs and symptoms</p>	<p>Appropriate management</p>
<p>Abruptio placentae:</p> <ul style="list-style-type: none"> • Bleeding after 26 weeks (may be retained in uterus) • Intermittent or constant abdominal pain • Shock • Tense/tender uterus • Decrease/absent fetal movements • Fetal distress or absent fetal heart sound 	<p>Abruptio placentae:</p> <ul style="list-style-type: none"> • Stabilize the woman • Assess clotting status using a bedside clotting test (page 292). Failure of a clot to form after seven minutes or a soft clot that breaks down easily suggests coagulopathy • Prepare blood donor • Transfuse as necessary, preferably with fresh blood • If bleeding is heavy (evident or hidden), consider delivery as soon as possible: <ul style="list-style-type: none"> - If cervix is fully dilated, deliver by vacuum extraction - If vaginal delivery is not imminent, deliver by caesarian section • If bleeding is light to moderate (the mother is not in immediate danger), the course of action depends on the fetal heart rate: <ul style="list-style-type: none"> - If fetal heart rate is normal or absent (little cervical dilatation), rupture the membrane with an amniotic hook or Kocher clamp

	<ul style="list-style-type: none"> • If contractions are poor, augment labor with oxytocin • If the cervix is unfavorable (firm, thick, closed), perform caesarian section (even the fetal is death) - If fetal heart rate is abnormal (less than 110 or more than 160 beats per minute): • perform rapid vaginal delivery • if vaginal delivery is not possible, deliver by immediate caesarean section.
<p>Ruptured Uterus:</p> <ul style="list-style-type: none"> • Bleeding (intra-abdominal and/or vaginal) • Severe abdominal pain (may decrease after rupture) • Shock • Abdominal distension • Abnormal uterine contour • Easily palpable fetal parts • Absent fetal movement and fetal heart sound • Rapid maternal pulse 	<p>Ruptured Uterus:</p> <ul style="list-style-type: none"> • Stabilize the woman • Prepare blood donor • Restore blood volume by infusing IV fluids before surgery (normal saline or ringer lactate) • When stable, immediately perform laparotomy and deliver baby and placenta • Repair the uterus if the edges of the tear are not very fragmented, and < than 6 hours • If the uterus cannot be repaired with less operative risk, perform sub-total hysterectomy.
<p>Placenta praevia:</p> <ul style="list-style-type: none"> • Bleeding after 26 weeks gestation • Shock • Bleeding may be precipitated by intercourse • Relaxed uterus • Fetal presentation not in pelvis/lower uterine pole feels empty • Normal fetal condition 	<p>Placenta praevia:</p> <ul style="list-style-type: none"> • DO NOT perform a vaginal examination unless preparations have been made for immediate cesarean section Stabilize woman and prepare blood donor • Corticosteroid is provided to the mother to mature their lungs if the fetus is less than 34 weeks old • restore blood volume by infusing IV fluids Assess the amount of bleeding: <ul style="list-style-type: none"> - if bleeding is heavy and continuous, arrange for cesarean section regardless of fetal maturity

	<ul style="list-style-type: none"> - If the bleeding is light and the fetus is alive (from week 37) must end the pregnancy through obstetric condition - If bleeding is light and fetus is alive but premature, consider expectant management until term or heavy bleeding occurs • Keep the woman in the hospital until delivery (based on the woman's condition) • Correct anemia with ferrous sulfate or iron/ folate acid by mouth daily for six months • Ensure the blood is available for transfusion if required • If bleeding recurs, decide management after weighing benefits and risks for the woman and fetus of further expectant management versus delivery.
--	--

1-2-7 Fever During Pregnancy and Labor

Fever (temperature 38°C or more) during pregnancy and labor is a sign of infection and must be managed properly.

General management: <ul style="list-style-type: none"> - Encourage increased fluid intake by mouth - Encourage bed rest - Use a fan or tepid sponge to help decrease temperature - Start an IV infusion, if necessary 	
Assessment/Symptoms and Signs	Appropriate management
Lower urinary tract infection: Burning on urination	Lower urinary tract infection: <ul style="list-style-type: none"> • Amoxicillin 500 mg by mouth three times per day for 5 days Or sulfamethoxazole trimethoprim 480g by mouth two tablets per time and two times per day for five days • Encourage her to drink more fluids • Maintain healthy hygiene practice
Cystitis	Cystitis

	<p>Treat with antibiotics</p> <ul style="list-style-type: none"> • Amoxicillin 500 mg by mouth three times per day for 5 days Orsulfamethoxazole trimethoprim 480g by mouth two tablets per time and two times per day for five days. • If treatment fails, check urine culture sensitivity, and treat with an antibiotic appropriate for the organism.
<p>Acute pyelonephritis (upper urinary tract infection):</p> <ul style="list-style-type: none"> • Fever >38°C plus any of <ul style="list-style-type: none"> - Dysuria Spiking fever/chills ¼ Increased frequency and urgency of urination Abdominal pain 	<p>Acute pyelonephritis:</p> <ul style="list-style-type: none"> • If shock is present or suspected, initiate immediate treatment (refer to the section on shock management, page 238) • Start an IV infusion and infuse fluids at 150 ml/hour • Check urine for culture and sensitivity, if possible, and treat with antibiotic appropriate to organism • If urine culture not possible, treat with antibiotics as follows until fever free for 48 hours: <ul style="list-style-type: none"> - Ampicillin 2 g IV first then 1 g every 8 hours PLUS - Gentamicin 80 mg IV every 12 hours • When fever free for 48 hours, give amoxicillin 500 mg by mouth 3 times daily to complete 7 days of treatment • If unable to give antibiotics IV, give IM
<p>Pneumonia:</p> <ul style="list-style-type: none"> • Fever • Difficulty breathing • Cough with expectoration • Chest pain 	<p>Pneumonia:</p> <ul style="list-style-type: none"> - Ampicillin 2 g IV first then 1 g every 8 hours PLUS - Gentamicin 80 mg IV every 12 hours • When fever free for 48 hours, give amoxicillin 500 mg by mouth 3 times daily to complete 7 days of treatment if unable to give antibiotics IV, give IM
<p>Uncomplicated malaria:</p> <ul style="list-style-type: none"> • Fever • Chills/rigors • Sweating 	<p>Uncomplicated malaria:</p> <ul style="list-style-type: none"> • Follow national treatment guideline for malaria in Cambodia

<ul style="list-style-type: none"> • Headache muscle/joint pain 	
<p>Severe/complicated malaria:</p> <ul style="list-style-type: none"> • Symptoms and signs of uncomplicated malaria together with the following signs: <ul style="list-style-type: none"> – Anemia – Fatigued – Metal illness – Breathing difficulties – Frequent convulsion – Low blood pressure – Abnormal bleeding – Oliguria, frequency vomiting 	<p>Severe/complicated malaria: Follow national treatment guideline for malaria in Cambodia</p>

1-2-8 Management of loss of fetal movements

If the woman reports that the fetus has stopped moving, she should be assessed and managed as follows.

<p>General management:</p> <ul style="list-style-type: none"> • comfort the woman 	
<p>Assessment/signs and symptoms</p> <p>Fetal may die</p> <ul style="list-style-type: none"> • Feel for fetal movements: no movement • Listen for the fetal heart (after six months of pregnancy) if no heartbeat, listen again after 1 hour if still no heart beat or movement, baby probably dead 	<p>Appropriate management</p> <p>Fetal may die</p> <ul style="list-style-type: none"> • Inform mother and partner about the possibility of dead baby • Confirm fetal death by echography • After the clear diagnosis, provide support and encouragement, and explain the mother and her family about the cause and the potential complication • Discuss with mother options of expectant or active management is recommended: • Induction of labor:

	<ul style="list-style-type: none"> - If the cervix is favorable (Score Bishop ≥ 6), induce the labor by PIV oxytocin Massage beneath the amniotic fluid membrane to increase the induction of labor - If the cervix is unfavorable (has a score bishop < 6), waiting for natural labor which will happen within 4 weeks after the fetus died or ripen the cervix by using prostaglandin - After 4 weeks of fetus death, the labor maybe dangerous because of bleeding and infection which requires proper active management (monitor number of Plaquette and Fibronogen). <p>Note:</p> <ul style="list-style-type: none"> • Careful not to do the artificial rupture of membranes because it is easily infected • The massage beneath the amniotic fluid membrane alone can induced the labor (24 to 48 hours) in case of no emergency • Treat the cause of the death of fetus.
<p>Well baby:</p> <ul style="list-style-type: none"> • No fetal movement but fetal heart beat present 	<p>Well baby:</p> <ul style="list-style-type: none"> • Inform the women that baby is fine and likely to be well but return if problem persists

1-2-9 Management pre-labor

The pre-labor is strongly related to the illness and death of the newborn. The management of pre-labor include stopping the uterine contraction by conducting Tocolysis or keep the progression of labor. Please confirm the age of the fetus.

A. Tocolysis

Intervene by giving Tocolytic (i.e., Nifedipine) for the purpose of delay the labor until the Corticosteroid is in effect (see below). Corticosteroid is giving to the mother to make the fetus's lung mature if the fetus is less than 36 weeks' old.

The first step treatment is with Nifedipine which is the drug against Calcium Channel Antagonist and has less side effect.

Use Tocolysis if:

- The fetus is less than 36 weeks' old
 - The cervix is opened less than 3 cm
 - Uninfected amniotic fluid, no pre-eclampsia, or no bleeding
 - The fetus is not weak.
- Confirm the diagnostic of pre-labor using the record of cervical effacement or dilatation that happen for more than 2 hours.
 - If the fetus is less than 36 years old, provide Corticosteroids to mother to make the fetus's lung mature and for survival:
 - 2 doses of Betamethasone 12 mg IM for 24 hours apart
 - Or 2 dose of Dexamethasone 12 mg IM for 12 hours apart

Note: The Corticosteroid should be avoided if there is no clear sign of infection.

- Give Tocolytic (see below) and monitor the conditions of the mother and fetus (pulse, blood pressure, sign of respiratory problems, uterine contraction, loss of amniotic fluid or blood, fetus's heart beat, hydration balance, blood glucose, etc.

Note:

- Tocolytic should not be given for more than 48 hours. If the labor of the pre-labor continues even using Tocolytic, it shall prepare the care for the fetus at the place where fetus care is available. If possible, refer the women before she gives birth.
- Avoid using many types of Tocolytic together
- Avoid using Tocolytic for the following cases:
 - Heart disease
 - amniotic fluid membrane rupture before pre-labor
 - amniotic fluid membrane inflammation
 - retro-placental hematoma.

B. Keep the labor progress

- Keep the labor progress if:
 - The fetus is more than 36 weeks' old
 - The cervix is opened more than 3cm
 - Bleeding

- The fetus is weak or dead or there is an abnormal reaction with the mother if the fetus is alive
- Infected amniotic fluid or pre-eclampsia.
- Monitor the progress of the labor using partograph.
- If the labor still continues and the fetus is less than 37 weeks' old, the Antibiotics should be given to reduce the infection to the fetus:
 - Penicillin G 2 million units IV every 6 hours until delivery or
 - Ampicillin 2 g IV every 6 hours until delivery.

Note:

- If the labor still continues and the fetus is less than 36 weeks' old, monitor the labor using partograph
- Even though cesarean section is the practice to make the premature-newborn stay in good conditions even in Breech presentation or face presentation, it is not recommended to apply
- Avoid manual vacuum aspiration due to the high risk of brain bleeding for the premature-newborn
- Prepare the premature-newborn management or low birth weight newborn and shall prepare in advance the emergency needs using Ambu bag and mask (page 99).

Nifedipine

Do not use Nifedipine	
For mother	For fetus
<ul style="list-style-type: none"> • Low blood pressure (Systolic < 90mmHg) • Allergy with Nifedipine • Heart disease (Congestive cardiac failure, aortic stenosis) • Hepatic dysfunction <ul style="list-style-type: none"> • Use it with Magnesium sulphate and monitor closely. 	<ul style="list-style-type: none"> • Proven intrauterine infection Fetal compromise requiring delivery The placental abruption • The fetus is severe growth restriction • Lethal fetal anomalies Intrauterine fetal death • Undiagnosed significant vaginal bleeding

Dosage of Nifedipine

Due to hypotension effect of Nifedipine, provision of intravenous hydration with sodium chloride 0.9% is needed before giving Nifedipine and the women shall lie on her back. The maximum dose of Nifedipine is 160mg per day.

Initial treatment	Give Nifedipine (immediate release) 10mg placing under the tongue	Time from administer: 0 minutes
	If the uterus still contracts: give Nifedipine (immediate release) 10mg placing under the tongue again	Time from administer: 20 minutes
Maximum dose: give Nifedipine for the first dose not more 40mg during the first hour.		
Maintenance dose	Start giving Nefidipine 20mg (Sustained Release slowly after 2 hours of giving the first dose). Administer every 6 hours and use it for the maximum of 48 hours.	

Observation when using Tocolytic

- Continuously monitor the Cardiotocography (CTG) during the uterine contraction
- Blood pressure and pulse every 30 minutes for 3 hours and after that every hour
- Temperature every 4 hours (while awake)

Side effects of Nifedipine:

- Low blood pressure. For a woman who has normal blood pressure, this side effect causes minor effect. However, for a woman whose blood pressure is high, the effect is remarkable.
- Tachycardia, heart palpitations, flushing, headache, dizziness, Nausea and swelling peripheral

Stope using Nifedipine and inform the physician if:

- Heart beat > 120 beats per minute
- Blood pressure < 90/60 mmHg
- The woman is having heart palpitations, chest pain or breathing difficulties.

MAGNESIUM SULFATE

If the fetus is less than 32 weeks' old, the injection of MgSO₄ IM to mother is to prevent labor which could affect the Cerebral Palsy.

➤ IM dose:

- First dose: 5g deep IM
 - Next dose: 5g deep IM every 5 hours within 24 hours
- Monitor the sign of overdose of MgSO₄: the amount of urine, reflexes and respiratory rate of the mother.

1-2-10 Management pre-labor rupture of membranes

Pre-labor rupture of membranes (PROM) is rupture of the membranes before labor has begun. PROM can occur either when the fetus is immature (before 37 weeks) or when it is mature (term).

It is important that the fetus age is correctly assessed (if applicable, confirm by using echography for early pregnancy) and the membrane rupture is correctly confirmed to avoid giving corticosteroid and antibiotic improperly.

Immediate management:

Implement basic principle in providing service when managing women's complications.

- Confirm the calculation of the fetus's age if applicable
- Record the time and history of vaginal discharge told by the woman
- Measure and record the temperature, pulse and blood pressure, respiratory rate and Oxygen concentration of the woman
- Listen to heart of the fetus and confirm its movement
 - If the heart rate of the fetus is abnormal (less than 100 or more than 180 per minutes), it is suspected of fetal distress
 - If cannot hear the sound of the fetus's heartbeat, ask a few people to help listening or using Doppler if available
- Perform the record by feeling the abdomen: fundal height against Symphysis of the baby presentation (if applicable based on the age of the fetus), presentation (if applicable based on the age of the fetus), conditions of the uterus (tenderness/irritability) and uterine contraction.

If the woman is bleeding during the late pregnancy (after 22 weeks), the manual vaginal examination should not be performed.

Confirmation of diagnostic:

- Do not perform manual vaginal examination because it is not diagnosable and can cause infection
- The typical odor of amniotic fluid confirms the diagnosis. However, if the membrane rupture is not recent or when leakage is gradual, confirming the diagnosis may be difficult
- A sterile speculum can be used for vaginal examination:
 - Amniotic fluid may be seen coming from the cervix or forming a pool in the posterior fornix

- The woman can be asked to cough, which may cause a gush of amniotic fluid
- Define the cervical effacement
- A sanitary pad can be placed over the vulva and examined (visually and by odor) one hour later

Assess and manage the woman who presents with pre-labor rupture of membranes, as follows OR stabilize the woman and manage as following:

Assessment and Management of Pre-labor Rupture of Membranes	
General management:	
<ul style="list-style-type: none"> • reassure the woman 	
Assessment/Signs and Symptoms	Appropriate Management
Pre-labor rupture of membranes: <ul style="list-style-type: none"> • Look at the pad or underwear for signs and amount of amniotic fluid or foul-smelling vaginal discharge • If no evidence, have her wear a pad and check again after 1 hour 	Pre-labor rupture of membranes: <ul style="list-style-type: none"> • Confirm diagnosis and the age of the gestation • If rupture of membrane is over 18 hours ago, provide appropriate antibiotics: <ul style="list-style-type: none"> - Ampicillin 1g IV or IM every 8 hours with - Gentamicin 80mg IM every 12 hours • If there is no sign of infection, stop using antibiotic • If rupture of membranes at 37 weeks of pregnancy manages as for childbirth • If rupture of membranes is below 37 weeks of pregnancy, try to keep the pregnant woman until nearly term but be careful about infection and fetal distress • If pregnancy is below 36 weeks, give Dexamethasone 12mg IM for two doses with 12 hours interval or Betamethasone 12mg IM for two doses with 24 hours interval to improve fetal lung maturity

	<ul style="list-style-type: none"> • Induce labor at 37 weeks by using Oxytocin if natural delivery is at the favorable condition.
<p>Pre-labor rupture of membranes with infection:</p> <ul style="list-style-type: none"> • Foul-smelling vaginal discharge after 26 weeks • Fever/chills • Abdominal pain 	<p>Pre-labor rupture of membranes with infection:</p> <ul style="list-style-type: none"> • Give the following combination of antibiotics until the woman is fever-free for 48 hours <ul style="list-style-type: none"> - Give ampicillin 2 g IV/IM first, then 1 g every 8 hours PLUS - Gentamicin 80 mg IM/IV (5mg/kg) every 8 hours PLUS - Metronidazole 500 mg PIV every 8 hours • If the cervix is favorable, induce labor using PVI oxytocin <p>Note: When resuscitating and caring for the baby (page 99), comply with the infection and prevention control guideline</p>

Provisional

1-2-11 Respond to Observed Signs or Volunteered Problems

Persistent vomiting:

If the woman has persistent vomiting, assess and provide care as follows.

Ask, Check, Record	Look, Listen, Feel
<ul style="list-style-type: none"> • how often do you vomit? • how much do you vomit? 	<ul style="list-style-type: none"> • check for dehydration <ul style="list-style-type: none"> – Eyes – Skin – Mouth – Pulse – Blood pressure.

Management and advice

- Hyperemesis gravidarum without dehydration (frequent vomiting):
 - Reassure the woman
 - Advise her to rest
 - Advise her to eat small amount of food and drink frequently such as ginger drink
 - Advise her that the morning sick will be last only at the middle period of pregnancy.
- Hyperemesis gravidarum with dehydration (frequent vomiting with signs of dehydration)
 - Start IV fluids and treat dehydration
 - Give anti-emetic; Metoclopramide
 - After treating dehydration, advise her to eat foods rich in water little by little but more frequently.
- Should find the reason for an abnormal pregnancy and digestion problem which contribute to severe morning sickness.

B. Vaginal discharge

If the woman is troubled by vaginal discharge, assess and provide care as follows.

Ask, check, record	Look, listen, feel
<ul style="list-style-type: none"> • Have you noticed any changes in your vaginal discharge? • Do you have itching, pain, flushing, odor at the vulva? • Has your partner had a urinary problem? 	<ul style="list-style-type: none"> • Separate the labia and look for abnormal vaginal discharge: <ul style="list-style-type: none"> - Amount - Color

<p>If the woman's partner is present in the clinic, ask her if you can ask him similar questions, if yes, ask him if he has:</p> <ul style="list-style-type: none"> - Urethral discharge or pus? - Burning on passing urine? <p>If the partner could not be approached, explain the importance of partner notification for assessment and treatment to avoid re-infection</p> <p>Schedule a follow-up appointment for the woman and her partner (if possible)</p>	<ul style="list-style-type: none"> - Odor/smell • If no discharge is seen, examine with speculum and perform uterine evacuation
---	---

Management and advice

Possible gonorrhoea or chlamydia (abnormal vaginal discharge, especially from cervix, partner has urethral discharge or burning on urination)

- Give appropriate antibiotics (according to national STI/RTI guidelines)
- Treat partner with appropriate antibiotics (according to national STI/RTI guidelines)
- Counsel on safer sex, including consistent use of condoms.

Possible candida infection (curd like vaginal discharge, vulval itching):

- Treat (according to national STI/RTI guidelines)
- Counsel on safer sex, including consistent use of condoms.

Possible bacterial or trichomonas infection (abnormal vaginal discharge, frothy discharge with foul smell):

- Treat according to national STI/RTI guidelines)
- Counsel on safer sex, including consistent use of condoms.

C. Tuberculosis

If the woman appears to have signs of tuberculosis, assess and provide care as follows.

Ask, check, record:

- Are you taking anti-tuberculosis drugs? If yes, since when?
- Does treatment include injection?

Management and advice:

- If cough more than 2weeks or has suspected symptoms such as cough, cough with bleeding, lost weight, fever or sweat at night, and woman not yet do TB test, she need to do sputum check.
- Woman is taking anti-tuberculosis drugs:
- If treatment includes streptomycin, refer woman to RH for revision of treatment (because streptomycin may affect the fetus)
- If treatment does not include streptomycin, assure the woman that the drugs are not harmful to her baby
- Advise her to continue taking treatment
- if smoking, advise her to stop.

1-3 Give preventive measures

Advise and counsel all pregnant women at every antenatal visit about the following preventive measures:

Assess, Check, Record	Intervention
<ul style="list-style-type: none"> • check tetanus toxin (TT) immunization status - Which dose of TT was this? - When was TT last given? - Encourage woman to bring her records (Mother Card, TT card, etc.) to every health facility visit 	<ul style="list-style-type: none"> • Give tetanus toxin if due • If immunization status unknown, give TT1 • If giving TT1 at first visit, plan to give TT2 at next visit • Counsel a woman to get a total of 5 TT injections
<ul style="list-style-type: none"> • Check woman's supply of the prescribed dose of iron/folic acid 	<ul style="list-style-type: none"> • Give 60 tablets of iron/folic acid at first visit/contact and 30 tablets at second visit/contact (1 tablet of iron/folic acid contains 60mg iron and 400μ folic acid) for a total of 90 tablets over her pregnancy • Counsel on compliance and safe place to keep
Mebendazole	<ul style="list-style-type: none"> • Give mebendazole 500 mg once in second or third trimester of pregnancy • DO NOT give mebendazole in first trimester of pregnancy
<ul style="list-style-type: none"> • Ask the woman if she is sleeping under insecticide treated mosquito nets 	<ul style="list-style-type: none"> • Encourage sleeping under insecticide treated mosquito nets

Tetanus Toxoid Vaccine Schedule for Women:

Dose	Time to get vaccinated	Protection period
TT1	Provide TT vaccine to woman at the reproductive ages or pregnant women during the first visit	No effect
TT2	At least 1 month after the 1 st vaccination	3 years' protection
TT3	At least 6 months after the 2 nd vaccination	5 years' protection
TT4	At least 1 year after the 3 st vaccination	10 years' protection
TT5	At least 1 year after the 4 th vaccination	Lifetime protection

Iron/Folic Acid (1 tablet = iron 60 mg and folic acid 400 µg)		
	Women without anemia	Women with severe or mild-moderate anemia
In pregnancy	1 tablet to be taken daily for 90 tablets throughout the pregnancy	2 tablets to be taken daily for a period of 3 months* repeat if still anaemic after 3 months
Postpartum and postabortion	1 tablet to be taken daily for a period of 42 days	2 tablets to be taken daily for a period of 3 months* repeat if still anaemic after 3 months

* Women should be reassessed and potentially receive alternative treatment for anemia if their condition has worsened.

1-4 Advice and counseling

1-4-1 nutrition and self-care

Advise and counsel the pregnant woman at every antenatal visit on the following topics:

Nutrition	Self-Care
<ul style="list-style-type: none"> Advise the woman to eat an extra meal per day during pregnancy. She should eat four meals a day with a greater amount and variety of locally available foods such as meat, fish, oils, nuts, dark green 	<p>Advise her to:</p> <ul style="list-style-type: none"> Take folic acid medicine properly <ul style="list-style-type: none"> Before going to bed or after meal if there is any side effect Not worry about the black stool (normal)

<p>vegetables, yellow ripe fruits to help her and her baby healthy.</p> <ul style="list-style-type: none"> • Advise the use of iodized salt when cooking foods and to only add a small amount of salt to foods • Spend more time on nutrition counseling with very thin women and adolescents • Determine if there are important taboos about foods which are nutritionally healthy (i.e., foods that are good for the woman) advise the woman against these taboos • Advise the woman that she should gain at least 1 kg per month in the 2nd and 3rd trimesters of pregnancy. 	<ul style="list-style-type: none"> ○ If constipated, drink more water • Rest well and not to raise or carry heavy things • Sleep with your legs elevated to facilitate the blood circulation • Exercise regularly • Sleep inside the insecticide-treated net • Have safe sexual practice (use condom properly and regularly and be honest to partner who have no risk behavior) • Not drinking alcohol, smoking, reducing coffee in order reduce the risk of miscarriage or low birth weight • Avoid using medicine that is not prescribed.
---	---

1-4-2 birth and emergency plan (birth and emergency preparedness)

Develop a birth and emergency plan with the woman at the first antenatal visit, then review and, if necessary, revise the plan at subsequent visits. To help the woman develop a birth and emergency plan, discuss the following:

Facility delivery
<p>Explain why birth in a facility is recommended:</p> <ul style="list-style-type: none"> • Complications in pregnancy are not always predictable • A facility has staff, drugs, equipment, and supplies available, and a referral system • If HIV positive, she will need ARV treatment for herself and baby complications are more common in HIV positive women and newborns.
<p>Advise how to prepare:</p> <ul style="list-style-type: none"> • Advise women to prepare transport and money for transportation. • Advise woman to prepare money for facility delivery • Prepare companion who will go with her for support during labor and delivery • Prepare a person who will help at home while she is away • Determine and write down in a mother health record the phone number: transportation mean, midwife, and facility where she plans to deliver.

Advise when to go:

- If the facility is near, go at the first signs of labor
- If the facility is far, go before the due date or stay near the facility, if possible, or wait at home (if any), ask for help from the community, if needed.

Advise what to bring:

- Mother Health Record
- ID poor card, NSSF, if any
- Four clean cloths which are easily absorb water for drying and covering baby (each is at least 1 square meter), 2 of which will be used at the resuscitation surface, one for drying and one for covering the baby:
 - Clean cloths and sanitary pads to use after delivery
 - Clothes for mother and baby, especially a hat to cover newborn's head, food and water for mother and companion.

1-4-3 Labor signs and danger signs

Advise to go to health facility or contact birth attendant for following labor signs:

- A bloody sticky discharge from vagina
- Painful (uterus contractions) every 20 minutes or less
- Watery bag have broken.

Advise woman to go to health facility **immediately, day or night, without delay** for the following danger signs:

- Vaginal bleeding
- Convulsions
- Severe headache with blurred vision
- Fever and too weak to get out of bed
- Severe abdominal pain
- Fast or difficult breathing.

Advise woman to go to health facility **as soon as possible** for the following danger signs:

- Fever
- Abdominal pain
- Feels ill
- Swelling of fingers, face, legs.

1-4-4 Advice and counsel on essential newborn care

To help the mother prepare for the birth of her baby, please advise and counsel her on newborn care as follows:

<p>Early and exclusive breastfeeding</p> <p>Explain to the mother that she should breastfeed her baby within 1 hour of birth:</p> <ul style="list-style-type: none"> • breast milk produced in the first few days after delivery is called colostrum. It is thick and yellowish or clear in color. It contains a lot of protein and vitamin A and protects strongly against infection. A newborn's stomach is Small, the size of a thumbnail. Colostrum is very concentrated so that newborns can get enough calories with very small quantities of colostrum. • Breast milk including colostrum contains exactly the nutrients a newborn needs <ul style="list-style-type: none"> - It is easily digested and efficiently used by the newborn's body - It protects newborn against infection. • Infants should be exclusively breastfed for the first 6 months of life. Giving anything else is unnecessary and harmful (including formula, Borbor) * <p>* Formula fed for newborn babies have 6 times more risk of dying (compared to exclusively breastfed babies). This is 2-3 times higher risk than tobacco is for adults.</p>
<p>Warmth</p> <p>Explain to mother that keeping the newborn warm is important to remain healthy:</p> <ul style="list-style-type: none"> • Newborns should be kept skin-to-skin with mother. Cover both with a soft dry cloth; cover the head with a hat for the first few days after birth
<p>Cord Care</p> <ul style="list-style-type: none"> • never put or apply anything on the cord stump
<p>Harmful Practices</p> <ul style="list-style-type: none"> • Roasting can be dangerous to the mother and newborn • Alcohol (traditional medicine) is not recommended post-partum • Injections to warm or give the mother energy should not be given • Ice or stones should not be placed on the abdomen of the mother post-partum
<p>Hygiene</p> <ul style="list-style-type: none"> • Wash hands regularly • Maintain personal hygiene (mother)

Danger Sign

Advise to take newborn to the health facility immediately, day or night, without delay, if there one of the following danger signs appears:

- Poor breastfeeding
- Baby has no movement even after stimulated
- Fever
- Cold body
- Fast breathing
- Difficult breathing
- Convulsions
- Bleeding from cord stump
- Redness, swelling and pus with bad smell around the umbilical cord
- Any sign of bleeding (including bleeding stool).

1-4-5 Family Planning

The woman should be counseled during the third trimester of pregnancy on the importance of family planning, including suitable methods for breastfeeding and non-breast-feeding women. Therefore, service provider should: explain that exclusive breastfeeding can prevent pregnancy. In case women does not exclusive breastfeed and have sex, she can become pregnant again very fast during four weeks after delivery. Thus, women should think about the family planning method to be used, ask about the plan related to the number of children she wishes to have, consult about the family planning method, and make an agreement before labor and delivery if she choose to do Salpingostomy.

Family planning and when to start:

Family planning Method	When to start
LAM	Can start immediately until 6 months after delivery. This method is effective unless the three conditions below are met: <ol style="list-style-type: none">1. Mother have not yet had menstruation period since after delivery2. Baby is below 6-month-old.3. Exclusive breastfeeding mother (only breastfeed all day and night at least 8 times per day. No other food provided).

Calendar	<p>Women has to take note her first day of menstruation period on the calendar. Non fertile sex is from day 1 to day 9 (including day 1 and day 9) and from day 20 to day 28 of her period cycle. Then, they have to refrain from have sexual intercourse for the period of 10 days, from day 10 to day 19 of the period cycle.</p> <p>This method is effective unless the three conditions below are met:</p> <ol style="list-style-type: none"> 1. Women has regular period cycle of 28 days 2. Women has known the fertile date of each month 3. Refrain from having sexual intercourse. If not, the partner has to use condom.
POP	<ul style="list-style-type: none"> • Non breastfeeding mother: <ul style="list-style-type: none"> - Can use this medicine at any time after delivery less than 4 weeks - After four weeks of delivery, and women who have not had menstrual period can use it immediately (make sure she is not pregnant) and must use condom for the first 7 days when having sexual intercourse. • Breastfeeding mother: <ul style="list-style-type: none"> - Start within 6 weeks after birth to 6 months, and make sure that the woman is not pregnant, and encourage women to continue breastfeeding baby.
COC	<ul style="list-style-type: none"> • Exclusive breastfeeding woman (start at 6 months after delivery): start using it when baby reach 6 months,

	<p>and make sure that the woman is not pregnant. (this medicine can reduce breast milk production), if having sexual intercourse, use condom for the first 7 days.</p> <ul style="list-style-type: none"> • Non breastfeeding mother (less than 4 weeks after delivery): can be used during day 21 to 28 after delivery. In case of over 28 days of delivery, the medicine still can be provided, but make sure that the woman is not pregnant and use condom for the first 7 days when having sexual intercourse.
Injection	<ul style="list-style-type: none"> • Non breastfeeding woman: <ul style="list-style-type: none"> - Can be injected at any time after delivery less than 4 weeks - After four weeks of delivery, and women who have not had menstrual period and is not pregnant can be injected immediately, and must use condom for the first 7 days when having sexual intercourse. • Breastfeeding mother: start within 6 weeks after birth, and make sure that the woman is not pregnant.
Implanon NXT	<ul style="list-style-type: none"> • Non breastfeeding woman: the implant can be inserted on day 21 to day 28 after delivery. If the implant is being inserted after day 28, please make sure that the woman is not pregnant, and use condom for the first 7 days when having sexual intercourse.
Male condom	Start immediately after delivery when having sex
IUD	<ul style="list-style-type: none"> • Can be use within 48 days after delivery (service providers should be

	<p>trained on IUD after delivery and comply with the national protocol for family planning). If over 48 hours, the IUD insertion should be done on week 4 onward</p> <ul style="list-style-type: none"> • C-section woman can use IUD insertion method after 6 months of delivery, and make sure that the woman is not pregnant.
Female sterilization	<ul style="list-style-type: none"> • Immediately or within 7 days after delivery • After 6 weeks and make sure that the woman is not pregnant.

Provisional translation

1-4-6 Advise on routine and follow-up visits

Encourage the woman to bring her partner or a family member to at least one antenatal visit.

Routine antenatal visits	Follow-up visits
<ul style="list-style-type: none">• 1st visit: The fetus is less than 12 weeks' old• 2nd visit: The fetus is from 20 to 24 weeks' old• 3rd visit: The fetus is from 30 to 32 weeks' old• 4th visit: The fetus is from 36 to 38 weeks' old• The woman may come for next visits as per the appointment with the midwife if she is not yet delivered• The woman shall return after week 41 if she is not yet delivered.	<ul style="list-style-type: none">• The woman who in the pregnancy for more than 32 weeks with hypertension shall return in 1 week• If severe anemia and <32 weeks, follow-up after 2 weeks• if severe anemia and >36 weeks, admit to hospital until delivery• HIV positive – follow-up 2 weeks after HIV testing• The women should come any time before date of appointment if she has problems or any danger signs.

Section 2: Labor and Delivery Care

2.1 Assessment and Care During Labor and Delivery

The person responsible for the initial reception of the women at the health facility (RH) must do a Quick Check (page 22), followed, if necessary, by rapid assessment and management (RAM) (page 23).

Assess the woman in labor or with ruptured membranes	
Ask, Check, Record	Look, Feel, Listen
<p>History of labor:</p> <ul style="list-style-type: none"> • When did contractions begin? • Are the contractions frequent? • How strong are contractions? • Have the waters broken? If yes, when? how much? what color? did it smell? • Vaginal bleeding? when? how much? • Is the baby moving? • Do you have any other concerns? <p>Check the mother's health record, or if no record:</p> <ul style="list-style-type: none"> • Ask when delivery is expected • Determine if term or preterm • Review the birth plan <p>If there were prior pregnancies, ask about:</p> <ul style="list-style-type: none"> • Number of pregnancies/deliveries/abortion? • Any prior caesarean sections, vacuum, or other complications such as postpartum hemorrhage, high blood pressure or fits? • Any prior third-degree tear? <p>Current pregnancy:</p> <ul style="list-style-type: none"> • Syphilis status, if not yet tested during pregnancy process of 	<ul style="list-style-type: none"> • Observe the woman's response to contractions: <ul style="list-style-type: none"> - Is she coping or is she distressed? - Is she pushing or grunting? • Check abdomen for: <ul style="list-style-type: none"> - Caesarean section scar - Horizontal ridge across lower abdomen (if present, empty bladder and observe again) • Feel abdomen for: <ul style="list-style-type: none"> - Contraction frequency, duration, any continuous contraction - Fetal lie (longitudinal or transverse) - Fetal presentation: (head, breech) - The engagement of fetus head - Level of fetus head descent - One or more than one fetus? - Fetal movement? • Listen to the fetal heart beat: <ul style="list-style-type: none"> - Count number of beats in 1 minute - If less than 110, or more than 160 beats per minute, turn woman on her left side and count again • check vital signs: measure pulse, blood pressure, temperature and respiratory rate • Check for anemia: measure hemoglobin or check for pallor at palmar and conjunctiva.

<p>management of syphilis as during antenatal care visit.</p> <ul style="list-style-type: none"> • Hemoglobin results • Blood group and blood clotting test • Obstetrical echography checkcheck • Tetanus immunization status • HIV status (note: if the woman is HIV positive, refer her to a hospital where ARV prophylaxis can be provided at onset of labor, as per national PMTCT guidelines) • Infant feeding plan • Medicines received. 	<ul style="list-style-type: none"> • Check for dehydration: look for sunken eyes, dry mouth, pinch the skin on forearm; does it go back quickly? Check urine for proteinuria, sugar and pH.
---	--

2-2 Decide stage of labor

Perform a vaginal examination and decide on the stage of labor, as follows:

Ask, Check, Record	Look, Listen, Feel
<ul style="list-style-type: none"> • Explain to the woman that you will do a vaginal examination and ask for her consent. 	<ul style="list-style-type: none"> • Check the conditions of the perineum: <ul style="list-style-type: none"> - Bulging perineum, is the veins also bulging? • look at the vulva for: <ul style="list-style-type: none"> - Any visible fetal parts - Vaginal bleeding - Leaking amniotic fluid; if yes, is it with blood, meconium stained, foul-smelling? - Warts, keloid tissue or scars that may interfere with delivery. • Must clean the vaginal area before performing the examination (at least 6 pieces of pads according the technical instruction) • DO NOT perform vaginal examination if bleeding now or at any time after 7 months pregnancy • DO NOT perform vaginal examination if having pre-rupture of membrane and no sign of labor • Otherwise, perform gentle vaginal examination (do not perform during a contraction) to: <ul style="list-style-type: none"> - Determine cervical dilatation in centimeters

	<ul style="list-style-type: none"> - Feel for presenting part: is it hard, round (head), smooth (breech)? If not, identify presenting part - Feel for membranes; are they ruptured? - Feel for cord; is it felt? Is it pulsating? If so, act immediately.
--	--

Management

Latent phase: the cervix is retracted, effaced and dilated slowly from 0-3cm; weak contractions and less than 2 or 2 times in 10 minutes and each time less than 20 seconds):

- Record in the front part of partograph.

Active phase: the cervix is completely effaced and dilated from 3cm and above, regular contractions. The contractions get stronger from 3 times in 10 minutes and each time from 20 to 40 seconds or more.

- Manage as first stage of labor (page 84)
- Record in the front part of partograph.

Imminent delivery: bulging thin perineum, vagina gaping and head visible, full cervical dilatation

- Manage as for second stage of labor (see p.94)
- Record on partograph at the back page.

2-3 Respond to Obstetrical Emergencies on Admission

Signs	Treat and Advise
<p>Obstructed labor</p> <ul style="list-style-type: none"> • Transverse lie • Continuous contractions (constant pain between contractions) • Sudden and severe abdominal pain • Horizontal ridge across lower abdomen, divide abdomen into parts (sign of imminent rupture of uterus. • Labor > 15 hours 	<p>Obstructed labor</p> <ul style="list-style-type: none"> • Insert IV (prepare for life saving), if in labor >15 hours, and sign of infections show up must: <ul style="list-style-type: none"> - First, give Ampicillin 2g IV or IM, then 1g every 8 hours with - Gentamicin 80mg IM every 12 hours. • When the temperature gets lower within 48 hours, continue to give 500mg, administer 3 times per day for 7 days of giving Antibiotic to complete the treatment. • If cannot perform IV antibiotic, perform IM instead.

	<ul style="list-style-type: none"> Decide and do appropriate intervention immediately.
<p>Uterine and fetal infection</p> <ul style="list-style-type: none"> Ruptured membranes and any of: <ul style="list-style-type: none"> Fever >38°C Foul smelling vaginal discharge 	<p>Uterine and fetal infection</p> <ul style="list-style-type: none"> Give antibiotics together until the woman is free from fever for 48 hours. <ul style="list-style-type: none"> First, give Ampicillin 2g IM/IV, then 1g every 8 hours with Gentamicin 80mg IM every 12 hours with Metronidazole 500mg IV every 8 hours. If the labor nearly reaches the 2nd stage, perform delivery If labour is in latent phase, decide on appropriate intervention.
<p>Risk of uterine and fetal infection:</p> <ul style="list-style-type: none"> Rupture of membranes at <37 weeks of pregnancy (26-36 weeks) 	<p>Risk of uterine and fetal infection:</p> <ul style="list-style-type: none"> Give antibiotics together until the woman is free from fever for 48 hours. <ul style="list-style-type: none"> First, give Ampicillin 2g IM/IV, then 1g every 8 hours with Gentamicin 80mg IM every 12 hours with Metronidazole 500mg IV every 8 hours. Dexamethasone 12mg IM. The next 12 hours, Dexamethasone 12mg IM again. If the labor nearly reaches the 2nd stage, perform delivery Discontinue antibiotics for mother after delivery if no signs of infection. Plan to treat newborn If labour is in latent phase, make decision and provide appropriate intervention.
<p>Severe pre-eclampsia:</p>	<p>Severe pre-eclampsia:</p> <ul style="list-style-type: none"> Assess further and manage as on p.43

<ul style="list-style-type: none"> • Diastolic blood pressure >110 mmHg with the proteinuria \geq +++ or • Diastolic blood pressure > 90mmHg with • Proteinuria(++) along with some signs 	
<p>Severe anemia:</p> <ul style="list-style-type: none"> • palmar and /or conjunctival pallor and/or hemoglobin <7g/dl 	<p>Severe anemia:</p> <ul style="list-style-type: none"> • If in labor, - Monitor intensively - Minimize blood loss. • Refer if necessary

Provisional translation

2-4 Give supportive care throughout labor

Provide a supportive, encouraging atmosphere for the woman throughout labor, as follows:

<p>Communication</p> <ul style="list-style-type: none">• Explain all procedures, seek permission, and discuss findings with the woman• Reassure their partner or relatives during labor• Keep her informed about the progress of labor• Praise her, encourage and reassure her that things are going well• Ensure and respect privacy during examinations and discussions.
<p>Cleanliness</p> <ul style="list-style-type: none">• Encourage the woman to urinate, bathe or shower or wash herself and genitals at the onset of labor• Wash the vulva and perineal area before each examination• Wash hands with soap and water before and after each examination• Use clean gloves for each vaginal examination• Ensure cleanliness of labor and birthing areas• Clean up any spills immediately.
<p>Mobility</p> <ul style="list-style-type: none">• Encourage the woman to walk around freely during labor• Support the woman's choice of position for each stage of labor.
<p>Urination</p> <ul style="list-style-type: none">• Encourage the woman to empty her bladder frequently; remind her every 2 hours
<p>Eating and drinking</p> <ul style="list-style-type: none">• Encourage the woman to eat and drink as she wishes throughout labor• Nutritious liquid drinks are important, even in late labor
<p>Breathing technique</p> <ul style="list-style-type: none">• Teach the woman normal breathing• Encourage her to breath out more slowly and to relax with each breath• To prevent pushing at the end of first stage, teach her to pant, to take a short breath in with an open mouth followed by a long breath out• During delivery of the head, ask her not to push but to breathe steadily.

Pain and discomfort

- Suggest change of position
- Encourage mobility
- Encourage birth companion to massage the woman's back if she finds this helpful, and hold the woman's hand and sponge her face between contractions
- Encourage breathing technique
- Encourage warm bath or shower, if available.

Birth companion

- Encourage support from the chosen birth companion throughout labor
- Describe to birth companion what he or she should do:
 - Always be with the woman
 - Encourage her
 - Help her to breathe and relax
 - Rub her back, wipe her a wet cloth
 - Give support using local practices that do not disturb labor or delivery
 - Encourage woman to move around freely as she wishes and to adopt the position of her choice
 - Encourage her to drink and eat as she wishes
 - Assist her to the toilet when needed
- Ask the birth companion to call for the midwives if
 - The woman is bearing down with contractions
 - There is vaginal bleeding
 - She is suddenly in much more pain
 - She loses consciousness or has fits
 - Other concerns
- Tell the birth companion
 - NOT to encourage the woman to push
 - NOT to give the woman advice other than that outlined by the health care provider
 - NOT to keep the woman in bed if she wants to move around.

2-5 First stage of labor**2-5-1 Latent phase: (8 hours at most)**

The cervix is retracted, effaced and dilated slowly from 0-3 cm. The uterine contractions are weak and ≤ 2 times in 10 minutes and each time is less than 20 second) she should be monitored, as follows:

Monitor every hour	Monitor every 4 hours
<ul style="list-style-type: none"> • For emergency signs 	<ul style="list-style-type: none"> • Cervical dilatation – unless otherwise indicated, DO NOT do vaginal

<ul style="list-style-type: none"> • Frequency of the contraction in 10 minutes and duration of each contraction • Listen to fetal heart rate every 30 minutes • Mood and behavior (distressed, anxious) • Record on partograph • Give supportive care. 	<p>examination more frequently than every 4 hours</p> <ul style="list-style-type: none"> • Begin plotting partograph • Temperature • Pulse • Measure blood pressure every 2 hours or more frequently if necessary.
Assess Progress in Labor	Treat and Advise
<p>After 8 hours, if:</p> <ul style="list-style-type: none"> • Contractions stronger and more frequent but no progress in cervical dilation with or without membranes ruptured 	<ul style="list-style-type: none"> • See management of selected labor and delivery problems in Section 2-8
<p>After 8 hours, if:</p> <ul style="list-style-type: none"> • No increase in contractions and no a show - Membranes are not ruptured, and - No progress in labor 	<ul style="list-style-type: none"> • Discharge the woman and advise her to return if - Pain/discomfort increases and become unbearable - Vaginal bleeding - Membranes rupture
<ul style="list-style-type: none"> • Cervical dilatation 3 cm or greater 	<ul style="list-style-type: none"> • continue plotting on partograph and manage the woman as active phase

2-5-2 Active phase (7 hours at most)

When the cervix is fully effaced and dilated from 3 cm or more and the uterine contraction is regular, continue to record the progress of labor on the partograph.

Record of delivery (first stage)

Patient information: fill out name, number of pregnancies, number of deliveries, date and time of admission, and time of ruptured membranes, date and time of recording the partograph and the name of the person filling in the partograph.

Fetal heart rate: record every half hour. Normal fetal heart rate: 110-160 bpm. Must listen to the fetal heart rate immediately after the contraction, listen to it for one minute and check the mother's pulse to make sure that it is really the fetal heartbeat.

Amniotic fluid: record the color of amniotic fluid at every vaginal examination, there are 5 different types,

I: Membranes intact

C: Membranes ruptured, clear fluid

- M: Membranes ruptured meconium-stained fluid
- A: Absence of amniotic fluid
- B: Blood-stained fluid.

Molding: it is very important to notice a change in the molding in order to know whether the head of the fetus can pass through the pelvis. If fetus' head is still high, not engaged in the pelvis and the overlapping has increased, consider disproportion of the fetus' head and the mother's pelvis.

Record the molding as following:

- 0 = Can feel the suture, not yet opposed
- + = Sutures opposed
- ++ = Sutures overlapping a bit
- +++ = Sutures strongly overlapping.

Need to check molding in every vaginal examination and record under amniotic fluid.

Note: If breech presentation, no need to fill this part.

Cervical dilatation: marking with a cross (X) represents the cervical dilatation. The cross should be put on the left of the graphic inside the box from 0-10 when performing vaginal examination. Vaginal examination should be conducted every four hours in latent phase. In the active phase it can be conducted more often according to the status of the woman. For multiple pregnancy woman, vaginal examination may be performed more often and done together with checking for descent of fetus.

Alert line: starts at 3 cm of cervical dilatation to the point of expected full dilatation (10 cm) at the rate of 1 cm per hour or faster. If the cross on the partograph passes to the right of the alert line, reassess the woman and proceed as advised below.

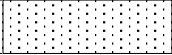


Action line: parallel and 4 hours to the right of the alert line.

Descent: the descent of the fetus's head is usually assessed by abdominal palpation before performing vaginal examination. The assessment can be done by feeling the abdomen and compare the fetus head against the pubis which is divided into five parts, recorded as a (O) at every abdominal examination.

Hours: refers to the time elapsed since the onset of the latent phase of labor.

Time: record actual time.

Contractions: chart every 30 minutes in the latent and active phase; count the number of contractions in a 10-minute time period, and their duration in seconds.

• Less than 20 seconds	
• Between 20 and 40	
• More than 40 seconds	

Oxytocin record the amount of oxytocin per volume IV fluids in drops per minute when used. The use of Oxytocin in the IV fluid is regulated as per the following:

- Dextrose fluid 5% at 5 drops per minute in advance, then mix with Oxytocin 5IU
- Monitor the uterine contraction by increasing 5 drops every 30 seconds until the uterine contraction reaches 3 or 4 times in 10 minutes and each time is 40-50 seconds. This rate can be maintained in the 2nd and 3rd stages of the labor
- Discontinue IV fluid contained Oxytocin if there is a sign of over contraction of the uterus (both frequency and duration) and when there is a fetal distress (page 113)
- The infusion of oxytocin in the IV fluid to help the uterine contraction shall be performed by the doctor/physician and at a place where cesarean section is available.

Drugs and IV fluids: record any drugs and IV fluid that were given.

Pulse: record every 2 hours and mark with a dot (•) and connect from one point to another in every examination.

Blood pressure: record every 2 hours and mark with arrows (↕) (if necessary, measure more frequently and record).

Temperature: record every 2 hours and record the value.

Urine: record protein (to confirm the sign of pre-eclampsia); glucose level (to confirm the sign of diabetes); and acetone (to confirm the sign of dehydration) in urine once the woman is arrived and continue to record the amount of urine every time she urinates.

Recording at the back of the partograph:

Record of Delivery (second stage)

- In box: record the time, fetal heart rate, mother's pulse and blood pressure every 5 minutes. In remark column should record time of fully dilation, head descent, contractions, color of amniotic fluid and other problems.
- Time of delivery: record exact time and date of delivery

- Other problems: record any problem occurred during the delivery i.e., delayed push, etc.
- Types of delivery: Check (✓) in the box of each type of delivery-normal delivery, delivery by vacuum extraction, or C-section.
- Birth attendant: record name and title of person who assist delivery
- Check (✓) the box of the completed activities:
 - dry the newborn immediately
 - The newborn is breathing during the golden minute (or using ventilation)
 - Keep skin to skin contact between the newborn and the mother until the newborn has finished breastfeeding
 - Delay the clamp of cord until the pulse of the cord stopped (from 1-3 minutes).

- Apgar score: from 0-2 points

Record Apgar score in 1st, 5th and 10th minute (normal Apgar score is 7-10) on the color, fetal heart rate, reflexes, muscle strength, breathing, and total the score at the bottom, and also record comments regarding the conditions of the fetus.

- Check (✓) the box of male or female and write the fetus's age in weeks
- Any sign of infection: Check (✓) the box with yes or no; the mother's temperature is > 35.5°C; prolonged membrane rupture > 18 hours; amniotic fluid contains pus/foul smell.

Delivery of placenta (third stage)

- Infuse oxytocin at timeminute..... level: record the time, minutes and level of infusion at the first minute of delivery
- Delivery of placenta: Check (✓) the box below when performing the delivery of placenta by control cord traction, by massaging the uterine, or naturally or manual removal of placenta.
- Time of delivery of placenta: record the time and minutes
- Check (✓) on the mother's side (Duncan): if the placenta is delivered at the mother's side first (uterus inversion)
- Check (✓) on the fetus's side (Beaudelauque): if the umbilical cord side came out first.
- Evacuation of the uterus:
 - Check (✓) the Yes box if performing the evacuate of placenta fragments remaining inside the uterus manually or using vacuum syringe, etc.
 - Check (✓) the No box if there is no evacuation of uterus
- Perineum:
 - Check (✓) the No box if there is no tear
 - Check (✓) the Yes box if there is a tear and mark its level.
 - Check (✓) the Yes box if the episiotomy is performed.

- Placenta weight: After delivery of placenta, weight the placenta and record it in gram i.e., 350g
- The Quantity of bleeding
 - Check (✓) the Heavy box (>500ml) if there is a heavy bleeding over 500ml.
 - Check (✓) the Moderate box (300-500ml) if there is a bleeding from 300-500ml.
 - Check (✓) the Light box (<300ml) if there is a bleeding less than 300ml
- Uterine contraction: Check (✓) the Good box if the uterus has good contraction or in Not Good box if the uterus has no good contraction.
Monitor two hours after the delivery (4th stage)
- The mother: check the mother every 15 minutes during the first hour and every 30 minutes at the second hour
 - Record time, pulse, blood pressure and temperature
 - Check (✓) if uterine massage is performed and bleeding is checked.
 Record other comments, if any
- Before referring to the postpartum care room: Examine the uterus again to look for uterine contraction and bleeding
 - Uterine contraction: Check (✓) the Good box if the uterus has good contraction or in Not Good box if the uterus has no good contraction.
 - The Quantity of bleeding: Check (✓) in the Heavy box if there are 2 pads soaked per hour, or Check (✓) in the Light box if there is a light bleeding not soak 1 pad per hour
- The newborn: check the newborn every 15 minutes for the first hour and every 30 minutes for the second hour
 - Record respiratory rate, time, heart rate, temperature
 - Check (✓) if performing physical examination
- Breastfeeding:
 - Check (✓) the First Hour box if the newborn receives breastfeeding during the first hour
 - or check (✓) the Two Hour After Delivery box if the newborn receives breastfeeding during the two hours of delivery
- Record newborn weight in gram, length, newborn's head circumference, chest circumference, using measuring tape and record them in centimeter
- Vitamin K1 1mg IM: Record the date and time of injection
- Put eyedrops: Record the date and time.

Assess progress in labor	Treat and advise
<ul style="list-style-type: none"> • Partograph passes to the right of the ALERT LINE. 	<ul style="list-style-type: none"> • Reassess the woman (history, status), inform the doctor in charge of making the decision about the

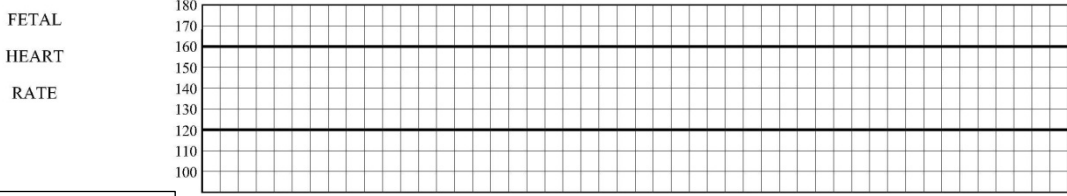
	<p>intervention and alert emergency transport if needed</p> <ul style="list-style-type: none"> • Re-confirm diagnosis of active labor • Encourage woman to empty bladder • Ensure adequate hydration but omit solid foods • Encourage upright position and walking if woman wishes • Consider artificial rupture of membranes • Consider oxytocin infusion for enhancement of labor • Monitor closely – reassess in 2 hours and if no progress – DO NOT wait until partograph passes to the right of the ACTION LINE, make decision and do appropriate intervention.
<ul style="list-style-type: none"> • If membranes do not rupture, rupture when the cervix dilation is nearly complete. Method of membrane rupture (see p.246) • Cervix dilated 10 cm or bulging perineum. 	<ul style="list-style-type: none"> • Manage as in second stage of labor.

Record of Delivery (first stage)

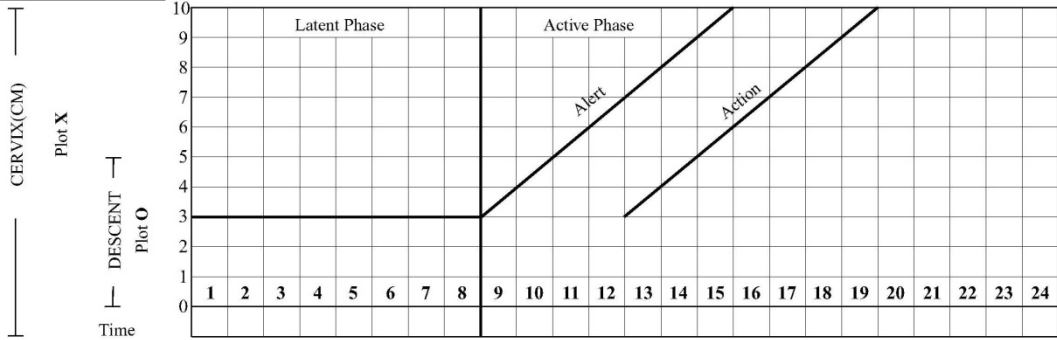
Name (Last, First) # of Pregnancy # of Delivery Registration No.....

Date Admission..... Time of Admission Membrane not ruptured ruptured time: Date.....

Date of filling in the partograph: Time:..... Name of person filling in the partograph.....



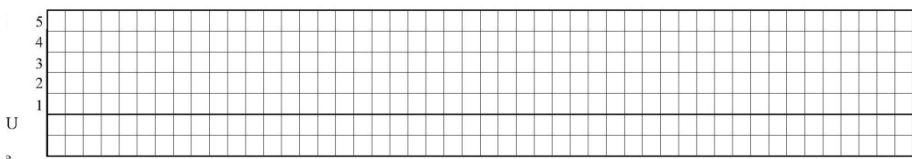
AMNIOTIC FLUID	
Suture	



Uterine contraction in 10 minutes

■ > 40second

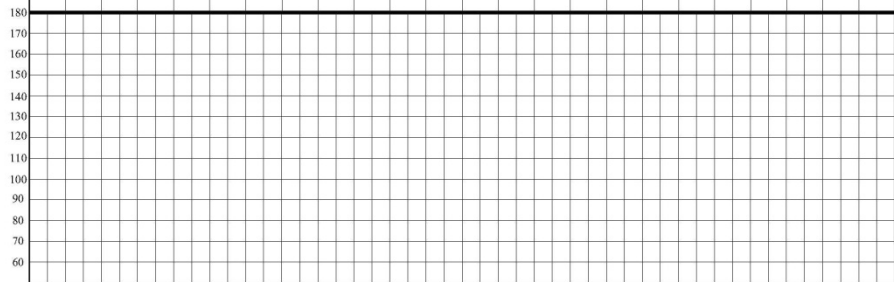
▨ 20-40second
▩ 40mn-40second
□ < 40mn



DRUGS & IV FLUIDS

--	--

• PULSE
↕ & BLOOD
PRESSURE



AXILLA TEMPERATURE °C

--	--

URINE — PROT
ACET
VOL

--	--

Record of Delivery

Time	Fetal Heart Rate	Pulse	Blood Pressure	Note

Time of DeliveryDate.....Month Year

Other Problems During Delivery

Type of delivery: normal, vacuum extraction, C-section, Delivered by:

- dry the baby immediately
- The newborn is breathing during the golden minute (using ventilation)
- Keep skin to skin contact between the newborn and the mother until finish breastfeeding.
- Delay the clamp of cord until the pulse of the cord stopped (from 1-3 minutes).

Baby's sex: male female Gestation:weeks

Any sign of infection:

The mother's temperature is >38.5°C Yes No

Prolonged membrane rupture > 18 hours Yes No

amniotic fluid contains pus/foul smell Yes No

Apgar Score				
Factor	1mn	5mn	10mn	Other comments
Color				
Baby's heart rate				
Reflexes				
Tone				
Breathing				
Total score				

Delivery of Placenta (3rd stage)

Inject Oxytocin at timemn..... level.....

- Delivery of placenta: controlled cord traction (Oxytocin IM)
- stretch the placenta by examination
 - Uterine massage
 - natural placenta delivery
 - manual removal of placenta

Time of placenta delivery:

Uterine contraction: Good Not good

The newborn's sideside (Beaudelauque) the mother's sideside (Duncan)

Evacuation of uterus: Yes No

Perineum: No tear
 Tear - level 1 level 2 level 3 level 4
 Episiotomy

Weight of placenta: grams

Quantity of bleeding: Heavy (>500ml)
 Moderate (300-500ml)
 Light (<300ml)

Monitoring 2 hours after delivery (4th stage)

Mother					
	First hour every 15mn		2 nd hour Every 30mn*		Comments
Time					
Pulse/mn					
Blood pressure/mmHg					
Temperature (°C)					
Uterine massage					
Check for bleeding					

Newborn					
	First hour every 15mn		2 nd hour Every 30mn*		Comments
Time					
Respiratory rate/mn					
Heart rate/mn					
Temperature (°C)					
Physical examination					

*Check (✓) if physical examination performed.

*Check (✓) if uterine massage and checking for bleeding is performed.

Before referring to postpartum care room:

Uterine contraction: Good Not good

Quantity of bleeding: Heavy Light

Breastfeeding: during the first hour two hours after delivery

Weight:grams, Length:cm

Head circumference:cm, Chest circumferencecm

Vitamin K1 1mg IM: Date of injection:, time.....

Put eye drops: Date:, time.....

Provisional translation

2-6 Second stage of labor-deliver baby and give immediate newborn care

When the cervix is dilated 10 cm or perineum is bulging with a visible head, the woman should be monitored and managed, as follows.

<p>Monitor Every 5 Minutes:</p> <ul style="list-style-type: none"> • For emergency signs (see p.80) • Frequency, intensity and duration of contractions • Fetal heart rate • Perineum thin and bulging • Visible descent of fetal head • Mood and behavior (distressed, anxious) • Record findings on partograph • Give supportive care • DO not leave the woman alone • Tell the woman to push when she feels the contraction. 	
Deliver the baby	Treat and advise
<p>Preparation for every delivery:</p> <ul style="list-style-type: none"> • There must be a clock (with second hand) in the delivery room • Ensure room temperature is above 25°C. Close all doors, windows and turn off fan to ensure that there is no airflow in the room. If there is an air-conditioner in the room, one must ensure that the room temperature is above 25 °C • Ensure that all protective, delivery equipment and supplies are prepared in an orderly manner for easy access: 3 pairs of sterile gloves*, 5 pairs of clean gloves, gauze, betadine, 4 cloths, oxytocin, 1 cord clamp or tie, suction bulb, needle and syringe, Artery forceps, 1 metal urinary catheters, 3 pairs of scissors (2 for cutting the umbilical cord, 1 for cutting the vagina), 2 umbilical cord clamps, 2 clamps for repair (1 with teeth, and 1 without teeth), 1 needle clamp 	

<p>and 1 cup. One cloth should be placed on the mother's bare abdomen to dry the baby and remove the wet cloth to allow for skin-to-skin contact, then cover another piece of cloth on the baby and the mother and wear a hat for the baby</p> <ul style="list-style-type: none"> • Ensure newborn resuscitation area and equipment and 2 cloths, are available and ready to use to save and care for the baby. If there is a radiant warmer, it should be warming up (for resuscitation). One cloth should be placed on a firm surface of the resuscitation area with ventilation bag and mask, stethoscope, and clock/timer in easy view. The second cloth should be folded into small pieces and placed at the end of the first cloth to immediately place on the baby before pumping air into the baby. All equipment should be tested before delivery. <p>* 2 pairs of gloves should be worn when delivering the baby, with one pair removed prior to handling the cord.</p> <p>** Where clamps are not available, use sterile ties.</p>	
<ul style="list-style-type: none"> • Ensure that the bladder is empty • assist the woman into a comfortable position of her choice i.e. sitting upright, squatting, laying on the side, allow birth companion to be present with the woman and 	<ul style="list-style-type: none"> • If unable to pass urine and bladder is full, catheterize the bladder • DO NOT let the woman lie flat • If she is distressed, encourage pain and discomfort relief (see p.83)

<p>offer emotional and physical support.</p>	
<ul style="list-style-type: none"> • Allow her to push as she wishes with contractions. 	<p>DO NOT urge the woman to push:</p> <ul style="list-style-type: none"> • If after 60 minutes (for first gestation) or 30 minutes (for more than second gestation) of spontaneous expulsive efforts, the perineum does not begin to thin and stretch with contractions, do a vaginal examination to confirm full dilatation of cervix • If cervix is not fully dilated, await second stage • Place the woman on her left side and discourage pushing • Encourage breathing technique
<ul style="list-style-type: none"> • Wait until head visible and perineum distending 	<ul style="list-style-type: none"> • If second stage lasts up to 1 hour for the primipara and 30 minutes for multipara without visible steady descent of the head, prepare for vacuum extraction • If obvious problem preventing progress (warts, keloid tissue, previous third degree tear) do a generous episiotomy • If breech or other malpresentation, (see p.110)
<p>Ensure controlled delivery of the head:</p> <ul style="list-style-type: none"> • Keep one hand gently on the head as it advances with contractions • Support perineum with other hand and cover anus with pad • Leave the perineum visible • Ask the woman to breathe steadily and not to push during delivery of the head • Encourage breathing with mouth open 	<ul style="list-style-type: none"> • if potentially damaging expulsive efforts, exert more pressure on perineum • Do not perform episiotomy for every normal delivery unless there is a problem that cause the obstruction to the delivery.
<ul style="list-style-type: none"> • Feel gently around the baby's neck for the cord <p>Note: when the head is delivered DO NOT use suction or wipe the newborn's face with gauze</p>	<ul style="list-style-type: none"> • If cord is around newborn's neck and loose, deliver the baby through the loop of the cord or slip the cord over the baby's head

	<ul style="list-style-type: none"> • If cord is tight, clamp the cord with two artery forceps placed approximately 3 cm apart and cut cord between the two clamps.
<ul style="list-style-type: none"> • Await spontaneous rotation of shoulders and deliver (within 1-2 minutes) • Apply gentle downward pressure to deliver top shoulder first • Then lift baby up, towards the mother's abdomen to deliver lower shoulder • Call out time of delivery (record precisely to the second) • Upon delivery, place baby directly onto a dry towel on the mother's bare abdomen to eventually allow for skin-to-skin contact when the wet towel is removed • Start drying the newborn immediately (within 5 seconds after birth) by wiping the eyes, face, head, front, back, arms and legs thoroughly drying should take at least 30 seconds • Assess baby's breathing while drying • Remove the wet cloth so that the baby is in direct skin to skin contact with the mother's bare abdomen. Cover but do not wrap baby with another clean dry cloth. This keeps the skin of baby's abdomen directly in contact with the skin of mother's abdomen. Cover newborn's head with a hat • Keep newborn warm, monitor breathing, keep in direct skin-to-skin contact with the mother until the baby get fed with breastmilk for the first time (at least 60 minutes after birth) 	<ul style="list-style-type: none"> • If delay in delivery of shoulders: <ul style="list-style-type: none"> - Call for help - Manage as in stuck shoulder dystocia (see p. 116) <p>Note: All babies, except macerated stillbirths should receive routine care and, if needed, resuscitation.</p> <ol style="list-style-type: none"> 1- If baby is crying, then follow routine care. 2- If baby is not crying, assess the breathing. If the breathing is good, follow routine care. 3- If newborn is gasping or not breathing after a thorough drying, check if airway blocked. Only when block is present should the suction be required. 4- If newborn is still gasping or not breathing, call for help, clamp and cut cord quickly, briefly stimulate by rubbing with cloth while transferring to newborn resuscitation area, and start bag and mask ventilation within golden minute (see p. 94). <p>Note: Never use suction unless the airway obstruction is observed.</p>

<ul style="list-style-type: none"> • Palpate mother's abdomen to exclude second baby • Give 10 IU oxytocin IM to mother during the first minute. 	<ul style="list-style-type: none"> • If there is a second baby, DO NOT give oxytocin now, • CALL FOR HELP • Deliver second baby
<ul style="list-style-type: none"> • Take off the first layer of gloves, and check cord pulsation after the cord stops pulsating (usually 1-3 minutes), clamp (or tie) the cord at about 2 cm and 5 cm from umbilical base • Cut the cord between the ties/clamps while the newborn is on the mother's abdomen. <p>Note: This avoids the need for secondary trimming.</p>	<ul style="list-style-type: none"> • DO NOT milk the cord toward the baby • DO NOT apply anything to the cord • DO NOT bandage or bind the cord.
<ul style="list-style-type: none"> • Leave baby on mother's chest in direct skin-to-skin contact for at least 60 minutes after birth by positioning the baby's head to face the mother in a semi sitting position or resting on the side • Inform the mother about feeding cues (drooling, opening mouth, tonguing, licking, head turning to the breast and sucking of fingers) typically between 20-60 minutes of birth. When feeding cues occur, encourage mother to start feeding the baby • Support newborn to be well-positioned and well-attached • When the baby is able to receive the breastfeeding, the mother should be advised to: <ul style="list-style-type: none"> – Make sure the baby is not bent or twisted – Make sure the baby is in front of the breast by placing the its 	<ul style="list-style-type: none"> • DO NOT separate the baby and mother unless either needs emergency care • DO NOT force the breast into the newborn's mouth or the mouth onto the breast or attempt breastfeeding until feeding cues occur (typically between 20 and 60 minutes) • DO NOT put ice on the mother's abdomen • DO NOT bathe the baby with anything even if the baby looks dirty. The baby can only be cleaned 24 hours after birth. <p><i>Note:</i> Breastfeeding is the learning attitudes of both mother and the baby. The baby will try to suck first in order to successfully suck the breast. The health worker should avoid giving any intervention during this time (i.e., position the baby's head for breastfeeding).</p>

<p>nose touches the breast and the chin also touches the breast</p> <ul style="list-style-type: none"> – Hold the baby closely, not only holding the neck and shoulder of the baby – Wait until the baby’s mouth is widely opened – Turn the baby to the breast by placing its lower lip on the nipples – Check for the sign of well attached and suckling effectively, includes: <ul style="list-style-type: none"> ○ mouth wide opens ○ lower lip positioned outward ○ baby’s chin touching the breast. – The suckling is slow and for a long period and there is a time for a break – Delivery of placenta (page 103). 	
---	--

Newborn resuscitation and post resuscitation care

A. Newborn resuscitation

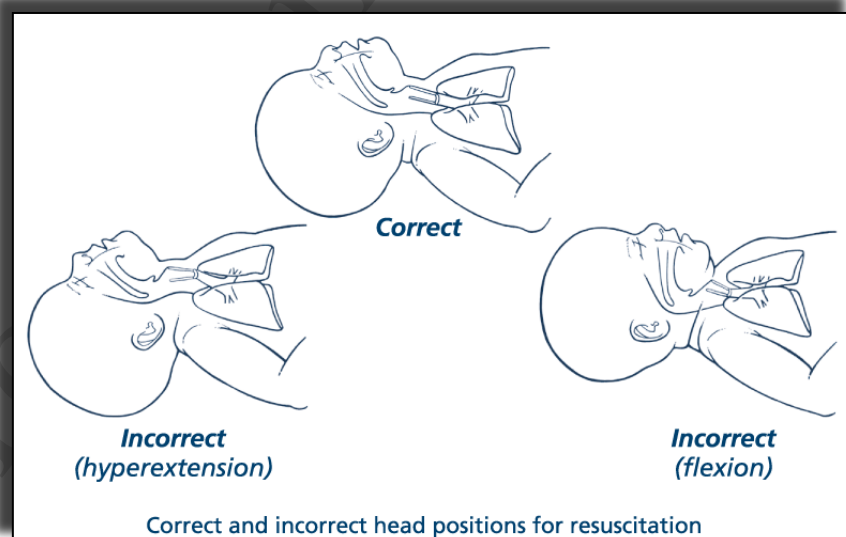
Prior to all deliveries, ensure newborn resuscitation area and equipment are available and ready to use. If there is a radiant warmer, it should be warming up (whether or not it is needed for resuscitating the baby). One cloth should be placed on a firm surface of the resuscitation area with suction bulb, ventilation bag and mask, stethoscope, hat and cloth to cover the baby and clock/timer in easy reach. All equipment should be tested before delivery.

Notes: Ventilation should be done with room air by using a bag and mask. 100% oxygen during newborn resuscitation has been shown to be dangerous and should not be used. A series of swift steps must be carried out on all babies immediately after birth, to ensure that babies requiring assisted ventilation receive this within one minute (golden minute) after birth.

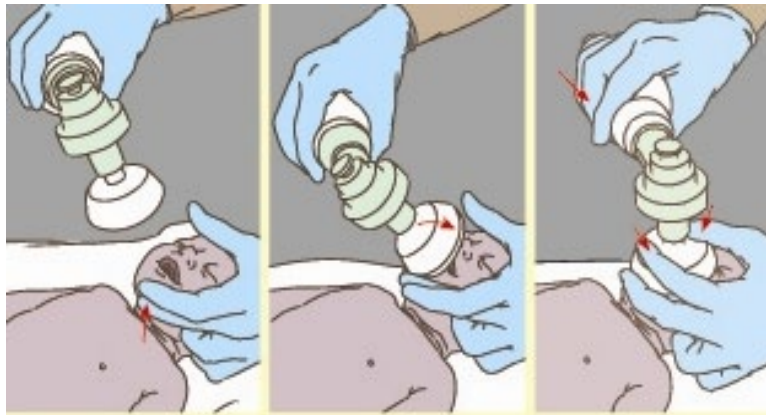
Actions:

- Start drying the newborn immediately (within 5 seconds after birth) and thoroughly by wiping the eyes, face, head, forehead, body, arms and legs. Thorough drying takes at least 30 seconds
- Assess baby's breathing while drying
- Remove wet cloth and keep baby in skin to skin, cover body and head with dry cloth
- If newborn is gasping or not breathing after a thorough drying, check if airway is blocked
- Only if block is present, introduce the suction tube or bulb into the baby's mouth, then each nostril, suction while withdrawing the tube
- If the amniotic fluid contains meconium; suction of sputum from mouth and nostril?
- If newborn is not breathing, call for help, clamp and cut cord quickly, briefly stimulate by rubbing with cloth while transferring to newborn resuscitation area stimulate by rubbing within cloth. Tell the mother that you are trying to help her newborn breathe
- Cover newborn with a dry cloth and with chest exposed and head covered with a hat
- Position the head so that the neck is slightly extended and chin lifted up and forward to open up the upper airway (sometimes newborns will start breathing following this action)

Note: Do not overextend the neck or use rolls under the neck or shoulders as this will narrow the airway.



- If the baby is still not breathing, start bag and mask ventilation (within golden minute):
- Place the mask over the baby's chin, mouth and nose. Do not cover eyes with the mask.



Positioning the Mask and Checking the Seal

- Term and pre-term newborn (more than 2 weeks old) shall be ventilated by positive pressure. The ventilation shall start from using the atmosphere air
- Form a firm seal between the mask and the face by thumb, first finger and the second finger holding the chin upward and 3th and 4th finger not touching the baby throat or the mask as shown in the picture. (use mask size 1 for normal birth weight newborn and size 0 for low-birth-weight newborn)
- Squeeze the bag and observe the rise of the chest; if the chest does not rise when the bag is squeezed at any time, take steps to improve ventilation:
 - Reposition head and the neck neither overextended nor flexed
 - Ensure chin lifted up and forward with mouth slightly open
 - Check seal between face and mask to ensure there are no air leaks from around the mask
 - Squeeze the bag harder with whole hand
- Squeeze the bag 30 – 50 times a minute (aim for 40 times a minute). Squeeze-two-three, squeeze-two-three
- Some babies may improve quickly and begin breathing well after brief bag and mask ventilation

Assess breathing while ventilating with bag and mask

- At any time if baby starts breathing or crying, stop ventilation and observe to ensure that the baby continues to breathe well, listen for any grunting and observe for any chest in-drawing
- If baby gasping or not breathing well, continue bag and mask ventilation for one minute, then assess heart rate by feeling for cord pulsations or by using a stethoscope just long enough to assess beats per minute

- If heart rate is <100 bpm, it means that it is slow, so continue ventilation at 30-50 breaths per minute
- Reassess the heart rate at 3, 5 and 10 minutes. If heart rate remains <100 bpm and the baby is not breathing well continue bag and mask ventilation and consider transfer for specialized care. During transfer, baby must receive continued bag and mask ventilation, oxygen if necessary, thermal care and be accompanied by a health worker and caregiver.
- If heart rate is >100 bpm this is normal but continue bag and mask ventilation until the baby is breathing well Observe for breathing effort and improvement in color and stop ventilation when the baby is breathing, pink and the heart rate stays > 100 beats per minute
- In babies who have a normal heart rate (>100 bpm), improved color but are not breathing, continue bag and mask ventilation.
- Stop bag and mask ventilation when baby breathing well
- If after 10 minutes of ventilation with good chest movement the baby is not breathing and has **no** heart rate: Stop bag and mask ventilating. Explain to the mother that the baby is dead and give emotional support. If the baby's heart rate is still lower than 60 bpm and not breathing by themselves after resuscitation, the resuscitation should be stopped.

B. Post resuscitation care:

- For babies breathing well with 30-60 breaths per minute (normal range) without severe chest indrawing or grunting or cyanosis:
 - Put the baby in direct skin-to-skin contact on the mother's chest and do routine newborn care including observation for feeding cues
 - Reassure the mother.
- Babies who received continuous ventilation for >5 minutes needs monitoring every 15 minutes for 2 hours
 - Look at the chest for indrawing
 - Take vital signs: heart rate, respiratory rate and temperature
 - Listen for grunting
 - Observe for cyanosis.

- Babies breathing >60 or <30 breaths per minute or with severe chest indrawing or grunting or cyanosis may benefit from supplemental oxygen. Prepare to transfer to specialized services accompanied by an expert midwife:
 - Put baby in direct skin-to-skin contact with the mother to keep baby warm
 - Continue to give oxygen by nasal cannula or face mask until breathing 30 – 60 breaths per minute and no severe chest indrawing; monitor oxygen saturation if equipment available
 - Anytime the respiratory rate becomes normal (30-60 breaths per minute) and the chest-indrawing, grunting or cyanosis stops, decrease and eventually stop giving the oxygen
 - Newborns breathing <20 breaths per minute need bag and mask ventilation
- Explain to mother what care is being given and why
- Take care of baby with breathing difficulties (page 183).

2-7 Third stage of labor-delivery of the placenta

The placenta must be delivered using active management, as follows:

Deliver the Placenta	Treatment and Advise
<ul style="list-style-type: none"> • Ensure that 10-IU oxytocin has been given during the first minute • Use controlled cord traction, as follows <ul style="list-style-type: none"> - Clamp the cord close to the perineum. Hold clamped cord and end of the forceps with one hand - Place side of the other hand just above the pubic bone with palm facing toward the mother's umbilicus and gently push upwards on the uterus (this applies counter traction to the uterus during controlled cord traction) - When the uterus contracts (becomes rounded and the cord lengthens) • Gently pull downwards along birth canal on the cord to deliver the placenta: <ul style="list-style-type: none"> - gently pull downward - then pull gently in horizontal direction (flat) 	<ul style="list-style-type: none"> • If, after 30 minutes of giving oxytocin, the placenta is not delivered and the woman is NOT bleeding, must: <ul style="list-style-type: none"> - Empty bladder - Repeat controlled cord traction and if the placenta still does not come out and no bleeding, suspect placenta accreta • If the woman is bleeding and the placenta is still not delivered in another 30 minutes (totally 1 hour after delivery) <ul style="list-style-type: none"> - Remove placenta manually (see p.283) • First, give Ampicillin 2g IM antibiotic before removing; then • Use Oxytocin 10 IU IM and can be used more if the uterus is not well-contracted • If the woman is bleeding, manage quickly.

<ul style="list-style-type: none"> - Finally, when the placenta is seen at the vagina opening, pull the placenta gently upward. • If the placenta does not descend during 30-40 seconds of controlled cord traction, release both cord traction and counter traction on the abdomen and wait until the uterus contracts again; then repeat controlled cord traction with counter traction • As the placenta comes out, catch it with both hands, then, gently twist them into a rope and move them up and down to assist separation without tearing the membrane. • DO NOT use excessive traction on the cord • DO NOT squeeze or push the uterus to deliver the placenta 	<ul style="list-style-type: none"> • If the placenta does not descend for another 30 minutes (total of 1 hour after delivery) and there is no bleeding, it might be the sign of Placenta Accreta that should be referred to the operation section for total or subtotal hysterectomy.
<ul style="list-style-type: none"> • Check that placenta and membranes are complete • Do not always perform manual removal of placenta at all delivery, except for the placenta examination and membrane which confirm there are placenta fragments. 	<ul style="list-style-type: none"> • If placenta is incomplete: <ul style="list-style-type: none"> - Remove placental fragments manually - Give antibiotic by giving Ampicillin 2g IM first before removing - Then, use Oxytocin 10 IU IM and can be used more if the uterus is not well-contracted
<ul style="list-style-type: none"> • Check that the uterus is well contracted and there is no heavy bleeding • UTERINE MASSAGE <ul style="list-style-type: none"> - Immediately massage the funds of the uterus until the uterus is firmly contracted - Repeat uterine massage every 15 minutes for the first hour and every 30 minutes in the second hour 	<ul style="list-style-type: none"> • If heavy bleeding: <ul style="list-style-type: none"> - CALL FOR HELP - Massage uterus to expel clots, if any, until it is hard - Give oxytocin 10 IU IM - Insert 1000ml of NSS or Lactate Ringer IV, and add 20 IU of oxytocin to IV fluids and give at 60 drops per minute - Fill in the loss blood by NSS or Lactate Ringer 1000ml IV fluid

<ul style="list-style-type: none"> - Ensure that the uterus does not become relaxed (soft) after you stop uterine massage. 	<ul style="list-style-type: none"> another line using catheter 18G at rapid rate. - Empty the bladder. • If bleeding persists and uterus is soft: <ul style="list-style-type: none"> - Continue massaging uterus until it is hard - Apply bimanual compression of uterus or aortic compression (see p.286-287) - Continue 20 IU of oxytocin in 1000ml IV fluid at 30 drops per minute - If bleeding continues in spite of compression and there is a sign of shock, the anti-shock garments should be used and arrange emergency operation.
<ul style="list-style-type: none"> • Examine perineum, lower vagina and vulva for tears 	<ul style="list-style-type: none"> • If there are third and fourth degree tears, must repair the tear (see p.259) • For other tears, apply pressure over tear with sterile pad or gauze and put legs together. Check after 5 minutes, if bleeding persists repair the tear.
<ul style="list-style-type: none"> • Collect, estimate and record blood loss throughout third stage and immediately afterwards 	<ul style="list-style-type: none"> • If blood loss \approx 250 ml but bleeding has stopped: <ul style="list-style-type: none"> - Monitor and take care of the woman at facility for at least 24 hours - Monitor intensively during the 2 hours after the delivery (every 15 minutes for the first hour and every 30 minutes for the second hour): <ul style="list-style-type: none"> - Take BP, pulse - Check vagina bleeding - Palpate the uterus, making sure that it is well contracted

	<ul style="list-style-type: none"> • Assist the woman when she first walks after giving birth.
<ul style="list-style-type: none"> • Clean the woman and the area beneath her • Put a sanitary pad or folded cloth under her buttocks to assess the bleeding • Help her to change clothes when necessary. 	
<ul style="list-style-type: none"> • Keep the mother skin to skin with the baby in the delivery room for a minimum of two hours after delivery of the placenta. 	
<ul style="list-style-type: none"> • Dispose of placenta and inspect the infection according to the MOH Infection Control guidelines. 	<ul style="list-style-type: none"> • Use gloves when handling the placenta.

2-8 Management of selected labor and delivery problems

2-8-1 Unsatisfactory progress in labor

A diagnosis of prolonged latent phase is made when the cervix is not dilated beyond 3 cm, and/or cervix is not fully effaced, after 8 hours of regular contractions. A diagnosis of prolonged active phase is made when cervical dilatation moves to the right of the alert line on the partograph. This can be due to inadequate contractions or cephalopelvic disproportion.

Cephalopelvic disproportion: can be defined when the second arrest of cervical dilatation and descent of the presenting part of the fetus in the presence of good contractions occur. Cephalopelvic disproportion occurs because the fetus is too large or the head deflexed or the maternal pelvis is too small. If labor persists with cephalopelvic disproportion, it may become obstructed. Signs of **obstruction** include the secondary arrest of cervical dilatation and descent of presenting part of the fetus, a large caput, severe molding (third degree), and edematous cervix, a cervix that is poorly applied to the presenting part, ballooning of the lower uterine segment, formation of a retraction band (the sign of near uterine rupture), and fetal distress.

Note: The partograph must be used for all women in labor for the early detection and management of unsatisfactory progress in labor.

Assess and manage the woman who experiences unsatisfactory progress in labor, as follows:

<p>General management:</p> <ul style="list-style-type: none"> - Rapidly assess the condition of the mother and fetus, and provide supportive care - Review partograph, referral notes, and mother health record. 	
<p>Assessment/signs and symptoms</p>	<p>Appropriate management</p>
<p>Prolong latent phase</p> <ul style="list-style-type: none"> • Cervical dilatation is no more than 3cm after 8 hours of regular uterine contraction (from starting of labor). 	<p>Prolong latent phase</p> <ul style="list-style-type: none"> • Assess the cervix • If there has been no change in the cervical (effacement or dilatation) and there is no fetal distress, the woman may not be in labor • If there has been a change in cervical effacement or dilatation, strong and regular uterine contraction, Active Phase is confirmed, rupture the membranes with a Kocher clamp and induce labor using oxytocin <ul style="list-style-type: none"> - Reassess every four hours - If the woman has not entered the active phase after eight hours of oxytocin infusion, deliver by caesarean section • If there are signs of infection, augment labor immediately with oxytocin and give a combination of antibiotics through IV fluids until the woman is fever-free for 48 hours and continue to provide medication at the right amount of dose.
<p>Prolonged Active Phase:</p> <ul style="list-style-type: none"> • cervical dilatation to the right of the alert line on the partograph. 	<p>Prolonged Active Phase:</p> <ul style="list-style-type: none"> • If no signs of cephalopelvic disproportion or obstruction, and membranes intact, rupture membranes (page 250) • Provide supportive care

	<p>- Assess uterine contractions if contractions are inefficient (less than 3 contractions in 10 mn, each lasting less than 40 seconds), suspect inadequate uterine activity. If contractions are efficient (3 or more contractions in 10 mn, each lasting more than 40 seconds) suspect cephalopelvic disproportion, obstruction, malposition, or malpresentation</p> <ul style="list-style-type: none"> • When cephalopelvic disproportion is diagnosed delivered by caesarean section. If the fetus is dead, deliver by craniotomy • If obstructed labor and fetus is alive and the condition is favorable deliver by vacuum extraction or if not possible deliver by C-Section; • If the contraction is inadequate and there is no cephalopelvic disproportion and no sign of obstruction, artificial rupture membrane and augment labor by oxytocin. Do not keep the woman alone during the augmentation of labor. After 2 hours of adequate contraction, reassess the progress of labor by doing a vaginal examination, if there is no progress, deliver by C-Section.
<p>Prolonged Expulsive Phase:</p> <ul style="list-style-type: none"> • cervix fully dilated and woman has the urge to push, but there is no descent (On average, the second stage lasts 1 hour for primipara and half an hour for multipara) 	<p>Prolonged Expulsive Phase:</p> <ul style="list-style-type: none"> • If mal-presentation and obvious obstruction have been excluded, augment labor with oxytocin • If there is no descent after augmentation, deliver by vacuum extraction or C-Section.

2-8-2 Fever (Temperature >38°C)

A woman who has a fever (temperature 38°C or more) during pregnancy or labor is a sign of the risk of uterine and fetal infection that requires appropriate management. Assess and manage the woman who has a fever during pregnancy or labor as the following:

Assess and manage the fever treatment during pregnancy and labor	
General management: <ul style="list-style-type: none"> ○ Encourage increased fluid intake by mouth ○ Use a fan or tepid sponge to help decrease temperature ○ Insert an IV line if necessary 	
Assessment/signs and symptoms	Appropriate management
Acute pyelonephritis: <ul style="list-style-type: none"> • Dysuria • Spiking fever/chills • Increased frequency and urgency of urination • Abdominal pain 	Acute pyelonephritis: <ul style="list-style-type: none"> • Start an IV infusion and infuse IV fluids at 150 mL per hour • Urine culture should be done (if available) to identify the suitable antibiotic • If the urine culture is unavailable, treat with antibiotics until the woman is fever-free for 48 hours: <ul style="list-style-type: none"> - ampicillin 2 g IV/IM every six hours then 1g IV every eight hours including - gentamicin 80 mg IM every 12 hours • Once the woman is fever-free for 48 hours, give amoxicillin 500 mg orally three times per day (to complete 7 days of treatment).
Pneumonia: <ul style="list-style-type: none"> • Fever • Difficulty in breathing • Cough with expectoration • Chest pain. 	Pneumonia: <ul style="list-style-type: none"> • Give antibiotics as above.
Uncomplicated Malaria: <ul style="list-style-type: none"> • Fever • Chills • Sweat 	Uncomplicated Malaria: <ul style="list-style-type: none"> • Please refer to the Cambodia National Malaria treatment guideline.

<ul style="list-style-type: none"> • Headache Muscle/joint pain. 	
<p>Severe/complicated Malaria,</p> <ul style="list-style-type: none"> • Symptoms and signs of uncomplicated malaria with the addition of the following signs: <ul style="list-style-type: none"> • Anemia, jaundice • Severe fatigued • mental illness • breathing difficulties • frequent convulsion • low blood pressure • abnormal bleeding • oliguria, frequent vomit. 	<p>Severe/complicated Malaria</p> <p>Please refer to the Cambodia National Malaria treatment guideline.</p>

2-8-3 Malposition (face and brow) and malpresentations

Malposition is the abnormal position of the vertex of the fetal head (with the occiput as the reference point) relative to the maternal pelvis.

Malpresentations are all presentations of the fetus other than vertex.

Occiput posterior position occurs when the fetal occiput is posterior in relation to the maternal pelvis.

The occiput transverse position occurs when the fetal occiput is transverse to the maternal pelvis. If an occiput transverse position persists into the later part of the first stage of labor, it should be managed as an occiput posterior position.

Brow presentation is caused by partial extension of the fetal head so that the occiput is higher than the sinciput. In brow presentation, engagement is usually impossible and cannot deliver through vagina.

Face presentation is caused by hyper-extension of the fetal head so that neither the occiput nor the sinciput are palpable on vaginal examination. The chin serves as the reference point in describing the position of the head.

Compound presentation occurs when an arm prolapses alongside the presenting part. Both the prolapsed arm and the fetal head present in the pelvis simultaneously.

A breech presentation occurs when the buttocks and/or the feet are the presenting parts.

- A **complete (flexed) breech presentation** occurs when both legs are flexed at the hips and calves are flexed at thighs.

- **Frank (extended) breech presentation** occurs when both legs are flexed at the hips, but calves are straight up.



- **A footling breech presentation** occurs when a leg is extended at the hip and the knee.



Transverse lie and shoulder presentation occur when the long axis of the fetus is transverse. The shoulder is typically the presenting part.



Assess and manage the woman who presents with a malposition or malpresentation, as follows:

Assessment and management of malposition and malpresentation	
General Management:	
<ul style="list-style-type: none"> • Rapidly assess the general condition of the mother • Assess fetal condition • Provide encouragement and supportive care. 	
Assessment/signs and symptoms	Appropriate management
Occiput posterior positions: <ul style="list-style-type: none"> • On abdominal examination, the lower part of the abdomen is flattened, but on pubis bone is a bit bulging, fetal limbs are palpable anteriorly and the fetal heart may be heard in the flank 	Occiput posterior positions: <ul style="list-style-type: none"> • If there are signs of obstruction or the fetal heart rate is abnormal, deliver by cesarean section • Ruptured membranes and, if indicated, augment labor with IV oxytocin

<ul style="list-style-type: none"> On vaginal examination, the posterior fontanelle is towards the sacrum and the anterior fontanelle may be easily felt if the head is deflexed. 	<ul style="list-style-type: none"> Delivery by vacuum extraction (see p.270) or cesarean section, depending on cervical dilatation and descent of the fetal head.
<p>Brow presentation:</p> <ul style="list-style-type: none"> On abdominal examination, more than half the fetal head is above the symphysis pubis and the occiput is palpable at a higher level than the sinciput On vaginal examination, the anterior fontanelle and the orbits are felt, may be hard to listen to the fetal heart rate. 	<p>Brow presentation:</p> <ul style="list-style-type: none"> If the fetus is alive, deliver by cesarean section.
<p>Face presentation:</p> <ul style="list-style-type: none"> On abdominal presentation, a groove may be felt between the occiput and the back of the fetus On vaginal examination, the face is palpated, the examiner's finger enters the mouth easily and the bony jaws are felt. 	<p>Face presentation:</p> <ul style="list-style-type: none"> If the chin is in the anterior position and the cervix is fully dilated, proceed with normal delivery If the cervix is not fully dilated and there is no sign of obstruction, augment with oxytocin If the chin is in the posterior position, deliver by cesarean section If the cervix is not fully dilated, monitor descent, rotation of the head, and progress of labor If there are signs of obstruction, deliver by caesarean section.
<p>Compound presentation:</p> <ul style="list-style-type: none"> Prolapsed arm alongside the presenting part 	<p>Compound presentation:</p> <ul style="list-style-type: none"> Assist the mother to assume the knee-chest position and push the arm above the pelvic brim and hold it there until a contraction pushes the head into the pelvis if this procedure fails or the cord prolapses (still alive), deliver by cesarean section.
<p>Breech presentation:</p>	<p>Breech presentation:</p>

<ul style="list-style-type: none"> • On abdominal examination, the head is felt in the upper abdomen and the breech in the pelvic brim • Auscultation locates the fetal heart higher than expected with a vertex presentation • On vaginal examination during labor, the buttocks and/or feet are felt; thick dark meconium is normal. 	<ul style="list-style-type: none"> • If labor started during or over 37 weeks of pregnancy and the membrane is not yet broken, and vaginal delivery is possible with no other complication, try a vaginal delivery • If vaginal delivery is not possible, delivery by c-section. (For detail, see section 7.8).
<p>Transverse lie and shoulder presentation:</p> <ul style="list-style-type: none"> • On abdominal examination, neither the head nor the buttocks can be felt at the symphysis pubis and the head is usually felt in the flank • On vaginal examination, a shoulder may be felt, but not always; an arm may prolapse and the elbow, or arm may be felt in the vagina. 	<p>Transverse lie and shoulder presentation:</p> <ul style="list-style-type: none"> • Delivery by caesarean section.

2-8-4 Fetal distress in labor

Fetal distress in labor is characterized by abnormal fetal heart rate (less than 110 or more than 160 beats per minute) and thick meconium-stained amniotic fluid.

A normal fetal heart rate may slow during a contraction but usually recovers to normal as soon as the uterus relaxes. If the fetal heart rate is very slow in the absence of contractions or persisting after contractions, suspect fetal distress.

A rapid fetal heart rate may be a response to maternal fever, drugs causing rapid maternal heart rate (i.e., tocolytic drugs), hypertension, or amnionitis. In the absence of a rapid maternal heart rate, a rapid fetal heart rate should be considered a sign of fetal distress.

Meconium-stained amniotic fluid:

- **Meconium in the amniotic fluid, either thick or thin**, is not an indication for suctioning. A baby's mouth and nose should be suctioned only if there is an airway blockage preventing breathing
- In breech presentation, meconium is passed in labor because of compression on the fetal abdomen during birth. This is not a sign of distress unless it occurs in early labor

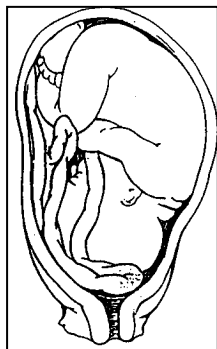
- Meconium passed by **preterm** in utero is a sign of infection and needs to be treated with antibiotics before birth for the mother (give immediately) and after birth for the baby.

Assess and manage the woman who experiences fetal distress in labor, as follows:

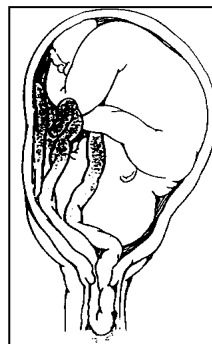
Assessment and management of fetal distress in labor	
General management: <ul style="list-style-type: none"> • Prop up the mother or place her on her left side • Stop providing oxytocin (if being given) • If membranes have ruptured, do vaginal examination to look for prolapsed cord • Check for meconium stain in amniotic fluid • Count fetal heart rate 15 minutes later. 	
Assessment/signs and symptoms	Appropriate management
Prolapsed cord: Cord spotted at the vulva.	Prolapsed cord: Manage urgently as a prolapsed cord (see p.221).
Baby not well: <ul style="list-style-type: none"> • Fetal heart rate lower than 110 or more than 160 per minute after half-hour of monitoring. 	Baby not well: <ul style="list-style-type: none"> • If a maternal cause is identified, initiate appropriate management • If a maternal cause is not identified and the fetal heart rate remains abnormal throughout at least three contractions, perform a vaginal examination to check for explanatory signs of distress • If there is bleeding with intermittent or constant pain, suspect abruption placenta (see p.53) • If there are signs of infection, give antibiotics • If the cord is below the presenting part or in the vagina, manage as a prolapsed cord (see p.115) • If fetal heart abnormalities persist or there are additional signs of distress (thick meconium-stained fluid), delivery by either vacuum extraction or cesarean section immediately. Prepare to resuscitate newborn (see p. 99).
Baby well: Fetal heart rate returns to normal.	Baby well: Monitor fetal heart rate every 15 minutes.

2-8-5 Prolapsed cord

The cord is said to have prolapsed when it lies in the birth canal below the fetal presenting part or it is visible at the vagina following rupture of membranes.



Cord prolapse in front of head



Cord prolapse into vagina

Assess and manage the woman who experiences prolapsed cord during labor:

Assessment and management of prolapsed cord	
<p>General management:</p> <ul style="list-style-type: none"> • Give oxygen at 4–6 L per minute by mask or nasal cannula (if available) • Call for help. 	
Assessment/signs and symptoms	Appropriate management
<ul style="list-style-type: none"> • Check and gently feel the placenta to check for pulse • Feel the form of the fetus • Examine the vagina to decide the stage of labor. 	<ul style="list-style-type: none"> • If the woman is in the first stage of labor, must: <ul style="list-style-type: none"> - Position the woman in a 'knee-chest position' - In all cases, wearing sterile gloves, insert a hand into vagina and push the presenting part up to decrease pressure on the cord and dislodge the presenting part from the pelvis. Place the other hand on the abdomen in the suprapubic region to keep the presenting part out of the pelvis. Once the presenting part is firmly held above the pelvis brim, remove the other hand from the

	<p>vagina. Keep the hand on the abdomen until caesarean section</p> <ul style="list-style-type: none"> - If available, give Salbutamol 0.5 mg IV slowly over two minutes to reduce contractions - Perform immediate caesarean section. <ul style="list-style-type: none"> • If the woman is in the final stage of labor: <ul style="list-style-type: none"> - Place the woman in an appropriate position to help the progress of labor - Deliver as soon as possible by encouraging the woman to push when the uterine is contracted - Expedite delivery with episiotomy (see page 252) and vacuum extraction (see page 265) - If breech presentation, perform breech extraction (see page 260) - Prepare for the resuscitation of the newborn (see page 99).
--	--

2-8-6 Shoulder dystocia

Shoulder dystocia occurs when the fetal head has been delivered but the shoulders are stuck and cannot be delivered. It is a condition that cannot be predicted (in most cases, the baby is too big).

Assess and manage the woman with shoulder dystocia during delivery, as follows:

Assessment and management of shoulder dystocia	
General management:	
<ul style="list-style-type: none"> • Be prepared for shoulder dystocia at all deliveries, especially when delivering large baby • Have several persons available to help on time. 	
Assessment/signs and symptoms	Appropriate management

<ul style="list-style-type: none"> • Fetal head is delivered but shoulders are stuck and cannot be delivered • The chin retracts and depresses the perineum • Traction on the head fails to deliver the shoulder, which is caught behind the symphysis pubis. 	<ul style="list-style-type: none"> • Call for additional help • Prepare for newborn resuscitation • Explain the problem to the woman and her family • Place the mother on her back with both thighs flexed, bringing her knees as far up as possible against her chest • ask a birth companion or other helper to keep the legs in this position • make an adequate episiotomy (see p. 256) • ask the assistant to apply continuous downward pressure, with the palm on the abdomen directly above the pubic area, while you maintain continuous downward traction on the head to move the shoulder that is anterior under the symphysis pubis • if the shoulder is still not delivered, assist the woman into a kneeling position on all fours • wearing a sterile glove introduce the right hand into the vagina along the posterior curve of the sacrum • use pressure to hook the posterior shoulder or arm downwards and forwards through the vagina • complete the rest of the delivery as normal • DO NOT pull excessively on the head at any time while attempting to deliver the shoulder.
--	---

2-8-7 Twin or Multiple birth

If multiple fetal poles and parts are felt on abdominal examination, suspect twin or multiple pregnancies. Other signs may include: fetal head is small in relation to the size of the uterus; uterus larger than expected for gestation; and more than one fetal heart heard with a Doppler fetal stethoscope.

Assess and manage the woman who presents with twin or multiple pregnancies, as follows:

Management of twin or multiple births	
General management: <ul style="list-style-type: none"> • Make comfortable position for the woman • Prepare the delivery room and equipment for 2 or more births • Arrange for a helper to assist with the births and care for the babies • Ultrasound assessment of the position of the babies (if possible). 	
Assessment	Appropriate management
<ul style="list-style-type: none"> • The first stage of labor. 	<ul style="list-style-type: none"> • Manage as for normal labor and delivery (see p.78)
<ul style="list-style-type: none"> • The second stage of labor. 	<ul style="list-style-type: none"> • Deliver the first baby following usual procedure, resuscitate if necessary and keep the baby warm • Ask a helper to attend to the first baby • Palpate uterus immediately to determine the lie of the second baby: <ul style="list-style-type: none"> - If the head presentation is normal, check for a fetal heartbeat and wait for strong contraction again then rupture membrane of this second baby which normally happen within 1 hour after delivery of the first baby - If a transverse or oblique lie, rupture membrane and rotate the fetus in the uterus to make a breech presentation and deliver as breech presentation • Stay with the woman and continue monitoring her and the fetal heart rate intensively • Remove wet clothes from underneath her and cover her if feeling chilled • When membranes rupture, perform vaginal examination to check for prolapsed cord; if present (see p. 115) • When strong contraction restart, ask woman to bear down when she feels ready • Deliver the second baby, resuscitate if necessary, label baby twin 2 • Ask a helper to attend to the second baby • Palpate uterus for third baby; if present, proceed as described above • Do not attempt to deliver placenta until all babies are born. Do not give the woman oxytocin until after the birth of all babies.

<ul style="list-style-type: none"> • Third stage of labor 	<ul style="list-style-type: none"> • Please see the 3rd stage of normal labor • Oxytocin 10 IU IM after it is sure that there is no fetus in the uterus • When the contraction of the uterus is good, perform the delivery of the placenta and membrane by gently pulling together with the cords until the placenta is out • After delivering the placenta and membrane, intensively check for vaginal bleeding. • Check placenta and the membrane to make sure that no any placenta fragments inside the uterus. • Uterine massage: <ul style="list-style-type: none"> – Massage the fundus of the uterus immediately until the contraction of the uterus is good – Perform the uterine massage every 15 minutes for the first 2 hours – Make sure that the uterus is not becoming soften after the massage is stopped.
<ul style="list-style-type: none"> • Immediate postpartum 	<ul style="list-style-type: none"> • Monitor intensively as the risk of bleeding is increased • Provide immediate postpartum care (see below) • Keep mother at a delivery room for longer observation • Prepare to measure hemoglobin postpartum if possible • Give special support for the care and feeding of the twin babies.

2-9 Monitoring and actions needed for mother and newborn after delivery

(Fourth Stage of the Labor)

Ensure the room temperature is over 25 °C and that there is no airflow in the room. Monitor the mother and baby every 15 minutes for 1 hour after delivery of the placenta, every 30 minutes during the second 2 hours, every hour in 3rd and 4th hours, and then every four hours until discharge.

Mother:

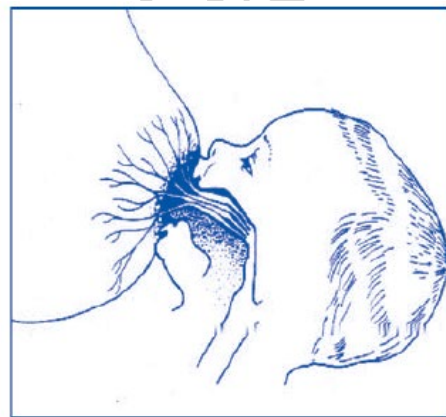
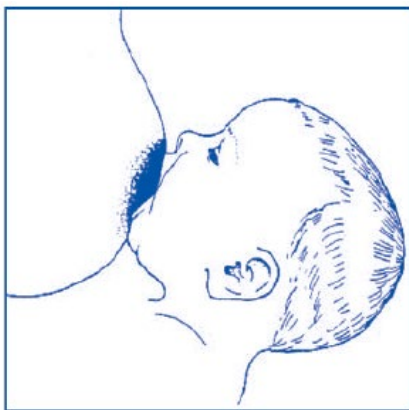
- Look for emergency signs

- Feel if the uterus is hard and round; if the uterus is soft, massage
- Assess the amount of vaginal bleeding:
 - If pad soaked in less than 5 minutes, or constant trickle of blood, manage as for postpartum hemorrhage (see p. 125)
 - If bleeding from a perineal tear, repair if required
- Record findings, treatments, and procedures in the mother health's record
- Keep mother and baby together; do not separate them unless emergency care is needed
- Move from the delivery bed to a hospital bed as soon as possible; if not possible, help the mother to position herself in a way that baby is in skin-to-skin contact
- Transfer mother and baby to ward when stable (after observation) keeping them in skin contact
- Ensure that exclusive breastfeeding is supported in postpartum wards
- Encourage her to eat, drink and move about freely
- Encourage her to pass urine
- Ask the birth companion to stay with the mother.

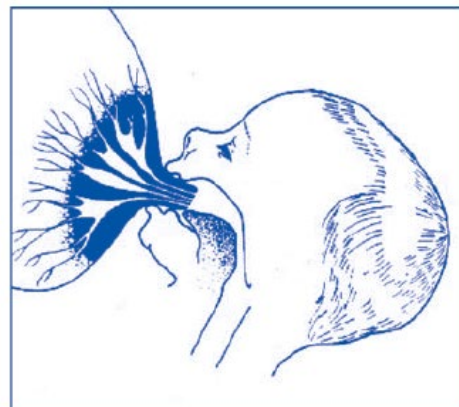
Newborn:

- Health workers SHOULD NOT separate the newborn from his mother or handle the baby unless there is a medical need and only after thorough hand washing or alcohol cleanser
- After birth, let the baby rest comfortably on the mother's chest in direct skin-to-skin contact at least for the first 60 minutes. Do not separate the baby and the mother if it is not necessary. Maintain direct skin-to-skin contact throughout the hospital stay.
- Assess breathing: look/listen for rapid respiratory rate, chest indrawing, grunting, and cyanosis (if present) even during skin-to-skin contact of the baby,
- Always keep the baby warm: check to see if feet are cold to touch
- Encourage the mother to begin breastfeeding when the newborn has feeding cues indicating readiness to breastfeed: drooling, opening the mouth, tonguing, licking, rooting, and sucking of fingers. This typically occurs at between 20 and 60 minutes of birth. Do not force-feed the baby if the feeding cues do not occur
- Check that position is correct:
 - Make sure the baby's head and body are in a straight line
 - Make sure the baby is facing the breast, with nose opposite nipple
 - Mother should hold baby's body close to her body
 - Support the mother for holding the baby's buttocks, not just the neck and shoulders.
- Check that the attachment is correct
 - Baby mouth wide open

- Lower lip turned downward
- Baby's chin touching the mother's breast
- More areola visible above baby's mouth than below, sucks are slow and deep with occasional pauses.
- Signs of **ineffective** attachment include:
 - Baby's mouth is not wide open and pouts forward
 - The lower lip is outward
 - The baby's chin does not touch the mother's breast
 - The black circle around the nipples at the bottom remains more than the upper part.



Good attachment



Poor attachment

- Mother can improve the attachment by:
 - Touching the baby's lips with her nipple
 - Waiting until the baby's mouth is opened wide
 - Moving baby quickly onto the breast, aiming baby's lower lip well below nipple
 - Trying different positions i.e., sitting upright or laying on her side.

- Let baby release the breast by her/himself, then offer the second breast
- If the baby does not feed in 1 hour and is healthy, leave the baby in direct skin-to-skin contact with the mother to try again when the baby is ready
- Support exclusive breastfeeding on demand, day and night, for as long as the baby wants.

Note: If the newborn is sleeping for too long, it is better to pick up the baby for breastfeeding without having to wake the newborn. If the baby wakes, the breast should be offered.

- Advise the mother and accompanying persons about newborn feeding:
 - Explain the importance of feeding colostrum
 - Explain exclusive breastfeeding.

Note:

- Do not touch the newborn if not necessary
- Do not give anything to the newborn before starting to breastfeeding the newborn (There should be NO teats, NO water, NO sugar water, NO formula milk, NO cinnamon water, NO porridge, etc.)
- Do not squeeze the colostrum out to waste
- The health facilities should not allow bottles, teats, and formula in wards (except in rare circumstances for medical reasons). This is part of the baby-friendly hospital initiative
- If the mother is having HIV, there must be a preventive measure to prevent mother-to-baby transmission and provide consultation and treatment.
- For low-birth-weight babies: as above, but begin Kangaroo Mother Care immediately (see p. 180); cover baby and mother with an extra blanket.

The following should be done after a full breastfeed (generally, between the 90th minute to 6 hours):

- Wipe the eyes with a cotton swab or clean piece of cloth
- Apply 1 % tetracycline eye ointment (do not wash away the eye ointment)
- Do not remove vernix or bathe the baby
- Weigh newborn and record: birth weight, timing of first breastfeed, and other required information on mother health's record and child card
- After cleaning sites with clean water, inject vitamin k 1mg IM, Hepatitis b vaccine, and BCG
- Perform physical examination orderly from head to toe. Check for sign of birth defect using normal observation and feel. Orderly inspect the body such as head, eyes, mouth, ears, neck, chest, abdomen, rectum, genitals, pelvis, limbs, and spine (please see annex on the physical examination tools for the newborn)

- If detecting any morbidity or any conditions detected through the examination, the newborn should be diagnosed and treated.

The newborn shall be monitored and assessed together and the monitoring of the mother should be done in stage 4 and after:

✚ Eyes care

- Wash your hand
- Explain to the mother that you will put the eyedrop to prevent infection
- Wipe the eyes using a clean swab or cloth
- Use pomade tetracycline 1% for both eyes. Drop it from the inside to the outside of the eyes (Do not wipe out pomade).

Provide additional service for low-birth weight baby (twin)

✚ For low-birth weight baby: Follow the above protocol together with the following:

- Start newborn care by following kangaroo care immediately (page 178)
 - Cover the mother and the newborn with another layer of the blanket
 - Do not bath the baby
 - Ensure hygiene by using clean clothes after 1 day of delivery
 - Provide additional care in breastfeeding (page 179).
- If the mother is unable to do the skin-to-skin contact with the newborn due to her conditions, the newborn shall be wrapped in clean cloths to keep him warm. Then put the newborn in the bed by covering the newborn with a thick cloth and encourage the family of the mother to perform skin-to-skin contact with the newborn, or place the newborn in the warm bed if the room temperature is lower than 28°C.

Note: The baby should not be separated from the mother for the injections. The injections must be available on the maternity ward every day of the week including weekends and holidays. If the mother HIV-positive, ensure the continuation of treatment for her and initiation of antiretroviral therapy for the newborn and perform HIV DNA PCR test for the newborn at the obstetrics ward (more detail in National Guidelines on the Care of Newborn with HIV, NCHADS, and Prevention of Mother-To-Child Transmission (PMTCT) of HIV) and initiate appropriate feeding method.

2-10 Assess the mother after delivery

Assess the mother during 2 hours after delivery or longer than this and again before discharge (which should not be before 24 hours), as follows:

Ask, check, record	Look, listen, feel
--------------------	--------------------

<p>Check record:</p> <ul style="list-style-type: none"> • Bleeding more than 250 ml • Complete removal of placenta and membranes • Complications during delivery and postpartum • Special treatment needs • Needs tubal ligation or IUD <p>Ask mother about</p> <ul style="list-style-type: none"> • Feeling • Pains • Concerns • Baby • Breast-related problems. 	<ul style="list-style-type: none"> • Measure blood pressure • Measure temperature • Measure pulse • Feel the uterus; is it hard and round? • Look for vaginal bleeding • Look at perineum: <ul style="list-style-type: none"> - Is there a tear or cut? - Is it red or swollen? • Look for conjunctival and palmar pallor.
---	--

★Treatment and advice

A healthy mother (hard uterus, little bleeding) has no perineal problem, no fever, no pallor, normal blood pressure, and pulse. Keep mother and baby at the facility for at least 48 hours after delivery. Assess the mother and baby before discharge:

- Ensure preventive measures, including iron/folic acid (42 tablets), and mebendazole (see pae 1690)
- Provide tetanus toxoid immunization if needed
- Observe breastfeeding and assess the condition of breastfeeding. Teach the mother the proper way to breastfeed (see p.99)
- Counsel on feeding colostrum and exclusive breastfeeding
- Advice on postpartum care and hygiene (see p.170)
- Counsel on mother's nutrition (see p.171)
- Counsel on birth spacing (see p.172)
 - If the woman prefers to have female sterilization, that must be done within 7 days after birth
 - If the woman prefers IUD, refer her to FP services 4 weeks after delivery
- Advise on when to seek care and next routine postpartum visits (see p.140)
- Reassess before discharging. If problems occur, must continue to take care of the mother and the baby in the hospital
- Continue any treatments initiated earlier
- Advise on danger signs and tell mother to return immediately if she or her baby has a danger sign
- Advise the mother to bring the mother's and baby's records with her to every visit.

2-11 Management of selected postpartum problems

2-11-1 Vaginal Bleeding after Childbirth

Postpartum hemorrhage (PPH) is defined as vaginal bleeding in excess of 500ml after childbirth or of 1000ml after cesarean section. There are, however, some problems with this definition. For instance, estimates of blood loss are notoriously low, often half the actual loss. Sometimes, blood is mixed with amniotic fluid and sometimes urine, and is often dispersed on sponges, towels, and linens, in buckets, and on the floor.

The importance of a given volume of blood loss varies with the mother's hemoglobin level. A mother with a normal hemoglobin level will tolerate blood loss but may be fatal for an anemic mother.

Although the woman is healthy with no anemia, she might be facing the risk of danger due to blood loss.

Bleeding may occur at a slow rate over several hours, and the condition may not be recognized until the mother suddenly enters a state of shock.

Active management of the third stage of labor (controlled cord traction) should be practiced on all women because it reduces the incidence of PPH due to uterine atony after delivery.

The postpartum intensive monitoring by examining the uterus conditions (good contraction), vaginal bleeding, pulse, and blood pressure every time after the women give birth is to make sure that the bleeding is promptly identified and respond promptly in case there is uterus problem, heavy bleeding, and the changes of the conditions of women.

Primary PPH is the increased vaginal bleeding within the first 24 hours after childbirth.

Secondary PPH is the increased vaginal bleeding following the first 24 hours after childbirth.

The light bleeding continuously or immediate heavy bleeding is an emergency that requires prompt and strong intervention.

Assess and manage the woman who presents with vaginal bleeding after childbirth, as follows:

Identify various cause of postpartum hemorrhage

Assessment and Management of Vaginal Bleeding After childbirth	
<p>General Management:</p> <ul style="list-style-type: none"> • Shout for help, urgently mobilize all available personnel • Rapidly assess the mother's general condition • If the shock is suspected, immediately begin treatment (see section 7.2). Even if there is no sign of shock, massage the uterus to expel blood and blood clots and give oxytocin IM 10IU (or IV if the IV fluid is already prepared) • Start an IV infusion and infuse the Normal Saline or Ringer lactate IV fluids • Catheterize the bladder to empty it • Check to see if the placenta has been expelled, and examine it for completeness • Examine the cervix, vagina, and perineum for tears. <p>• Note: Send the blood sample for blood type examination, hemoglobin or hematocrit level, and request for blood for transfusion if necessary, before IV fluid line.</p>	
Assessment/signs and symptoms	Specific treatment management
<p>A. Bleeding during the 24 hours after delivery:</p> <p>1. Atonic Uterus:</p> <ul style="list-style-type: none"> • Immediate postpartum hemorrhage • Soft uterus with no contraction. 	<p>Bleeding during the 24 hours after delivery:</p> <p>Atonic Uterus:</p> <ul style="list-style-type: none"> • Continue to massage the uterus • Give uterotonic together or sequentially (see table below) • Prepare for the need of blood beforehand, and transfuse as necessary • If bleeding continues, check placenta again for completeness and if there are signs of retained placenta fragments, remove remaining placenta tissue • If bleeding continues despite the management outlined above, perform

	<p>internal or external bimanual compression of the uterus (page 281) or aortic compression (see p.282)</p> <ul style="list-style-type: none"> • If bleeding continues despite compression, prepare for surgery (uterine and utero-ovarian artery ligation and/or subtotal hysterectomy (see p.295 and 297).
<p>2. Tears</p> <p>2.1. Tears of cervix, vagina or perineum:</p> <ul style="list-style-type: none"> • Immediate postpartum hemorrhage. <p>2.2 Uterus tears:</p>	<p>Tears of cervix, vagina or perineum:</p> <ul style="list-style-type: none"> • Examine and determine the degree of tear. If third a degree tear (involving rectum or anus), repair the tear (see p. 255). For other tears: apply pressure over the tear with a sterile pad or gauze and put legs together. Check after 5 minutes, if bleeding persists repair the tear. • Uterus tears: • Rescue and perform surgery operation. • •
<p>3. Retained Placenta:</p> <p>3.1. Placenta not delivered within 1 hour after delivery</p> <p><i>Note:</i> In some cases, the remaining placenta will not cause any bleeding.</p>	<p>Retained Placenta:</p> <p>Placenta not delivered within 1 hour after delivery</p> <ul style="list-style-type: none"> • If after 30 minutes of removing the placenta, the placenta is still retained and the mother is not bleeding, must: <ul style="list-style-type: none"> – Empty the bladder – Gently perform controlled cord traction again – If the placenta is still not delivered and no bleeding, it is suspected that the placenta is obstructed • If the woman is bleeding and the placenta is not delivered within

	<p>another 30 minutes (total of 1 hour after delivery):</p> <ul style="list-style-type: none"> - Manually remove the placenta (page 278) - Give antibiotic Ampicillin 2g IM before performing manual placenta delivery - Then Oxytocin 10 IU IM and may use more if the contraction is not good - If the woman is still bleeding after the placenta is delivered, rapid management and treatment shall be applied. <ul style="list-style-type: none"> • If the woman is not bleeding and the placenta is not delivered within another 30 minutes (a total of 1 hour of delivery), it might be the sign of Placenta Accreta that should refer to the operation section for attempting to manually remove placenta or do operation if the manual removal of placenta cannot be performed.
<p>3.2. Retained placental fragments:</p> <p>- If there are a portion of the maternal surface of the placenta remains, the uterus will not be able to contract well.</p> <p><i>Note:</i> In some cases, the remaining placenta fragment will not cause any bleeding.</p>	<p>Retained placental fragments:</p> <ul style="list-style-type: none"> - If possible, feel inside the uterus for placental fragments. Manual exploration of the uterus is similar to the technique described for removal of the retained placenta - If removing placental fragments by hand is not possible, use ovum forceps or blunt wide curette. <p>Note: Efforts to extract a placenta that does not separate easily may result in heavy bleeding or uterine perforation, which usually requires a hysterectomy.</p>

<p>3.3. Inverted uterus:</p> <ul style="list-style-type: none"> - Uterus fundus not felt on abdominal palpation - Slight or intense pain - Uterus tissue is visible through the vagina. 	<p>Inverted uterus:</p> <ul style="list-style-type: none"> - Repositioning the uterus should be performed immediately (see p.293)
<p>4. Blood clot</p> <p>Can be seen in case: eclampsia, placenta abruption, long time stillbirth, embolie amniotic and other causes</p> <ul style="list-style-type: none"> • 	<p>Blood clot:</p> <ul style="list-style-type: none"> • Provide treatment based on the cause of the disease • Infuse fresh whole blood. If not having, provide fresh frozen Plasma (15ml/kg) or packed red cells or platelet concentrates (if the bleeding continues and platelet is less than 20,000) based on the results from the laboratory.
<p><u>B. Bleeding after 24 hours of delivery:</u></p> <p>The uterus is soft and bigger than what we expected which might be caused by the infection in the uterus or the remains of the placenta fragments.</p>	<p><u>Bleeding after 24 hours of delivery:</u></p> <ul style="list-style-type: none"> • If heavy bleeding, perform the management as normal management • If there is a sign of infection (fever, foul smell bleeding), provide antibiotics as per the postpartum uterine infection • Oxytocin 10 IU IM • If the cervix is still opened, manually remove the blood clot and placenta fragments • If the cervix is not opened, remove the placenta fragments by using the blunt wide curette • The bleeding rarely continues until require the operation to stop the bleeding • The tissue sample should be sent for histology analysis to eliminate Trophoblastic tumor • The postpartum care after bleeding: closely monitor and educate on self-care and risk of infection.

Table: Use of oxytocic drugs:

	Dose and route	Continuing Dose	Maximum Dose	Precautions and contra-Indications
Oxytocin	IV: Infuse 20 IU in 1 L IV fluids as fast as possible IM: 10 IU	IV: Infuse 20 IU in 1 L IV fluids at 40 drops per minute.	Not more than 3 L of IV fluids containing oxytocin.	Do not give as an IV bolus at a fast drop speed.
Ergometrine/ Methylergometrine	IM or IV (slowly): 0.2 mg	Repeat 0.2 mg IM after 15 minutes. if required, give 0.2 mg IM or IV (slowly) every four hours	Five doses (Total 1 mg)	High blood pressure, preeclampsia, heart disease, and remaining placenta
Misoprostol PGE1	Sublingually 800mcg	Repeat 200-800 mcg	No more than 1600 mcg	
15-Methyl Prostaglandin F2 alpha	IM: 0.25 mg	0.25 mg every 15 minutes	8 doses (no more than 2 mg)	If the woman has asthma, do not give the IV injection as it can lead to death.
Tranexamic Acid	IV (slowly) 1 g	Infuse again in the next 30 minutes if the bleeding continues	No more than 10mg/kg/dose 3-4 times per day	There is a history of thrombosis or vein thrombosis or convulsion.

2-11-2 Elevated Diastolic Blood Pressure

It is important to continue the monitoring of blood pressure and pay attention to the danger signs of pre-eclampsia newly emerged, or existing pre-eclampsia that can become severe during postpartum because:

- Most women who have pre-eclampsia and eclampsia are recovered within 24 hours after the delivery, and a small majority of women are unstable or become severe
- Some women just having a sign of pre-eclampsia and eclampsia during the period after the delivery.

If the woman had elevated blood pressure, assess and provide care as follows:

Look, ask, listen, feel	Signs	Treatment and advice
<ul style="list-style-type: none"> ○ If diastolic blood pressure is ≥ 90mmHg, repeat after 15 mn rest ○ If diastolic blood pressure is still ≥ 90mmHg, ask the woman if she has: <ul style="list-style-type: none"> ▪ Severe headache ▪ Blurred vision ▪ Epigastric pain; and ▪ Check protein in the urine. 	<p>Severe Preeclampsia:</p> <ul style="list-style-type: none"> ○ Diastolic blood pressure ≥ 110 mmHg or ○ Diastolic blood pressure ≥ 90 mmHg and 2+ proteinuria in urine and any of the following signs: <ul style="list-style-type: none"> ▪ Severe headache ▪ Blurred vision ▪ Epigastric pain. 	<p>Severe Preeclampsia:</p> <ul style="list-style-type: none"> - Give MgSO₄ (see section 1.2.1).
	<p>Eclampsia:</p> <ul style="list-style-type: none"> • A woman has convulsion or unconscious after having convulsion • Diastolic BP ≥ 90-110 mmHg on two readings • 2+ proteinuria (on admission). 	<p>Eclampsia:</p> <p>Give MgSO₄ (see section 1.2.1).</p>
	<p>Sudden Hypertension:</p> <ul style="list-style-type: none"> - Diastolic BP still ≥ 110 mmHg on 2 readings. 	<p>Sudden Hypertension:</p> <ul style="list-style-type: none"> - If MgSO₄ is injected and the diastolic blood pressure is still > 100mmHg when measuring 2 times at 15 minutes apart, inject Hydralazine 10mg IV slowly (3 to 4 minutes. If cannot perform IV, do IM

		<ul style="list-style-type: none"> - Monitor blood pressure. If after 30 minutes the diastolic blood pressure is still > 90mmHg, inject Hydralazine 10mg IV slowly again until the blood pressure gets lower at 90mmHg. The first dose is 20mg and continue if necessary. - Do not give Ergometrine after delivery - If the blood pressure remains elevated after the delivery, continue giving MgSO₄ for another 24 hours.
--	--	--

Prevention of pre-eclampsia and eclampsia for the next pregnancy:

- In the area where the calcium in the everyday rations is low, it is advisable to give additional calcium (dosage 1.5-2.0g element calcium/day), to prevent pre-eclampsia and eclampsia to all women, especially the women with a high risk of pre-eclampsia.
- It is advisable to give acetylsalicylic acid (aspirin 75mg) in low dose before 20 weeks of gestation (from 12 weeks if possible) for women who are at high risk of pre-eclampsia in case those women are facing one or more risks as follows: previous severe eclampsia, diabetes, chronic hypertension, obesity, kidney disease, autoimmune disease, and having twins, etc.

2-11-3 Fever after childbirth

Fever (temperature 38°C or more) occurring more than 24 hours after delivery is a sign of infection. The main causes of fever after childbirth are metritis, pelvic abscess and mastitis.

Assess and manage the woman who presents with a fever after childbirth, as follows:

Assessment and management of fever after childbirth

General management:

- Encourage bed rest
- Ensure adequate hydration by mouth or IV
- Use a fan or tepid sponge to help decrease temperature
- If shock is suspected, immediately begin treatment.

Assessment/signs and symptoms	Appropriate management
<p>Metritis:</p> <ul style="list-style-type: none"> • Fever/chills • Lower abdominal pain • Purulent foul-smelling lochia • Tender uterus. 	<p>Metritis:</p> <ul style="list-style-type: none"> • Give a combination of antibiotics until the patient is fever-free for 48 hours <ul style="list-style-type: none"> - Ampicillin 2g IV every 8 hours - Gentamycin 80mg IV every 12 hours - Metronidazole 500mg IV every 8 hours • Remove retained placental fragments by hand or blunt wide curette if suspected • Perform subtotal hysterectomy, if uterus is necrotic or infection • Transfuse blood as necessary.
<p>Pelvic Abscess:</p> <ul style="list-style-type: none"> • Lower abdominal pain and distention • Persistent spiking fever/chills • Tender uterus. 	<p>Pelvic Abscess:</p> <ul style="list-style-type: none"> • Give a combination of antibiotics as above • Drain pus through the cul-de-sac if abscess is fluctuant <ul style="list-style-type: none"> - Perform laparotomy and drain pus, if spiking fever continues.
<p>Peritonitis:</p> <ul style="list-style-type: none"> • persistent spiking fever/chills • lower abdominal pain • Absent bowel sounds. 	<p>Peritonitis:</p> <ul style="list-style-type: none"> • Provide nasogastric suction <p>Start an IV infusion</p> <ul style="list-style-type: none"> • Give a combination of the antibiotics as above until the women are fever-free for 48 hours; <ul style="list-style-type: none"> • Abdomen incision to clean Peritoneum and perform drainage. • Perform another diagnosis by x-ray or echography to check for other causes.
<p>Breast engorgement:</p> <ul style="list-style-type: none"> - Both breasts are swollen, pain, and red - Occurs 3-5 days after delivery • Breast engorgement is an exaggeration of the lymphatic and venous 	<p>Breast engorgement:</p> <p>A. If the woman is breastfeeding</p> <ul style="list-style-type: none"> • If the baby can suckle: <ul style="list-style-type: none"> - Observe the breastfeeding - Show her how to hold the baby and help it attach effectively

<p>engorgement that occurs before lactation. It is not the result of having too much breast milk.</p>	<ul style="list-style-type: none"> - Encourage the women to breastfeed on demand, both breasts at each feeding. Newborns should be fed 8 or more times in 24 hours for as long as the baby wants • Relief measures before feeding may include: <ul style="list-style-type: none"> - Massage the women’s neck and back to warm up the reflexes - Have the women hand express some milk manually before breastfeeding and wet the nipple area with expressed breast milk to help the baby latch on properly and easily - Massage the breast • Relief measures after feeding may include: <ul style="list-style-type: none"> - Apply a cold compress to the breasts between feedings to reduce swelling and pain - Give paracetamol pill if needed - Follow up 3 days later. • If the baby is not sucking effectively, help the mother to position and attach the baby correctly <ul style="list-style-type: none"> - If after some effort by the mother and health worker, the baby is still not suckling effectively: <ul style="list-style-type: none"> ○ Teach mother how to hand express breast milk directly into the baby’s mouth ○ Teach the mother to express breast milk and cup feed her baby until suckling improves ○ Reassess the baby’s ability to suckle once a day by helping the mother to breastfeed her baby ○ Continue to feed with expressed milk by cup until the baby can suckle effectively
---	--

	<ul style="list-style-type: none"> ○ As soon as the baby can suckle effectively, the mother can stop expressing and cup feeding, and the baby can continue feeding on the breast. <p>B. If the woman is not breastfeeding for medical reasons (rare circumstances only, see page 175):</p> <ul style="list-style-type: none"> • Advise the mother to: <ul style="list-style-type: none"> - Apply cold compresses to the breasts to reduce swelling and pain - Avoid massaging or applying heat to the breasts - Avoid stimulating the nipples - Give paracetamol if needed - Follow up in three days.
<p>Nipple soreness or fissure</p> <p>Baby not well attached.</p>	<p>Nipple soreness or fissure</p> <ul style="list-style-type: none"> • Assess that the baby is stable and well attached to the breast • Encourage the mother to continue breastfeeding • Teach and help with correct positioning and attachment • Reassess after 2 feeds; if not better, teach the mother how to express breast milk from the affected breast and feed the baby by the cup, and continue breastfeeding on the healthy breast.
<p>Mastitis:</p> <ul style="list-style-type: none"> - Breast pain and tenderness. - A reddened, wedge-shaped area on breast - Temperature >38°C 	<p>Mastitis:</p> <ul style="list-style-type: none"> - Treat with antibiotics: <ul style="list-style-type: none"> . Cloxacillin 500mg by mouth four times per day for 10 days

<ul style="list-style-type: none"> - 3-4 weeks after delivery. 	<ul style="list-style-type: none"> . Or erythromycin 250mg by mouth three times per day for 10 days - Encourage the women to continue breastfeeding and apply cold compresses to the breasts between feedings - Give Ibuprofen 200-400mg orally every 8 hours or paracetamol 500-1000mg every 8 hours - If the mother is HIV+ let her breastfeed on the healthy breast. Express milk from the affected breast and discard until the fever got better - Before discharge, follow up after every breastfeeding session - Follow up in three days.
<p>Breast abscess:</p> <ul style="list-style-type: none"> - Firm, red, and very tender breast. 	<p>Breast abscess:</p> <ul style="list-style-type: none"> • Treat with antibiotics: cloxacillin 500mg by mouth four times per day for 10 days or erythromycin 250mg by mouth three times per day for 10 days • Drain the abscess: <ul style="list-style-type: none"> - General anesthesia is usually required - Make the incision radially, extending from near the areolar margin towards the periphery of the breast to avoid injury to the milk ducts - Wearing sterile, use a finger or tissue forceps to break up the pockets of pus - Loosely pack the cavity with gauze - Remove the gauze pack after 24 hours and replace with a smaller gauze pack • If there is still pus in the cavity: place a small gauze pack in the cavity and bring the edge out through the wound as a wick to facilitate drainage of any remaining pus • Encourage the woman to:

	<ul style="list-style-type: none"> - Continue breastfeeding even when there is a collection of pus - Support breasts with a binder or brassiere - Apply cold compresses to the breasts between feedings to reduce swelling or pain • Give paracetamol 500mg by mouth as needed • Follow up in three days.
--	--

2-11-4 Postpartum anemia

If the woman is pale, check for anemia, as follows:

Ask, check, record	Look, listen, feel
<ul style="list-style-type: none"> • Check record for bleeding in pregnancy, delivery, or postpartum • Have you had heavy bleeding since delivery? • Do you tire easily? • Are you breathless (shortness of breath) during routine housework? 	<ul style="list-style-type: none"> • Measure hemoglobin if having history of bleeding • Look for conjunctiva pallor • Look for palmar or fingertip pallor <ul style="list-style-type: none"> - Is it severe? - Some pallor? • Count the number of breaths in 1 minute.

Treat and advise:

<p>Severe anemia:</p> <ul style="list-style-type: none"> • Hemoglobin <7 g/dl AND/OR • Severe palmar and/or conjunctival pallor • Any pallor with any of: <ul style="list-style-type: none"> >30 breaths per minute - Woman tires easily <ul style="list-style-type: none"> - Breathless at rest. 	<p>Severe anemia:</p> <ul style="list-style-type: none"> • Initiate 60mg iron/folic acid 2 tablets daily (1 tablet during breakfast and 1 tablet during dinner daily) for 3 months. • In the case of malaria, please follow the national treatment guidelines for malaria • counsel on compliance with treatment • if < 36 weeks gestation follow up in 2 weeks then follow up every 4
--	--

	<p>weeks continuing treatment for 3 months</p> <ul style="list-style-type: none"> • If ≥ 36 weeks gestation admitted to the hospital until delivery (see national guidelines on preventing and treating anemia with irons and folic acid for pregnant and postpartum women) • Women with severe anemia need a blood transfusion.
<p>Mild to Moderate anemia:</p> <ul style="list-style-type: none"> • Hemoglobin 7-11 g/dl- OR hematocrit 21% to <30% • Mild palmar or conjunctival pallor. 	<p>Mild to Moderate anemia:</p> <ul style="list-style-type: none"> • Initiate 60mg iron/folic acid 2 tablets daily (1 tablet during breakfast and 1 tablet during dinner daily) for 14 days following up after 2 weeks • Repeat 60mg iron/folic as the above if still anemia for 3 months • In the case of malaria, please follow the national treatment guidelines for malaria • Counsel on compliance with treatment.

2-12 HIV testing at childbirth:

Some women coming to health facilities in labor does not know their HIV status or have been tested only in a previous pregnancy. If HIV-infected pregnant women with unknown HIV status at delivery are not identified, the opportunity for providing the mother and her infant with ARV drugs and other PMTCT services to reduce the risk of vertical transmission of HIV will be missed.

Therefore, HIV test information should be recorded on the mother health record to allow identification of women whose status is unknown. Hospitals and selected HCs with large numbers of deliveries and PMTCT services and OI/ART services co-located or linked, should provide HIV testing in labor to women with unknown HIV status.

At the health facility should include:

- Maternity Ward with staff trained in PMTCT and HIV rapid testing
 - Co-located HIV testing services for confirming initial reactive first assays.
- Provision should also be made for confirmatory testing at night or weekends

- The obstetrics ward with OI clinic nearby or easily accessible shall have the ART readily available for the treatment of both the mother and the newborn, and may:

Give the ART to HIV positive mother who does not receive the medicines during the pregnancy (OptionB+) and advise the woman to take further service at Pre-ART/ART Give preventive medicines to the newborn who is at high risk.

Safe Delivery for HIV Positive Women

All HIV-infected pregnant women should deliver in a health facility in order to get appropriate ARV drugs during labor and after delivery for both mother and baby - usually, a hospital with a comprehensive package of activities and a hospital co-located or linked OI/ART services. CBOs should support HIV-infected pregnant women to reach a hospital for delivery and remind HIV-infected pregnant women to always carry their mother health record and ARV drugs with them - especially as they get nearer to the time of expected delivery. Adherence to ARV drugs should be supported throughout labor and after delivery.

Universal Precautions

All health workers (including cleaning staff) should follow universal precautions on all women in labor, irrespective of their HIV status.

Standard Precautions include the following practices:

- Washing hands with soap and water after contact with blood and body fluids
- Disinfecting or sterilizing all devices and equipment used after work
- Avoiding needle recapping to reduce needle stick injuries
- Only use exclusive needles or syringe on the patient
- Safely disposing of needles in puncture- and leak-proof safety boxes
- Wearing gloves when in contact with body fluids, non-intact skin, or mucous membranes
- Covering broken skin or open wounds with waterproof dressings
- Wearing an impermeable plastic apron, long boots and eye shields during operations and deliveries
- Promptly and carefully clean spills involving blood or other body fluids
- Using appropriate systems for safe waste collection and disposal.

Adapted from: WHO/CDC. 2008. Prevention of Mother-to-Child Transmission of HIV Generic Training Package

Caesarean Section and other Approaches to Safe Delivery of HIV-positive Women. Elective caesarean section can reduce the risk of MTCT when compared to vaginal

delivery; however, the procedure carries the risk of surgical complications, including infection. **Caesarean section is therefore not recommended on a routine basis and should only be performed for standard obstetric indications.**

Some other obstetric procedures are associated with an increased risk of HIV transmission during labour and should be avoided wherever possible (see box below).

Measures to minimize the risk of HIV transmission during a vaginal delivery include the following:

- Avoid artificial rupture of membranes, unless necessary
- Avoid episiotomies unless necessary
- Minimize the use of forceps or vacuum extractors
- Minimize the risk of postpartum hemorrhage
- Practice universal precautions.

Adapted from: WHO/CDC. 2008. Prevention of Mother-to-Child Transmission of HIV Generic Training Package

Section 3: Postpartum and Newborn Care

Immediately after delivery, the woman will be checked:

- At every 15 minutes for the first one hour after placenta delivery
- At every 30 minutes for the second hour
- At every hour for the third and fourth hour
- At every four hours for the first day
- Every day until the second and third day after delivery or before discharge from the health facility. It is the postpartum checkup before discharge from the health facility (PNC0).

After discharge from the health facility, a postpartum checkup should be conducted to provide periodic healthcare package for mother and newborn for three times and continue to checkup the baby for 7 times. Therefore, there is 10 times checkup as follows:

1. First checkup: day 7 after delivery (Both mother and newborn)
2. Second checkup: day 14 after delivery (Both mother and newborn)
3. Third checkup: baby reaches the age of 1 month and a half (Both mother and newborn)
4. Fourth checkup: baby reaches the age of 2 months and a half (newborn only)
5. Fifth checkup: baby reaches the age of 3 months and a half (newborn only)
6. Sixth checkup: baby reaches the age of 6 months (newborn only)
7. Seventh checkup: baby reaches the age of 9 months (newborn only)
8. Eight checkups: baby reaches the age of 12 months (newborn only)
9. Ninth checkup: baby reaches the age of 18 months (newborn only)
10. Tenth checkup: baby reaches the age of 24 months (newborn only)

Another necessary checkup will be conducted when there is problem-related to mother and newborn health.

Note: Woman and newborn healthcare package using health equity fund for poor woman for the first 1000 days including: at least fourth times pregnancy care including postpartum care and the care of baby until the baby reaches the age of 24 months, at least 10 checkups.

Normal delivery includes postpartum care before discharge for home should be conducted at the health facility for 3 days to ensure the safety of mother and newborn. After discharging from the health facility, mother and newborn will receive the first, second and third care service and continue on monitoring the development of newborn until it reaches 2 years at the health facility (Health center or referral hospital) as per schedule mentioned the above.

3-1 Assessment and care of the postpartum woman until the baby turns 2 years old

Assess the woman after discharge from a health facility or after a home delivery, as follows:

First check-up after delivery, 7 days after delivery (for both mother and baby):

Ask, check, record	Look, listen, feel
--------------------	--------------------

<ul style="list-style-type: none"> • When and where did you deliver? • Have you experience any pain or fever? • Have there been any bleeding since delivery? • Do you have any problem with passing urine? • How do your breasts feel? • Do you have any other concerns? • Check records: <ul style="list-style-type: none"> - Any complications during pregnancy and delivery? - Receiving any treatments? - HIV or syphilis status, if known beforehand? • Ask the mother about how she feeds and looks after the baby. • Question the mother about iron capsule and anthelmintic use • Question about baby health • Ask for a vaccination card from the mother and monitor the tetanus vaccination. 	<ul style="list-style-type: none"> • Check for vital signs (measure blood pressure, pulse, temperature, respiratory rate) • Examine breast and nipple for mastitis, fraction, or redness on the breast • Feel uterus; is it round and hard? Compare to pubis, is the uterus involution appropriate? (ensure that the bladder is empty) • look at vulva and perineum for tears, swelling, pus or dribbling urine; • look at pad for bleeding and lochia (smell and amount) • Bring mother to register her name at ART site to get the ART medicine (in case, she has never get any treatment) and send baby at risk to register at PAC • Check the baby's health (weighing, measuring temperature, pressing pulse, counting breath beats). Exclusive Breastfeeding, helping mother breastfeeds baby, put baby on mother's breast • Check the baby fitness for the signs of inborn diseases or birth defect by using monitoring device from 0 to 28 days • Check for dangerous signs, including torpor, seizure, weakness, fast or slow breath, severe chest indrawing when breathing in, significantly-low temperature (below 35°C), fever (38°C or over), eye with tear or pus, abnormal skin color changes, more than 10 blisters, indrawing and Bulging fontanel, tense stomach, poor feeding, struggle feeding and no feeding, navel bleeding or pus. If there is any dangerous sign, immediately send the baby to hospital • Counselling/educating on physical hygiene, washing hands before eating/breastfeeding/touching the baby, mother nutrition, continuing to breastfeed
---	---

	<p>baby, take care of navel, postpartum dangerous signs for mother and newborn, family planning.</p> <ul style="list-style-type: none"> • Make appointment for the 2nd postpartum checkup and remind the mother of bringing the mother health record card, child health record card, and TT vaccine card • Record the information and other services provided into the mother's health record and book.
--	---

The 2nd postpartum checkup after 14 day-delivery (Both mother and newborn):

Ask, check and record	Watch, listen, feel
<ul style="list-style-type: none"> • When did you deliver your baby? where? • Have you got any pain or fever? • Have you got vaginal bleeding after delivery? • Do you have any difficulty on passing urine? • How is your breast? • Do you have any concern? • Check the record: <ul style="list-style-type: none"> - Complication during pregnancy and delivery? - Are you under the treatment of any disease? - HIV-syphilis condition? • Question the mother about how she feeds and looks after the baby • Question the mother about folic acid and • Ask for vaccination card from the mother and monitor the tetanus vaccination 	<ul style="list-style-type: none"> • Take vital sign (blood pressure, pulse, temperature, breath beats) • Reevaluate paleness/folic acid use • If woman did not come for the first check up after delivery, bring mother to register her name at ART site to get the ART medicine (in case, she has never get any treatment) and send baby at risk to register at PAC • Check the baby's health (weighing, measuring temperature, pressing pulse, counting breath beats). Exclusive Breastfeeding, help mother to position and attached the baby to mother's breast while feeding, instruct mother how to express breastmilk , and how to store breastmilk. • Check the baby fitness for the signs of inborn diseases or birth defect by using a monitoring device from 0 to 28 days • Check for dangerous signs, including torpor, seizure, weakness, fast or

<ul style="list-style-type: none"> • Ask for the baby health record card to monitor the vaccination and development. 	<p>slow breath, severe chest indrawing when breathing in, significantly-low temperature (below 35°C), fever (38°C or over), eye with tear or pus, abnormal skin color changes, more than 10 blisters, indrawing and Bulging fontanel, tense stomach, poor feeding, and no feeding, navel bleeding or pus. If there is any dangerous sign, immediately send the baby to hospital</p> <ul style="list-style-type: none"> • Counselling/educating: physical hygiene, washing hands before eating/breastfeeding/touching the baby, mother nutrition, continuing to breastfeed baby, take care of navel, postpartum dangerous signs for mother and newborn, family planning • Make appointment for the 3rd postpartum checkup and remind the mother of bringing the mother health record card, child health record card, and TT vaccine card • Record the information and other services provided into the mother's health record and book.
---	---

The 3rd postpartum checkup when the baby reaches the age of 1 month and a half (Both mother and newborn):

Ask, check and record	Watch, listen, feel
<ul style="list-style-type: none"> • When did you deliver your baby? where? • Have you got any pain or fever? • Have you got your menstrual period? • • How is your breast? • Do you have any concern? • Check the record: 	<ul style="list-style-type: none"> • Take vital sign (blood pressure, pulse, temperature, breath beats) • Reevaluate paleness/folic acid use • If woman did not come for the second check up after delivery, bring mother to register her name at ART site to get the ART medicine (in case, she has never get any treatment) and send baby at risk to get the cotrimoxazole

<ul style="list-style-type: none"> - Complication during pregnancy and delivery? - Are you under the treatment of any disease? - HIV-syphilis condition? • Question the mother about how she eats and looks after the baby • Question the mother about iron capsule. • Question about baby health • Ask for vaccination card from the mother and monitor the tetanus vaccination. 	<p>and conduct the first DNA-PCR test at PAC</p> <ul style="list-style-type: none"> • Give DPT-HepB-Hib1, OPV1, PVC1 to baby and give tetanus vaccine to mother (if due). • Check the baby's health (weighing, measuring temperature, pressing pulse, counting breath beats). Exclusive Breastfeeding, help mother to position and attached the baby to mother's breast while feeding, instruct mother how to express breastmilk, and how to store for feeding. • Check for dangerous signs, including torpor, seizure, weakness, fast or slow breath, severe chest indrawing when breathing in, significantly-low temperature (below 35°C), fever (38°C or over), eye with tear or pus, abnormal skin color changes, more than 10 blisters, indrawing and Bulging fontanel, tense stomach, poor feeding, struggle feeding and no feeding, waist, both swollen foets. If there is any dangerous sign as mentioned, immediately send the baby to hospital • Checking baby's health, weighting and monitoring child growth in the weight grow table comparing to age in child health record: <ul style="list-style-type: none"> - The green weight calibration suggests that the child is healthy - The orange weight calibration suggest that the bay is underweight compared to the age (underweight at birth). It is necessary to educate how the baby is fed (100%
--	---

	<p>breastfeeding, frequently at least eight times)</p> <ul style="list-style-type: none"> - The red weight calibration suggests that the baby is significantly underweight compared to the age (decreased weight), so it is necessary measure the baby's height to evaluate the weight against height (use SD standard list): <ul style="list-style-type: none"> ✓ Weight against height with SD standard between <-2 to -3 suggests that the baby is in moderately malnutrition, so it is necessary to educate how the baby is fed (100% breastfeeding, frequently at least eight times), and continue to check for diseases ✓ Weight against height with SD standard < -3 suggests that the baby is in severe malnutrition, send the baby to a facility where severe malnutrition care and treatment services are available (hospital or health center) • Counselling/educating: physical hygiene, washing hands before eating/breastfeeding/touching the baby, mother nutrition (no fasting or using herbal wine, continuing to breastfeed baby, postpartum dangerous signs for mother and newborn • Counselling, advising, and providing modern birth contraception method as per necessary and need
--	---

	<ul style="list-style-type: none"> • Make appointment for the 4th postpartum checkup and remind the mother of bringing the mother health record card, child health record card, and TT vaccine card. • Record the information and other services provided into the mother's health record and book.
--	---

The 4th postpartum checkup when the baby reaches the age of 2 months and a half (newborn only):

Ask, check and record	Watch, listen, feel
<ul style="list-style-type: none"> • Question the mother about how she eats and looks after the baby • Ask for vaccination card from the mother and monitor the tetanus vaccination • Ask for the baby health record card to monitor the vaccination and development. 	<ul style="list-style-type: none"> • Give DPT-HepB-Hib1, OPV2, PVC2 to baby and give tetanus vaccine to mother (if due) • Check the baby's health (weighing, measuring temperature, pressing pulse, counting breath beats). Exclusive Breastfeeding until the baby reaches 6 months and remind mother on how to express milk and how to store it and feed baby • Check for dangerous signs, including torpor, seizure, weakness, fast or slow breath, severe chest indrawing when breathing in, significantly-low temperature (below 35°C), fever (38°C or over), eye with tear or pus, abnormal skin color changes, more than 10 blisters, indrawing and Bulging fontanel, tense stomach, poor feeding, struggle feeding and no feeding, waist, both swollen foots. If there is any dangerous sign as mentioned, immediately send the baby to hospital • Checking baby's health, weighting and monitoring child growth in the

	<p>weight grow table comparing to age in child health record:</p> <ul style="list-style-type: none">- The green weight calibration suggests that the child is healthy- The orange weight calibration suggest that the bay is underweight compared to the age (underweight at birth). It is necessary to educate how the baby is fed (100% breastfeeding, frequently at least eight times)- The red weight calibration suggests that the baby is significantly underweight compared to the age (decreased weight), so it is necessary measure the baby's height to evaluate the weight against height (use SD standard list):<ul style="list-style-type: none">✓ Weight against height with SD standard between <-2 to -3 suggests that the baby is in moderately malnutrition, so it is necessary to educate how the baby is fed (100% breastfeeding, frequently at least eight times), and continue to check for diseases✓ Weight against height with SD standard < -3 suggests that the baby is in severe malnutrition, send the baby to a facility where severe malnutrition care and treatment services are available (hospital or health center)
--	---

	<ul style="list-style-type: none"> • Counselling/educating: washing hands before eating/breastfeeding/ touching the baby, mother nutrition, breastfeeding baby, postpartum dangerous signs for mother and newborn and disease prevention • Remind her mother birth contraception • Make appointment for the 5th postpartum checkup and remind the mother of bringing the mother health record card, child health record card, and TT vaccine card • Record the information and other services provided into the mother's health record and book.
--	--

The 5th postpartum checkup when the baby reaches the age of 3 months and a half (newborn only):

Ask, check and record	Watch, listen, feel
<ul style="list-style-type: none"> • Question the mother about how she eats and looks after the baby • Ask for vaccination card from the mother and monitor the tetanus vaccination • Ask for the baby health record card to monitor the vaccination and development. 	<ul style="list-style-type: none"> • Give DPT-HepB-Hib3, OPV3, PVC3, IPV to baby and give tetanus vaccine to mother (if due) • Check the baby's health (weighing, measuring temperature, pressing pulse, counting breath beats). Exclusive Breastfeeding until the baby reaches 6 months and remind mother on how to express milk and how to store it and how to feed baby • Check for dangerous signs, including torpor, seizure, weakness, fast or slow breath, severe chest indrawing when breathing in, significantly-low temperature (below 35°C), fever (38°C or over), eye with tear or pus, abnormal skin color changes, more than 10 blisters, indrawing and Bulging fontanel,

	<p>tense stomach, poor feeding, struggle feeding and no feeding, waist, both swollen feet.</p>
	<p>If the danger signs appear, refer to hospital immediately</p> <ul style="list-style-type: none"> • Checking baby's health, weighting and monitoring child growth in the weight grow table comparing to age in child health record: <ul style="list-style-type: none"> - The Green weight calibration suggests that the child is healthy - The orange weight calibration suggest that the bay is underweight compared to the age (underweight at birth). It is necessary to educate how the baby is fed (100% breastfeeding, frequently at least eight times) - The red weight calibration suggests that the baby is significantly underweight compared to the age (decreased weight), so it is necessary measure the baby's height to evaluate the weight against height (use SD standard list): <ul style="list-style-type: none"> ✓ Weight against height with SD standard between <-2 to -3 suggests that the baby is in moderately malnutrition, so it is necessary to educate how the baby is fed (100% breastfeeding, frequently at least eight times), and continue to check for diseases ✓ Weight against height with SD standard < -3 suggests that the baby is in severe malnutrition, send the baby to a facility where severe

	<p>malnutrition care and treatment services are available (hospital or health center)</p> <ul style="list-style-type: none"> • Check the baby fitness for the signs of inborn diseases or birth defect by using monitoring device from one month to five years • Counsel/advise on hand washing before meal/breastfeeding/touching baby mother nutrition. Provide only breastfeeding milk for baby until the baby reaches 6 months and continue to breastfeed until the baby reaches two years. Danger signs and other infection prevention • Advise the mother of birth contraception • Make appointment for the 6th postpartum checkup and remind the mother of bringing the baby health record card • Record the information and other services provided into the mother's health record and book.
--	---

The 6th postpartum checkup when the baby reaches the age of 6 months (child health checkup):

Ask, check and record	Watch, listen, feel
<ul style="list-style-type: none"> • Question the mother about how she eats and looks after the baby • Ask for vaccination card from the mother and monitor the tetanus vaccination. • Ask for the baby health record card to monitor the vaccination and development. 	<ul style="list-style-type: none"> • Give measles/ rubeola 2 vaccines MR0 • Give vitamin A 1000,000 UI (2 times/year) to baby and give tetanus vaccine to mother (if it is the time) • Check the baby's health (weighing, measuring temperature, pressing pulse, counting breath beats),

	<p>continue to breastfeed/feed the baby with mother milk until the baby reaches the age of two years and give supplementary meals (nutritious porridge)</p> <ul style="list-style-type: none"> • Check for dangerous signs, including torpor, seizure, weakness, fast or slow breath, severe chest indrawing when breathing in, significantly-low temperature (below 35OC), fever (38OC or over), eye with tear or pus, abnormal skin color changes, more than 10 blisters, indrawing and Bulging fontanel, tense stomach, poor feeding, struggle feeding and no feeding, waist, both swollen foots. If there is any dangerous sign as mentioned, immediately send the baby to hospital • Check for paleness of the baby on his/her palm/inner eye lid. If it is pale, it is a moderate paleness, so treat him/her with ionic capsule folic acid 1/4 capsule per day for two months by making an appointment every two weeks • Check the baby's health, weigh and monitor the baby development in the weight/height growth table in the baby health record card: <ul style="list-style-type: none"> - The green weight calibration suggests that the child is healthy - The orange weight calibration suggest that the baby is underweight compared to the age (underweight at birth). It is necessary to educate how the baby is fed (100%
--	---

	<p>breastfeeding, frequently at least eight times)</p> <ul style="list-style-type: none"> - The red weight calibration suggests that the baby is significantly underweight compared to the age (decreased weight), so it is necessary measure the baby's height to evaluate the weight against height (use SD standard list): ✓ Weight against height with SD standard between <-2 to -3 suggests that the baby is in moderately malnutrition, so it is necessary to educate how the baby is fed (100% breastfeeding, frequently at least eight times), and continue to check for diseases, continue to measure the circumference of the left upper arm (MUAC) to detect severe malnutrition: <ul style="list-style-type: none"> - If $MUAC \geq 11.5\text{cm}$, the moderate malnutrition remains, so the raising education is required - If $MUAC \leq 11.5\text{cm}$, send the baby to a facility where malnutrition care and treatment services are available - Weight against height with SD standard < -3 suggests that the baby is in severe malnutrition, send the baby to a facility where severe malnutrition care and treatment services are available (hospital or health center) • Check the baby fitness for the signs of inborn diseases or birth defect by
--	--

	<p>using monitoring device from one month to five years</p> <ul style="list-style-type: none"> • Counselling/educating: washing hands before eating/breastfeeding/touching the baby, continuing to breastfeed/feed the baby with mother milk until the baby reaches the age of two years and give supplementary meals (nutritious porridge), checking for dangerous signs and infection prevention • Advise the mother of birth contraception • Make appointment for the 7th postpartum checkup and remind the mother of bringing the baby health record card • Record the information and other services provided into the mother's health record and book.
--	---

The 7th postpartum checkup when the baby reaches the age of 9 months (child health checkup):

Ask, check and record	Watch, listen, feel
<ul style="list-style-type: none"> • Question the mother about how she eats and looks after the baby • Ask for vaccination card from the mother and monitor the tetanus vaccination • Ask for the baby health record card to monitor the vaccination and development. 	<ul style="list-style-type: none"> • Give the first measles/ rubeola vaccines (MR1) and JE vaccine • Check the baby's health (weighing, measuring temperature, pressing pulse, counting breath beats), continue to breastfeed/feed the baby with mother milk until the baby reaches the age of two years and give supplementary meals (nutritious porridge) and other meal/snack • Check for dangerous signs, including torpor, seizure, weakness, fast or slow breath, severe chest indrawing when breathing in,

	<p>significantly-low temperature (below 35OC), fever (38OC or over), eye with tear or pus, abnormal skin color changes, more than 10 blisters, indrawing and Bulging fontanel, tense stomach, poor feeding, struggle feeding and no feeding, waist, both swollen foets. If there is any dangerous sign as mentioned, immediately send the baby to hospital</p> <ul style="list-style-type: none"> • Check for paleness of the baby on his/her palm/inner eye lid. If it is pale, it is a moderate paleness, so treat him/her with ionic capsule folic acid ¼ capsule per day for two months by making an appointment every two weeks • Check the baby's health, weigh and monitor the baby development in the weight/height growth table in the baby health record card: <ul style="list-style-type: none"> - The green weight calibration suggests that the child is healthy - The orange weight calibration suggest that the bay is underweight compared to the age (underweight). It is necessary to educate how the baby is fed (100% breastfeeding, frequently at least six times) - The red weight calibration suggests that the baby is significantly underweight compared to the age (decreased weight), so it is necessary measure the baby's height to evaluate the weight against height (use SD standard list): <ul style="list-style-type: none"> ✓ Weight against height with SD standard between <-2 to -3 suggests that the baby is in moderately malnutrition, so it is
--	---

	<p>necessary to educate how the baby is fed (100% breastfeeding, frequently at least eight times), and continue to check for diseases, continue to measure the circumference of the left upper arm (MUAC) to detect severe malnutrition:</p> <ul style="list-style-type: none"> - If MUAC is ≥ 11.5cm, the moderate malnutrition remains, so the raising education is required - If MUAC ≤ 11.5cm, send the baby to a facility where malnutrition care and treatment services are available <p>✓ Weight against height with SD standard < -3 suggests that the baby is in severe malnutrition, send the baby to a facility where severe malnutrition care and treatment services are available (hospital or health center)</p> <ul style="list-style-type: none"> • Counselling/educating: washing hands before eating /breastfeeding/touching the baby, continuing to breastfeed/feed the baby with mother milk until the baby reaches the age of two years and give supplementary meals (nutritious porridge), checking for dangerous signs and infection prevention • Advise the mother of birth contraception • Make appointment for the 8th postpartum checkup and remind the mother of bringing the baby health record card • Record the information and other services provided into the mother's health record and book.
--	--

**The 8th postpartum checkup when the baby reaches the age of 12 months
(baby health checkup):**

Question and review record	Watch, listen and touch
<ul style="list-style-type: none"> • Question the mother about how she eats and looks after the baby • Ask for vaccination card from the mother and monitor the tetanus vaccination • Ask for the baby health record card to monitor the vaccination and development. 	<ul style="list-style-type: none"> • Check for the provision of supplementary meals and the intake of preventive A nutrition 200,000 IU and a dose of anthelmintic (two times/year) • Check the baby's health (weighing, measuring temperature, pressing pulse, counting breath beats), continue to breastfeed/feed the baby with mother breastmilk until the baby reaches the age of two years and give complementary meals (nutritious porridge) and extra meals/snacks • Check for dangerous signs, including torpor, seizure, weakness, fast or slow breath, severe chest indrawing when breathing in, significantly-low temperature (below 35C), fever (38C or over), tense stomach, both swollen foets. If there is any dangerous sign as mentioned, immediately send the baby to hospital • Check for paleness of the baby on his/her palm/inner eye lid. If it is pale, it is a moderate paleness, so treat him/her with ionic capsule folic acid 1/2 capsule per day for two months by making an appointment every two weeks • Check the baby's health, weigh and monitor the baby development in the weight/height growth table in the baby health record card: <ul style="list-style-type: none"> - The green weight calibration suggests that the child is healthy - The orange weight calibration suggest that the bay is underweight compared to the age (underweight at birth). It is necessary to educate how the baby is fed (100% breastfeeding, frequently at least three times)

	<ul style="list-style-type: none"> - The red weight calibration suggests that the baby is significantly underweight compared to the age (decreased weight), so it is necessary measure the baby's height to evaluate the weight against height (use SD standard list): <ul style="list-style-type: none"> ✓ Weight against height with SD standard between <-2 to -3 suggests that the baby is in moderately malnutrition, so it is necessary to educate how the baby is fed (100% breastfeeding, frequently at least eight times), and continue to check for diseases, continue to measure the circumference of the left upper arm (MUAC) to detect severe malnutrition: <ul style="list-style-type: none"> - If MUAC is $\geq 11.5\text{cm}$, the moderate malnutrition remains, so the raising education is required. - If MUAC $\leq 11.5\text{cm}$, send the baby to a facility where malnutrition care and treatment services are available. - Weight against height with SD standard < -3 suggests that the baby is in severe malnutrition, send the baby to a facility where severe malnutrition care and treatment services are available (hospital or health center) • Check the baby fitness for the signs of inborn diseases or birth defect by using monitoring device from one month to five years • Counselling/educating: washing hands before eating/breastfeeding/touching the baby, continuing to breastfeed/feed the baby with mother breastmilk until the baby reaches the age of two years and give supplementary meals (nutritious porridge), checking for dangerous signs and infection prevention
--	--

	<ul style="list-style-type: none"> • Advise the mother of birth contraception • Make appointment for the 9th postpartum checkup and remind the mother of bringing the baby health record card • Record the information and other services provided into the mother's health record and book.
--	--

The 9th postpartum checkup when the baby reaches the age of 18 months (baby health checkup):

Ask, check and record	Watch, listen, feel
<ul style="list-style-type: none"> • Question the mother about how she feeds and looks after the baby • Ask for vaccination card from the mother and monitor the tetanus vaccination • Ask for the baby health record card to monitor the vaccination and development. 	<ul style="list-style-type: none"> • Give measles/rubeola 2 vaccines (MR2) • Check for the provision of supplementary meals and the intake of preventive A nutrition 200,000 IU and a dose of anthelmintic (two times/year) • Check the baby's health (weighing, measuring temperature, pressing pulse, counting breath beats), continue to breastfeed/feed the baby with mother milk until the baby reaches the age of two years and give supplementary meals (nutritious porridge) and extra meals/snacks • Check for dangerous signs, including torpor, seizure, weakness, fast or slow breath, severe chest indrawing when breathing in, significantly-low temperature (below 35°C), fever (38°C or over), tense stomach, both swollen foets. If there is any dangerous sign as mentioned, immediately send the baby to hospital • Check for paleness of the baby on his/her palm/inner eye lid. If it is pale, it is a moderate paleness, so treat him/her with ironic capsule folic acid ½ capsule per day for two months by making an appointment every two weeks

	<ul style="list-style-type: none"> • Check the baby's health, weigh and monitor the baby development in the weight/height growth table in the baby health record card: <ul style="list-style-type: none"> - The green weight calibration suggests that the child is healthy - The orange weight calibration suggest that the bay is underweight compared to the age (underweight at birth). It is necessary to educate how the baby is fed (100% breastfeeding, frequently at least three times) - The red weight calibration suggests that the baby is significantly underweight compared to the age (decreased weight), so it is necessary measure the baby's height to evaluate the weight against height (use SD standard list): <ul style="list-style-type: none"> ✓ Weight against height with SD standard between <-2 to -3 suggests that the baby is in moderately malnutrition, so it is necessary to educate how the baby is fed (100% breastfeeding, frequently at least eight times), and continue to check for diseases, continue to measure the circumference of the left upper arm (MUAC) to detect severe malnutrition: <ul style="list-style-type: none"> - If $MUAC \geq 11.5cm$, the moderate malnutrition remains, so the raising education is required. - If $MUAC \leq 11.5cm$, send the baby to a facility where malnutrition care and treatment services are available - Weight against height with SD standard < -3 suggests that the baby is in severe malnutrition, send the baby to a facility where severe malnutrition care and treatment services are available (hospital or health center)
--	--

	<ul style="list-style-type: none"> • Check the baby fitness for the signs of inborn diseases or birth defect by using monitoring device from one month to five years • Counselling/educating: washing hands before eating/breastfeeding/touching the baby, continuing to breastfeed/feed the baby with mother milk until the baby reaches the age of two years and give complementary meals (nutritious porridge), checking for dangerous signs and infection prevention • Advise the mother of birth contraception • Make appointment for the 9th postpartum checkup and remind the mother of bringing the baby health record card • Record the information and other services provided into the mother's health record and book.
--	--

The 10th postpartum checkup when the baby reaches the age of 24 months (child health checkup):

Ask, check and record	Watch, listen, feel
<ul style="list-style-type: none"> • Question the mother about how she feeds and looks after the baby • Ask for vaccination card from the mother and monitor the tetanus vaccination • Ask for the baby health record card to monitor the vaccination and development. 	<ul style="list-style-type: none"> • Check for the provision of supplementary meals and the intake of preventive A nutrition 200,000 IU and a dose of anthelmintic (two times/year) • Check the baby's health (weighing, measuring temperature, pressing pulse, counting breath beats) • Check baby diet (main meal, snack) • Check for dangerous signs, including torpor, seizure, weakness, fast or slow breath, severe chest indrawing when breathing in, significantly-low temperature (below 35C), fever (38C or over), tense stomach, both swollen feet.

	<p>If there is any dangerous sign as mentioned, immediately send the baby to hospital</p> <ul style="list-style-type: none"> • Check for paleness of the baby on his/her palm/inner eye lid. If it is pale, it is a moderate paleness, so treat him/her with iron capsule folic acid ½ capsule per day for two months by making an appointment every two weeks • Check the baby’s health, weigh and monitor the baby development in the weight/height growth table in the baby health record card: <ul style="list-style-type: none"> - The green weight calibration suggests that the child is healthy - The orange weight calibration suggest that the baby is underweight compared to the age (underweight at birth). It is necessary to educate how the baby is fed (100% breastfeeding, frequently at least three times) - The red weight calibration suggests that the baby is significantly underweight compared to the age (decreased weight), so it is necessary measure the baby’s height to evaluate the weight against height (use SD standard list): ✓ Weight against height with SD standard between <-2 to -3 suggests that the baby is in moderately malnutrition, so it is necessary to educate how the baby is fed (100% breastfeeding, frequently at
--	---

	<p>least eight times), and continue to check for diseases, continue to measure the circumference of the upper arm (MUAC) to detect severe malnutrition:</p> <ul style="list-style-type: none"> - If MUAC is $\geq 11.5\text{cm}$, the moderate malnutrition remains, so the raising education is required - If MUAC $\leq 11.5\text{cm}$, send the baby to a facility where malnutrition care and treatment services are available. (hospital or health center) - Weight against height with SD standard < -3 suggests that the baby is in severe malnutrition, send the baby to a facility where severe malnutrition care and treatment services are available (hospital or health center) <ul style="list-style-type: none"> • Conduct rapid HIV test for baby/at risk baby, if the result is positive, stop using Contrimoxazol • Check the baby fitness for the signs of inborn diseases or birth defect by using monitoring device from one month to five years • Counselling/educating: washing hands before eating/breastfeeding/touching the baby, continuing to breastfeed/feed the baby with mother breastmilk until the baby reaches the age of two years and give complementary meals (nutritious porridge), checking for dangerous signs and infection prevention • Advise the mother of birth contraception
--	--

	<ul style="list-style-type: none"> Record the information and other services provided into the mother's health record and book.
--	--

After normal delivery, mother is healthy there isn't any problem noted:

- Make sure woman and family know what to prepare and when to seek care (see p.170)
- Encourage mother and baby to use insecticide-treated net (if they are living in the malaria area)
- Make an appointment to have regular checkup and advise mother to register her baby's name at the commune-sangkat office.

If positive for syphilis test:

- For mother (see the treatment as during ANC service)
- For newborn: Give Benzathine penicillin G 50,000 units/kg IM a single dose to newborn who has just born from a syphilis positive mother whether she has or has not received any treatment for syphilis during pregnancy or even the newborn has no sign of syphilis at birth. Conduct RPR qualitative (RPR) test for newborn in order to keep the first test result (baseline test) to compare with the follow up test which will be conducted on the 3rd, 6th and 9th month (if the 6th month test remains positive) to ensure the effectiveness of syphilis at birth treatment for newborn. Continue monitoring baby
- Encourage woman to bring her partner for treatment
- Advise on correct and consistent use of condoms to prevent new infection. For detail information about the postpartum care service, see page 141.

3-2 Respond to observed signs and volunteered problems

3-2-1 Elevated Diastolic Blood Pressure

If the woman has had high blood pressure, assess and provide care as follows:

Look, Listen, Feel	Sign	Treat and Advise
<ul style="list-style-type: none"> History of severe pre-eclampsia or eclampsia in pregnancy, delivery or after delivery If diastolic blood pressure is ≥ 90mmHg, repeat after 15 minutes resting. 	<ul style="list-style-type: none"> Diastolic blood pressure ≥ 110mmHg 	<p>Severe hypertension:</p> <ul style="list-style-type: none"> give suitable anti-hypertension medicine (see p.40)
	<ul style="list-style-type: none"> Diastolic blood pressure ≥ 90mmHg on 2 readings 	<p>Moderate hypertension:</p> <ul style="list-style-type: none"> Reassess in 1 week if hypertension persist, continue the treatment

		and give other advices if necessary.
--	--	--------------------------------------

Note: Advise the mother to consult with general physician if necessary.

3-2-2 HIV status

If the woman has not been previously tested for HIV, provide counseling and care, as follows:

Ask, check record	Look, listen, feel
<ul style="list-style-type: none"> • Provide key information on HIV – what it is, how it is transmitted, advantages of knowing HIV status • Explain about HIV testing and counseling, including confidentiality of results • Ask the woman: <ul style="list-style-type: none"> - Have you been tested for HIV? - If not, tell her that she will be tested for HIV unless she refuses - If yes, check result (explain to the woman that she has a right not to disclose result) if the result is positive, then ask: <ul style="list-style-type: none"> - Are you taking any ARV treatment? - Check treatment plan - Has partner been tested for HIV? 	<ul style="list-style-type: none"> • With the woman permission, perform a rapid HIV test

Treat and Advise:

HIV Positive:

- Take the woman and her child to get the opportunistic infection treatment, antiretroviral therapy (Pre-ART/ART), and children's HIV treatment service (see National PMTCT guideline) as soon as possible (in 6 weeks). Consult on contraceptive measures.

HIV Negative:

- Counsel on the importance of staying negative by practicing safer sex, including use of condoms
- Counsel on benefits of testing to the partner, unknown HIV status (the woman refuses the test or is not willing to disclose test results)
- Counsel on safe sex, including use of condoms
- Counsel on benefits of testing to the partner.

3-2-3 Dribbling Urine

If the woman has dribbling or leaking urine, provide care as follows.

Ask, Check Record	Look, Listen, Feel
<ul style="list-style-type: none"> ask the woman when the problem began Ask for delivery history: <ul style="list-style-type: none"> Labor duration Labor with intervention Pushing duration. 	<ul style="list-style-type: none"> Look for dribbling or leaking urine Look for friction marks on the vaginal area that can happen during the pushing stage of labor Dribs from the bladder to the vagina is a diagnosis that should be considered Check the urinary infection in the lower part.

☆ Treat and Advice

Urinary Incontinence: Treat by antibiotic

- Take Amoxicillin 500mg three times/day for 5 days or take Trimethoprim/ Sulfamethoxazole (80/400mg for each pill) two pills each time and two times, if the woman still dribbling urine more than 1 week, refer the woman to specialist.

3-2-4 Pus or perineal pain

If the woman has perineal pain, provide care as follows.

Ask, check, record	Look, listen, feel	Treat and advise
<ul style="list-style-type: none"> Ask the woman when problem began; 	<ul style="list-style-type: none"> look for swelling of vulva or perineum 	<p>Perineal trauma (excessive swelling of vulva or perineum): if there is any infection, see the management below:</p>
	<ul style="list-style-type: none"> look for perineal swelling look for pus in perineum pain. 	<p>Perineal infection or pain (pus in perineum, pain in perineum):</p> <ul style="list-style-type: none"> remove sutures if present clean wound. <p>Treat with antibiotic:</p> <ul style="list-style-type: none"> Take Amoxicillin 500mg orally 3 times per day for 5 days or take

		<p>Trimethoprim / Sulfamethoxazole (80/400mg for each pill) two pills each time and two times</p> <ul style="list-style-type: none"> • Consult and discuss about care and hygiene. • Administer Paracetamol for pain and follow up for 2 days.
--	--	--

3-2-5 Feeling unhappy or crying

If the woman is unhappy or cries easily, assess, and manage as follows:

Ask, check, record	Treat and advise
<ul style="list-style-type: none"> • How have you been feeling recently? • Have you been in low spirits? • Have you been able to enjoy the things you usually enjoy? • Have you had your usual level of energy or have you been feeling tired? • How has your sleep been? • Have you been able to concentrate (i.e., On radio programs, newspaper articles)? 	<p>Postpartum Depression (usually after first week) 2 or more symptoms during same 2 weeks period: inappropriate guilt or negative feelings toward self. Cries easily, decreased interest or pleasure, feels tired, agitated all the time, disturbed sleep, diminished ability to think, marked loss of appetite, then the service provider must:</p> <ul style="list-style-type: none"> • Provide emotional support • Refer woman to a mental hospital. <p>Postpartum Blues (usually in first week) any of the above symptoms for less than 2 weeks, the service provider must:</p> <ul style="list-style-type: none"> • Assure the woman that this is common • Listen to her concerns • Give emotional support • Counsel partner and family to provide support to the woman • Follow up in 2 weeks, if no improvement, refer woman to a mental hospital.

3-2-6 Vaginal discharge after delivery

If the women have vaginal discharge, access provide care and following:

Ask, check, record	Look, listen, feel
--------------------	--------------------

<p>Ask for:</p> <ul style="list-style-type: none"> - Vaginal discharge? - Itching at vulva? - Any problems on passing urine <ul style="list-style-type: none"> - pus - burning • If partner is present, ask for urethral discharge or burning on urination • If partner is not present, explain woman about important of notification and treatment to prevent reinfection • Make appointment with woman and her partner(s) if possible. 	<p>Examine -abnormal vaginal discharge (by using two fingers to separate labial)</p> <ul style="list-style-type: none"> - Quantity - Color - Odor. - Use speculum to examine the condition of the discharge inside and clean with antiseptic solution.
---	--

Treatment and advice

Vaginal discharge can be the result of:

Possible Gonorrhoea or Chlamydia infection (abnormal vaginal discharge, especially cervical discharge and partner has urethral discharge or burning on passing urine).

- Give appropriate oral antibiotics to woman and partner according to the National Guideline on STI/RTI case management
- Counsel on safer sex including consistent use of condoms.

Possible Candida infection (curd-like vaginal discharge and/or intense vulva itching)

- Give Clotrimazole according to the National Guideline on STI/RTI
- Counsel on safer sex including consistent use of condoms.

Possible bacterial or trichomonas infection (abnormal vaginal discharge, frothy discharge with foul smell)

- Treat according to the National Guideline on STI/RTI case management
- Counsel on safer sex including consistent use of condoms.

3-3 Preventive Measures

Advise and counsel the woman about preventive measures, as follows.

Assess, check record	Intervention
<ul style="list-style-type: none"> • Check tetanus toxoid (TT) immunization 	<ul style="list-style-type: none"> • Give tetanus toxoid when it is due

	<ul style="list-style-type: none"> • Give one tablet of mebendazole (500mg)
<ul style="list-style-type: none"> • Check woman's supply of prescribed dose of iron/folic acid 	<ul style="list-style-type: none"> • Give 42-day supply of iron/folic acid and counsel on compliance
<ul style="list-style-type: none"> • Counsel and advise all women. 	<ul style="list-style-type: none"> • Encourage sleeping under insecticide treated mosquito net • Advise on postpartum care • Counsel on nutrition (see p.171) • Counsel on birth spacing and family planning (see p.171) • Counsel on breast feeding (see p.174) • Counsel on safer sex including use of condoms • Advise on routine and follow-up visits (see p.142) • Advise on danger signs (see p.172) • Advise how to prepare for a postpartum emergency (see p.172).
<ul style="list-style-type: none"> • Check HIV status in mother health record 	<p>if HIV positive:</p> <ul style="list-style-type: none"> • Refer mother and baby to an OPD clinic that offers ART/OI services for the continuation of treatment.
<ul style="list-style-type: none"> • Record all information on Mother Health Record. 	

3-3-1 Hygiene and nutrition

Advise and counsel all postpartum women, as follows:

Postpartum care and hygiene	Nutrition
<p>Advise and explain to the woman:</p> <ul style="list-style-type: none"> • To always have someone near her for the first 24 hours after birth • Not to insert anything into her vagina • To have enough rest and sleep; • Clean themselves to prevent infection of mother and baby but do not shower the baby before 24 hours: 	<ul style="list-style-type: none"> • Advise the woman to eat more meals in a day (at least 4 times a day) and eat more variety of locally available foods for each meal such as meat, fish, oils, nuts, seeds, bean curd, beans, vegetables, in order for her to be healthy and strong, especially calcium-rich food

<ul style="list-style-type: none"> - Wash hands before touching baby - Wash perineum daily and after going to the toilet - Change perineal pads every 4 to 6 hours, or more frequently if necessary - Wash used pads or dispose of them safely - Wash the body daily • Avoid sexual intercourse until perineal wound heals. 	<ul style="list-style-type: none"> • Reassure her that she can eat any normal foods and that these foods will not affect the breastfeeding • Spend more time on nutrition counseling with very thin women and adolescents • Determine if there are important taboos about foods which are nutritionally healthy; advise the woman against these taboos • Talk to family members to encourage them to help ensure the woman eats enough and avoids hard physical work.
---	---

3-3-2 Birth spacing

See p. 79 for general information about counseling on birth spacing and family planning. The following information will describe the birth spacing measures through lactational amenorrhea (LAM):

Lactational Amenorrhea (LAM)
<p>This method is effective only when the following 3 conditions are met:</p> <ol style="list-style-type: none"> 1. The mother has not yet had her menstrual period after delivery 2. The baby is less than 6-months-old 3. she is breastfeeding exclusively (no complementary food other than breastmilk) frequently night and day at least 8 times a day; <ul style="list-style-type: none"> • The woman that exclusively breastfeed can also choose any other family planning method, either to use alone or together with LAM.

3-3-3 Danger signs and emergency preparation

Advise the woman on danger signs and how to prepare for a postpartum emergency, as follows:

Danger signs	Emergency preparation
<p>Advise to go to the health center or Referral Hospital immediately, day or night, without delay, for the following danger signs:</p> <ul style="list-style-type: none"> • Vaginal bleeding - More than 2 pads soaked in 20-30 minutes after delivery or; - Bleeding increases rather than decreases after delivery; • Convulsions; • Fast or difficult breathing; • Fever and too weak to get out of bed; • Severe abdominal pain. <p>Advise to go to the health center or Referral Hospital as soon as possible for the following danger signs:</p> <ul style="list-style-type: none"> - Fever - Abdominal pain - Feels ill - Breasts swollen, red or tender breasts, or sore nipples - Urine dribbling or pain on passing urine - Pain in the perineum or draining pus - Foul-smelling lochia. 	<p>Discuss emergency issues with the woman and her partner/family:</p> <ul style="list-style-type: none"> • Advise them to always have someone close for at least 24 hours after delivery • Discuss: <ul style="list-style-type: none"> - Where to go if danger signs occur? - How to get there? - Costs involved? - Family and community support • Advise the woman to bring her Maternal Health Record with her.

3-3-4: Routine and Follow Up Visits

Must encourage the woman to bring her partner or family member to at least one postnatal visit.

Follow-up visit if there is problem:

Problems encountered	Day to return back
• Fever	2 days
• Lower urinary tract infection	2 days
• Perineal infection or pain	2 days

• Hypertension	1 week
• Urinary incontinence	1 week
• Severe anemia	2 weeks
• Moderate anemia	4 weeks
• Postpartum blues	2 weeks
• HIV-positive	2 weeks

3-4 Assessment and care of the newborn

3-4-1 Danger signs in a newborn prior to discharge

If at any time immediately after delivery but prior to discharge, the newborn is observed to exhibit any of the danger signs below, the baby needs urgent treatment (see section 3-5).

Danger signs in a newborn prior to discharge:

- Baby respiratory rate less than 30 breaths per minute or more than 60 breaths per minute
- Severe chest in-drawing
- Grunting
- Convulsions
- Floppy or stiff
- Fever temperature $>38^{\circ}\text{C}$ at the armpit
- Temperature $<35^{\circ}\text{C}$ or not rising after rewarming
- Not breastfeeding at all or severe difficulty breastfeeding
- Umbilicus draining pus or umbilical redness and swelling extending to skin
- Bleeding from cord stump
- More than 10 skin pustules or bullae, or swelling, redness, hardness of skin
- Pallor
- Any jaundice <24 hours old or jaundice on palms and soles at any time.

3-4-2 Care of the newborn for all babies until discharge

3-4-2-1 General guidance

Hand hygiene:

The largest risk to a hospital born baby, is health workers spreading nosocomial infection. Unnecessary handling is the easiest way to spread infection. Health workers should only handle newborns if medically necessary. If health workers need to handle the baby, they should wash their hands at five key moments:

- 1- Before touching the baby
- 2- After touching the baby

- 3- Before doing a task requiring equipment or supplies that will come in contact with the baby or the mother
- 4- After *possible* exposure to body fluids
- 5- After come in contact with the baby's or the mother's surroundings.

Health workers must take off their rings and jewelries, and wash their hands when they arrive at work before putting on and after removing any kind of gloves, after using the toilet or latrine and before leaving work. Anything that a health worker touches can be a source of infection, i.e., surfaces, stethoscopes, medical and other equipment, medical stationary, pens and mobile phones.

Maintaining Warmth: Ensure that the room is warm (25-28 °C) and has no airflow. Explain the mother about the benefit of keeping the baby warm for their good health. Keep the baby in the room with the mother in direct skin-to-skin contact without separating them for at least 60 minutes after labor or until the baby is done getting breastfed, and then as much as possible with the mother in her bed (under a mosquito net). If the baby is not in direct skin-to-skin contact, determine if the reason is valid i.e., baby or mother needs urgent care requiring their separation. If the reason is valid, ensure the baby is dressed or wrapped, covered by a blanket and wearing a hat or in skin-to-skin contact with family or relatives, i.e., the father.

Teach the mother: to be aware and able to identify any **danger sign** of the baby and encourage exclusive breastfeeding for day and night, 8 times or more in 24 hours.

3-4-2-2 Breastfeeding assessment and counseling

Note: For breastfeeding in the first hour (see page 120)

Assess breastfeeding as follows:

Ask the mother:

- How is breastfeeding going?
- Is there any difficulty?
- Is your baby satisfied with the feed?
- Did you have to feed with just one side or both side of breast?
- Have you fed your baby any other foods or drinks or artificial milk since birth?
- How do your breasts feel before and after breastfeeding? Do you have any nipple or breast pain?
- Do you have any concerns about feeding the baby?
- If baby more than 1 day old: how many times has your baby been fed in 24 hours? How long does your baby go between breastfeeds? Ask the mother to alert you when the baby is ready to breastfeed. Observe breastfeeding for about 5 minutes

- Is the baby well-positioned and attached, and suckling effectively? (See page 120)

Feeding well (suckling effectively; attached and positioned correctly; breastfeeding 8 or more times in 24 hours on demand day and night):

- Congratulate the mother for breastfeeding properly
- Encourage mother to continue breastfeeding exclusively and on demand as this method can prevent severe diseases.

Feeding difficulty (not yet breastfeeding; not well attached or positioned; not suckling effectively; breastfeeding less than 8 times per 24 hours for babies older than 1 day of age; receiving other foods or drinks):

- Reassure the mother that she has enough breast milk if she breastfeeds frequently and effectively
- Teach and help with correct positioning and attachment
- If the woman has breast engorgement, manage as mentioned in page 138
- Advise to feed more frequently for day and night, 8 or more times in 24 hours
- If baby has received any other food or drink, including formula, advise the mother to stop. Return to exclusive breastfeeding
- Check to see if there are any mouth thrush
- Reassess at the next feed or follow-up visit in 2 days.

There are very few reasons that alternatives to breastfeeding need to be considered. (table below)

- | |
|---|
| <ul style="list-style-type: none"> • Active Herpes simplex virus type 1 lesions on the mother's breasts (see STI syndromic approach) • Mother not able to breastfeed due to special treatments: <ul style="list-style-type: none"> ○ sedating psychotherapeutic drugs ○ Blood cancer ○ Goiter, using antithyroid drugs. |
|---|

Counsel on exclusive breastfeeding as follows:

- | |
|---|
| <ul style="list-style-type: none"> • Explain to the mother that it is important that she and her baby remain in direct skin-to-skin contact as much as possible until and even after discharge • Explain to the mother the importance of feeding her baby colostrum: <ul style="list-style-type: none"> - Encourage breastfeeding on demand, day and night, as long as the baby wants. After the first 24 hours after birth, a baby should be fed 8 or more times per day |
|---|

- The breast milk that women produce within the first few days after delivery is called colostrum. It is thick and yellowish in color
- Colostrum is very important for her baby since it contains more protein than normal milk and vitamin A, and it can protect the baby better against infection
- The stomach of a newborn is very small volume so the small amount of the colostrum is quiet enough for the newborn and provides him/her with many benefits.
- If the mother keeps breastfeeding exclusively, the more milk will be produced within 2-3 days.

Explain to the mother the proper breastfeeding practice:

- A baby should be exclusively breastfed for the first 6 months of life – exclusive breastfeeding means giving a baby only breast milk (including expressed breast milk). Do not feed the baby with other liquids (i.e., formula, water, sugar water, condensed milk, porridge) and other foods that can be dangerous to them. Breast milk contains all the nutrients and water that a baby needs in the first 6 months of life, so no additional foods or liquids are needed
- Breast milk protects a baby against infection
- It is normal for a baby to cry sometimes. It does not necessarily mean that the baby is hungry. She can offer the breast, but do not give other foods. If the baby cry because of reasons other than hunger, must figure out that reason as it can be because: wetness, sickness, startling loud noise or unhappiness
- Empty one side of breast before moving on to another one
- After exclusively breastfeeding for 6 months, start feeding additional food together with breastfeeding for at least 2 years.

All exposed infants should be **exclusively** breastfed until the age of 6 months and continue to be breastfed along with additional food until the age of 12 months. Usage of anything other than breastmilk (i.e., formula milk) increases the risk of neonatal death. Mixed feeding (i.e. breastmilk plus formula milk) increases the risk of getting HIV for infants whose mother is infected with HIV (see Instructions on Infant and Young Child Feeding Counseling)

3-4-3 Identification of problems needing special management

The baby should be assessed during delivery and within 1 hour after delivery and daily while in the hospital and before discharge. Obtain a history and physical through asking the mother, checking records, looking, listening and feeling as appropriate. When a problem is found, see follow up actions below.

History and physical findings, classification and section for follow up actions if needed.

History and physical findings	Classify	Section for follow up actions
Gestational Age (normal is 37 – 42 weeks) - 32-36 weeks - <32 weeks.	- Pre term - Very pre-term.	3-4-4
Birth Weight (normal is 2500 – 4000 g) - > 4000 g - 1500 - < 2500 g - < 1500 g	- Overweight - Low birth weight - Very low birthweight.	3-4-4
Difficulties during birth: - Breech - Asphyxia - Convulsions.	- Difficult delivery.	2-8-3 3-5-6 3-5-3
Mother very ill or transferred	Alternative baby care needed	3-5-10
Breathing: Check respiratory rate (normal is 30 – 60): - Breathing (normal is <30 or >60 times per minute) - Grunting - Chest in-drawing.	Difficulty Breathing	3-5-1
Temperature - >37.5 °C - <36.5 °C	Hyperthermia Hypothermia	3-5-2
Eyes red, swollen or draining pus	Possible eye infection	3-5-11
Umbilicus: Observe for redness, draining of pus, redness and hardness of the skin around the umbilicus The skin around the umbilicus is red and swelling extending: - Less than 1 cm beyond the umbilicus - Greater than 1 cm beyond the umbilicus, the skin around the umbilicus is red and hardened Swollen, draining pus, or foul smelling, abdominal distension.	Possible: - Local infection of umbilicus - Severe infection of umbilicus.	3-5-12

<p>Skin:</p> <p>Observed for jaundice (Observe in good daylight; jaundice will look more severe if observed in artificial light and may be missed in poor light): Yellow face, baby <24 hours old, or Yellow on palms or soles, any age.</p>	Severe Jaundice	3-5-13
<p>Skin pustules: Look especially around the neck, armpits, inguinal area</p> <p>Less than 10</p> <p>Greater than 10</p>	<p>Local skin infection</p> <p>Possible serious illness</p>	3-5-14
Thrush on skin or mouth	Thrush	
Cuts or Abrasions	Skin injuries	
<p>Head, Body and Limbs of the baby:</p> <ul style="list-style-type: none"> - Bruises, swelling on buttocks, Swollen head, bump on one or both sides - Abnormal position of legs (after breech presentation) - Asymmetry or immobility of arm. 	Birth Injury	3-5-15
<p>Examine the body from head to toe:</p> <p>Open tissue on head, cleft palate or lip, abdomen or back (no skin cover on the back), club foot (talipes).</p>	Malformation	3-5-15
Diarrhea		3-5-16
<p>Determine Maternal Risk factors present within 48 hours after delivery:</p> <ul style="list-style-type: none"> - Fever >38°C - Infection to be treated with antibiotics 	Risk of bacterial infection	3-5-5

- Membranes ruptured >18 hours		
Mother tested positive for syphilis?	Risk of Congenital Syphilis	3-5-8

3-4-4 Provide additional care for the low birth weight (<2500g) or preterm (<37 weeks) newborn including kangaroo mother care

Low birth weight and pre-term babies are at greater risk of death and illness than those of normal birth weight. They are more likely to have feeding difficulties, hypothermia, and breathing difficulties, and suffer from other problems such as sepsis. Special attention is needed to ensure these problems are addressed.

Note: Maintaining hand hygiene and hygiene of equipment is critical

Ensure additional warmth for baby:

- Ensure room is warmer than 25°C and that the windows and doors are shut to avoid draughts
- Teach mother how to keep small babies warm in skin-to-skin contact with Kangaroo Mother Care
- Ensure that the babies are wrapped in cloth and placed between the mother's breast and the mother must wear an open-chest shirt. The mother and child must be covered with extra blankets
- Teach mother the Kangaroo Mother Care, how to express breastmilk, breastfeeding and hygiene or time and people who can replace them. Replace the nappy or cloth frequently so that the baby is not exposed to a wet or dirty cloth.

Note: Do not bath the small baby and wipe the soiled areas.

Kangaroo Mother Care (KMC) supports keeping the baby warm, effective breathing, breastfeeding on demand, weight gain, bonding, colonization with beneficial family bacteria (friendly bacteria). Babies with KMC cry less, sleep better and have fewer breathing problems than others. The more hours of KMC a day, the bigger the benefit.

- Tell the mother and other family members the benefit of KMC
- Remove the baby's clothing, except a nappy, a hat, and socks
- Place the baby upright in direct skin-to-skin contact between the mother's breasts
- Make sure the baby's hips and elbows are flexed into a frog-like position and the baby's head and chest are on the mother's chest. The head should be in a slightly extended position and a little bit to the side
- Keep the baby in place with a piece of cloth or krama or sarong tied around the mother and newborn and the upper part of the cloth must be placed below the baby's ear. The mother should wear open-chest shirt and wrap the baby with cloth
- Make sure it is tied firmly enough to prevent the baby from slipping out when the mother stands up, lay down or lay on the bed or sit on a chair however, it should not be so tight to restrict baby's movement or breathing
- Explain to the mother or her family that she can keep the baby in this position day and night, if possible and that she can also do other tasks but do not change too frequently
- Tell her that shorter periods are also helpful but the longer the better
- Have the mother attempt to breastfeed when the baby shows interest in breastfeeding
- If the baby is not suckling effectively, demonstrate or offer suggestions on correct positioning and attachment (but do not touch the baby or the mother).

Daily Life for the Mother:

Emphasize to the mother to:

- Wash her hands frequently, especially after using the washroom and before eating, and keep the baby clean and dry
- Give only breastmilk. Any other food or fluids is dangerous for the baby
- Do not cover or apply anything to the cord and keep the baby away from sick children and adults
- Do whatever she likes when she is awake: stand, walk, sit, or lie down, anything that is convenient for KMC
- Encourage other family members, including the father to give KMC.

Feeding:

- Give special support for breastfeeding:
 - Encourage mother to breastfeed on demand. Note that all babies lose weight after birth. The birth weight is usually regained by 7-10 days of age

- Assess breastfeeding daily for attachment, suckling, duration and frequency of feeds, and baby satisfaction with feeds. Record time and duration of each breastfeed
- Weigh baby daily and assess
- If the baby is not suckling effectively, demonstrate or offer suggestions on correct positioning and attachment (but do not touch the baby or the mother)
- Check her with each feed and offer suggestion if needed
- If after good effort by the mother and health worker, the baby is still not suckling effectively:
 - Teach mother how to hand express breast milk and cup, spoon or syringe feed or feed by nasogastric tube (section 8); record volume given. Continue to feed with expressed milk until the baby can suckle effectively
 - Because the baby is healthy, we can feed them expressed breastmilk 3by changing from the use of cup to spoon, syringe or gastric tube
 - As soon as the baby can suckle effectively, the mother can begin breastfeeding
 - If feeding by nasogastric tube, still try to put baby to the breast unless the baby is medically unstable.

Monitoring: assess baby and record findings three times a day.

- Assess breathing (the baby should be quiet and not crying).
 - Count respiratory rate. Repeat the count if >60 or <30 times per minute
 - Listen for grunting
 - Look for chest in-drawing
 - Ask for history of apnea (stop breathing >20 seconds)

If any of these are present, confirm that the baby has breathing difficulty. (page 183)

- Measure temperature
 - Encourage the mother to put a hat on the baby and keep in direct skin-to-skin contact to keep temperature within normal range (36.5° - 37.5°)
 - If difficult to keep body temperature within the normal range (refer to section 3-5-2)
- Look for jaundice. If present, (section 3-5-13).

Care of Newborns with complications:

- If the baby, despite active attempts, does not feed well and/or if the baby is not well, refer the baby and mother to a hospital or unit with capacity to deal with the care for low birth weight or preterm babies. Keep baby in direct skin-to-skin contact with mother with hat and socks on while transferring.

Discharge Criteria:

Discharge baby when the following occur:

- Exclusive breastfeeding is going well
- Gaining at least 15g of weight in a day for 3 consecutive days
- Mother able and confident in caring for the baby
- No maternal concerns about the baby's health
- If mother and baby are not able to stay at health facility, ensure daily home visits
- Teach the mother to recognize danger signs: severe chest-indrawing while breathing, fast breathing (>60 times a minute), slow breathing (<30 times a minute), decreased movement, convulsions, difficulty feeding or feeling that the baby is too cold or too hot or the baby is draining pus or redness around the umbilicus if it is still intact
- Make sure that the mother feels comfortable to continue KMC at home.

Follow-up:

- Advise mother to return to the health facility if the baby is not feeding well, or if any danger sign is present (see page 171)
- See the mother (either at home or at the health facility) twice a week until the baby weighs 2.5 kg
- Provide routine discharge advice for newborn care.

3-4-5 Advise the mother on post-discharge newborn care

Keeping warmth:

Explain to the mother that keeping the baby warm is important for the baby to remain healthy and that babies usually need one more layer of clothes than older children or adults:

- Direct skin-to-skin contact can be done as desired, and it is helpful to the mother and the baby. It is essential to rewarm a baby who is cold to the touch. Skin-to-skin contact can be done by the family members if the mother is not present. If direct skin-to-skin contact is not possible, dress or wrap the baby in a soft dry cloth. For all babies, cover the head with a hat for the first few weeks after birth, especially for small baby
- Keep the baby and the mother together for daytime and nighttime. If the mother and the baby must be separated (i.e., mother ill), either keep the baby in direct skin-to-skin contact with other family members, or make sure that the baby is dressed or wrapped and covered properly with a blanket
- Keep the room warm and free of drafts
- DO NOT put/leave baby on cold or wet surfaces including wet cloths
- DO NOT swaddle baby (wrap too tightly) as this will make them cold
- DO NOT leave baby in direct sunlight.

Cord care:

- Do not touch, wrap, bandage or apply anything on the cord stump
- Only clean dry cloths should loosely cover cord stump
- If stump is soiled, wash it with clean water and soap, and dry it thoroughly with a clean cloth
- If umbilicus is bleeding, red or draining pus, take the baby to the health facility.

Sleeping:

- Use a mosquito net day and night for the baby when not in direct skin-to-skin contact with the mother
- Let baby sleep on her/his back or on the side
- Keep baby away from indoor air smoke and people smoking
- Keep baby away from sick children or adults.

Hygiene:

- Never bathe a baby within 24 hours of birth
- When washing, use warm water to wash face, neck, underarms daily
- Dry thoroughly and keep in direct skin-to-skin contact with mother or dress the baby.

Danger Signs

*Advise mother to take baby to the health facility **immediately, day or night, without delay**, for the following danger signs:*

- Difficulty feeding or feeding <8 times daily in the first week of life
- The baby is not moving on their own
- Temperature <36.5°C
- Temperature > 37.5°C
- Respiratory Rate \geq 60 times per minute
- Respiratory Rate \leq 30 times per minute
- Severe chest indrawing
- Wheezing or grunting when breathing
- Convulsions
- Pus from eyes
- Skin pustules
- Cord stump which is bleeding, red or draining pus
- Has jaundice during the first 24 hours after birth or yellow on palms and soles at any age.

Routine Visits:

Mother should bring baby for routing visit as following to receive vaccination such as Hepatitis B, BCG, OPV, Diphtheria, Pertussis, Tetanus, HepB, Hib and JE if available. In addition to these, newborns will receive monitoring and evaluation of his/her development.

3-5 Management of selected newborn problems

3-5-1 Breathing difficulty

A baby who has breathing difficulty has one or more of the following problems: a respiratory rate > 60 or <30 breaths per minute, chest indrawing, grunting, or apnea (not breathing >20 seconds).

Classification of breathing difficulty		
Respiratory rate (breaths per minute)	Grunting or chest indrawing	Classification
More than 90	Present	Severe
More than 90	Absent	Moderate
60 to 90	Present	Moderate
60 to 90	Absent	Mild

Assess and manage the baby with breathing difficulty, as follows. If this is not possible, attempt to provide general management and immediately **refer the baby to a facility where appropriate care is available.**

Assessment and management of breathing difficulty

General management:

- Give oxygen at a moderate flow rate (0.5 to 1 L per minute) and measure saturation by pulse oximetry. Maintain saturation levels between 88 to 92% for preterm baby and 95-97% for full term
- If the baby's respiratory rate is < 30 breaths per minute, observe carefully
- If the baby's respiratory rate is <20 breaths per minute, resuscitate using a bag and mask. (see p. 99)
- If the baby has apnea (no breathing for at least 20 seconds), stimulate breathing by rubbing the baby's back for 10 seconds
- If the baby does not begin to breath, resuscitate using a bag and mask
- If the baby's respiratory rate is >60 breaths per minute and the baby has central cyanosis (even if receiving oxygen at a high flow rate), suspect a congenital heart abnormality
- Identify other signs indicating that the baby has problems (For example, asphyxia, sepsis).

Severe breathing difficulty:

- Respiratory rate > 90 breaths per minute, AND
- Grunting or chest indrawing present.

Management:

- Insert a gastric tube to empty the stomach of air and secretions. Leave tube open to the air on free drainage.
- Treat for sepsis:
 - Establish an IV line and give fluid at maintenance volume according to baby's age and weight (see page 321)
 - Take blood samples for culture
 - If baby has convulsions, opisthotonos, or bulging anterior fontanelle, suspect meningitis:
 - Treat convulsions, if present. (see page 188)
 - Perform a lumbar puncture and begin treatment for meningitis while awaiting laboratory results
 - Give ampicillin and gentamicin IV according to baby's age and weight
 - **Ampicillin IV or IM Dose:** 100 mg per kg every 12 hours, add 2.5 ml sterile water
 - **Gentamicin IV or IM Dose:** 5 mg per kg every 24 hours if term, 4 mg per kg every 24 hours if preterm
- Monitor and record respiratory rate and oxygen saturation every hour until the baby no longer requires oxygen and then for an additional 24 hours. Look for:
 - Chest indrawing or grunting
 - Episodes of apnea
- Monitor baby's response to oxygen (i.e., improvement in breathing and improvement of oxygen saturation)
- When baby begins to show signs of improvement, see care for moderate breathing difficulty
- If breathing difficulty worsens or baby has central cyanosis:
 - Give oxygen at higher flow rate
 - If still no improvement, urgently refer for specialized care

Moderate breathing difficulty:

- Respiratory rate more than 90 breaths per minute and grunting or chest indrawing absent OR
- Respiratory rate 60 to 90 breaths per minute and grunting or chest indrawing present.

Management:

- Establish an IV line and give fluid at maintenance volume according to baby's age and weight
- Monitor and record respiratory rate and oxygen saturation every hour until the baby no longer requires oxygen and then for an additional 24 hours. Observe for:
 - Chest indrawing or grunting
 - Episodes of apnea.
- If breathing difficulty does not improve or worsens after 2 hours, manage as for severe breathing difficulty
- Monitor baby's response to oxygen (i.e., improvement in breathing and improvement of oxygen saturation)
- When baby begins to show signs of improvement, see care of mild breathing difficulty.

Note: Respiratory Distress Syndrome (RDS) in preterm is managed as above. However, typical RDS will get worse over the first two days and then starts to improve. If breathing difficulty does not stabilize after two days, manage as for severe breathing difficulty.

Mild Breathing Difficulty:

- Respiratory rate 60 to 90 breaths per minute AND
- Grunting or chest indrawing absent.

Management:

- Give expressed breast milk by gastric tube
- Monitor and record respiratory rate and oxygen saturation every hour until the baby no longer requires oxygen and then for an additional 24 hours Observe for:
 - Chest indrawing or grunting
 - Episodes of apnea
- Monitor baby's response to oxygen (i.e., improvement in breathing and improvement of oxygen saturation)
- When oxygen is no longer needed, encourage breastfeeding
- If baby cannot breastfeed, give expressed breast milk (see page 302)
- If baby's tongue and lips remain pink without oxygen for at least 2 days, there is no breathing difficulty, baby is feeding well, and there are no other problems, discharge home.

3-5-2- Hypothermia (<36.5°C) or hyperthermia (>37.5°C)

In all cases of hypothermia mother and baby should remain in hospital for at least 24 hours.

Mild hypothermia (body temperature 35-36.4°C)

- Remove cold or wet clothing, if present
- The mother is the best person to warm the baby using direct skin-to-skin contact. Father or family members can replace the mother if the mother is not available. Last alternative is to dress the baby in warm clothes and a hat, and cover with a warm blanket
- Encourage the mother to breastfeed more frequently. If the baby is having difficulty breastfeeding, provide assistance (page 174)
- If temperature not rising after 2 hours reassess baby as for moderate hypothermia.

Moderate hypothermia (body temperature 32-34.9°C):

Treat as for mild hypothermia but **in addition:**

- Measure the baby's temperature every hour for the first 3 hours. If the baby's temperature is increasing at least 0.5 °C per hour over the last three hours, it means that the warming is successful; continue measuring the baby's temperature every two hours. If the baby's temperature does not rise or is rising more slowly than 0.5 °C per hour, look for signs of sepsis (i.e., poor feeding, vomiting, breathing

difficulty). In addition, consider warming the baby using a radiant warmer if one is available

- Once the baby's temperature is normal, measure the baby's temperature every three hours for 12 hours. If baby's temperature drops to $<32^{\circ}\text{C}$ follow severe hypothermia management.

Severe hypothermia (body temperature $<32^{\circ}\text{C}$):

Use stabilizing measures listed for moderate hypothermia, but in addition:

- If available, warm the baby immediately using a pre-warmed radiant warmer
- Provide initial treatments for sepsis (page 194)
- Look for emergency signs (i.e., respiratory rate less than 20 breaths per minute, gasping, not breathing or shock). If any sign is present, initiate resuscitation. If the baby's respiratory rate is >60 breaths per minute or the baby has chest indrawing or grunting on expiration, initiate treatment for breathing difficulty (page 183)
- Refer baby urgently for special care.

Hyperthermia ($>37.5^{\circ}\text{C}$)

Do not give antipyretic drugs to reduce the baby's temperature
--

- If the hyperthermia is due to exposure to a high ambient temperature or sun exposure:
 - Place the baby in a normal temperature environment (25°C to 28°C)
 - Undress the baby partially or fully for 10 minutes, then dress and cover the baby
- If the baby's respiratory rate is > 60 breaths per minute or chest is indrawing or grunting on expiration, treat for breathing difficulty. (page 183)
- If the hyperthermia is due to overwarming in the radiant warmer or incubator:
 - Reduce the temperature. If the baby is in an incubator, reduce the incubator air temperature until baby's temperature is within the normal range
 - Undress the baby partially or completely for 10 minutes, then dress and cover the baby
- Observe for signs of sepsis (i.e., poor feeding, vomiting, breathing difficulty) now and repeat when the baby's temperature is within the normal range
- Measure the temperature in the incubator or the temperature under the radiant warmer every hour, and adjust the temperature setting accordingly
- Review nursing care practices to ensure that the problem does not happen again
- Provide ongoing management of hyperthermia

- If the baby's temperature is more than 39°C :
 - Sponge the baby or bath the baby for 10 to 15 minutes in water that is about 4°C lower than the baby's current temperature

- Do not use cold water or water that is more than 4 °C lower than the baby's temperature
- Measure the baby's temperature every hour.

If the baby's temperature is still abnormal after two hours, provide initial treatment for sepsis and refer the baby urgently for special care.

3-5-3 Convulsions or spasms

If the **baby is currently having a convulsion/spasm**, look for distinguishing features

Distinguishing features of convulsions and spasms

Problem	Typical findings
Generalized convulsion	<ul style="list-style-type: none"> • Repetitive jerking movements of limbs or face; • Continuous extension or flexion of arms and legs, either synchronous or asynchronous • Apnea (spontaneous cessation of breathing for more than 20 seconds) • Baby may appear unconscious or awake but unresponsive.
Subtle convulsion	<ul style="list-style-type: none"> • Repetitive blinking, eye deviation, or staring • Repetitive movements of mouth or tongue • Purposeless movement of the limbs, as if bicycling or swimming • Apnea • Baby may be conscious.
Spasm	<ul style="list-style-type: none"> • Involuntary contraction of muscles that lasts a few seconds to several minutes • Fists tightly clenched • Trismus (tight jaw; the baby's mouth cannot be opened and the lips may be pursed together in a "fish mouth" expression) • Opisthotonos (extreme hyperextension of the body, with the head and heels bent backward) • Triggered by touch, light, or sound • Baby is conscious throughout, often crying with pain.

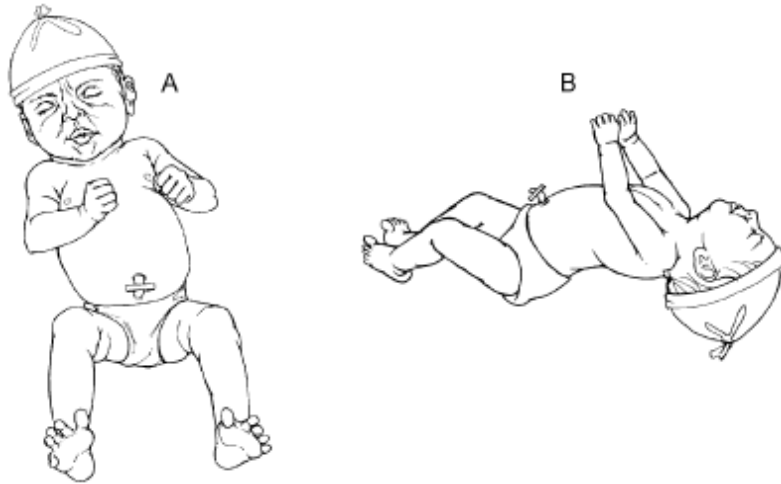


Figure A is the baby with spasm of the face and limbs and figure B is opisthotonos.

Note: Ensure that the baby is having a convulsion or a spasm and is not just jittery:

- Like convulsions, jitteriness is characterized by rapid, repetitive movements; however, in a jittery baby, these movements are of the same amplitude and in the same direction.
- Like spasms, jitteriness can be precipitated by sudden handling of the baby or by loud noises, but it is usually stopped by cuddling, feeding, or flexing the baby's limb.

- If the baby is not currently having a convulsion/spasm, ask the caregiver:
 - Can you describe the type of abnormal movements the baby had?
 - Were they triggered by noise or handling? (See table above to differentiate between a convulsion and a spasm)
 - Did the baby's condition suddenly deteriorate?
 - Has there been a change in the baby's ability to breastfeed (not able to suckle)?
 - Did the baby suddenly become pale?
 - Did the mother receive the TT immunization? If yes, how many doses? When was the last dose?
 - Were there any substances applied to umbilical cord? What were they?
 - Did the baby have jaundice early (on day 1 of life)? If so, was the baby treated?
- Measure blood glucose. If the blood glucose is less than 45 mg/dl (2.6 mmol/l), treat for low blood glucose (see 214) Determine the probable diagnosis:

Differential diagnosis of convulsion or spasms

History	Examination	Investigation or Other	Probable Diagnosis
---------	-------------	------------------------	--------------------

		Known diagnoses	
<ul style="list-style-type: none"> • Time of onset day 1 to 3 • History of maternal diabetes • Poor or no feeding. 	<ul style="list-style-type: none"> • Convulsions, jitteriness, lethargy, or unconsciousness • Small baby (less than 2.5 kg at birth or born before 37 weeks gestation) • Large baby (more than 4 kg at birth). 	<ul style="list-style-type: none"> • Blood glucose less than 45 mg/dl (2.6 mmol/l) 	Low blood glucose, (3-5-17)
<ul style="list-style-type: none"> • Mother not immunized with tetanus toxoid • Poor or not feeding • Time of onset day 3 to 14 • Unclean birth • Application of unclean or harmful substances (i.e., animal dung) to umbilicus 	<ul style="list-style-type: none"> • Spasm. 	<ul style="list-style-type: none"> • Infection of umbilicus. 	Tetanus, 3-5-4
<ul style="list-style-type: none"> • Any timeframe 	<ul style="list-style-type: none"> • Convulsion or unconsciousness • Lethargy. 	<ul style="list-style-type: none"> • Sepsis. 	Possible meningitis Treat for convulsions (3-5-3) and meningitis (3-5-7)
<ul style="list-style-type: none"> • Complicated or difficult labor or birth (fetal distress) • Failure of baby to spontaneously breathe at birth • Resuscitation at birth, time of onset within 24 hours of birth. 	<ul style="list-style-type: none"> • Convulsions or unconsciousness • Breathing difficulty • Abnormal body temperature • Drowsiness or reduced activity • Irritability. 	Asphyxia.	Asphyxia or other brain injury; Treat for convulsions (3-5-13) and asphyxia (3-5-6)

<ul style="list-style-type: none"> • Time of onset day 1 to 7 • Sudden deterioration of condition • Sudden pallor. 	<ul style="list-style-type: none"> • Convulsions or unconsciousness; • Small baby (less than 2.5 kg at birth or born before 37 weeks gestation) • Severe breathing difficulties. 	Intraventricular bleeding.	Intraventricular bleeding
<ul style="list-style-type: none"> • Time of onset of encephalopathy day 3 to 7 • Serious jaundice • Late or no treatment of serious jaundice. 	<ul style="list-style-type: none"> • Convulsions • Opisthotonos • Poor or no feeding • Lethargy or floppiness. 	• Positive Coombs test.	Bilirubin encephalopathy (kernicterus) Treat for convulsions (3-5-3) and bilirubin encephalopathy.

Management of convulsions

- Establish an IV line and give only IV fluid at maintenance volume according to the baby's age and weight (page 321) for the first 12 hours. If the convulsions are due to asphyxia, see guidelines on fluid volume as in section 3-5-6.
- If the baby's blood glucose was less than 45 mg/dl (2.6 mmol/l), ensure that the baby was treated for low blood glucose to rule out hypoglycemia as the cause of the convulsions (3-5-17).
- If the baby is currently having a convulsion or had a convulsion within the last hour, give Phenobarbital 20 mg/kg body weight IV slowly over five minutes:
 - If an IV line has not yet been established, give Phenobarbital 20 mg/kg body weight as a single IM injection.
 - If convulsions do not stop within 30 minutes, give another dose of Phenobarbital 10 mg/kg body weight IV slowly over five minutes (or IM if an IV line has not yet been established). Repeat one more time after another 30 minutes, if necessary.
 - If convulsions continue or recur within six hours, give phenytoin 20 mg/kg body weight IV, noting the following:
 - Give phenytoin IV only
 - Mix the total dose of phenytoin in 15 ml of normal saline and infuse at the rate of 0.5 ml per minute over 30 minutes. Use only normal saline to infuse phenytoin, as all other fluid will cause the phenytoin to crystallize.

Do not use diazepam for convulsions; diazepam given in addition to Phenobarbital will increase the risk of circulatory collapse and respiratory failure.

- If the baby has central cyanosis (blue tongue and lips) or other signs of breathing difficulty, give oxygen at a moderate flow rate and treat as per Breathing Difficulty. (section 3-5-1).

Ongoing care of babies who have had convulsions:

- Observe the baby for recurrence of convulsions, looking especially for subtle convulsions
- If convulsions recur within two days, give Phenobarbital 5 mg/kg according to the baby's body weight once daily by mouth until the baby has not had a convulsion for seven days
- If convulsions recur after two days without convulsions, repeat treatments with Phenobarbital as described for initial management of convulsions and again follow with Phenobarbital 5 mg/kg body weight once daily by mouth until the baby has not had a convulsion for seven days
- If the baby is receiving daily Phenobarbital:
 - Continue Phenobarbital for seven days after the last convulsion
 - Once Phenobarbital is discontinued, observe the baby for an additional three days
 - Continue IV fluid at maintenance volume according to the baby's age and weight (see page 321). If the **convulsions are due to asphyxia**, see **below** for guidelines on restricted fluid volume
- Once the baby's condition is stable, allow the baby to begin breastfeeding. If the baby cannot be breastfed, give expressed breast milk using an alternative feeding method such as expressing breast milk, cup, tube and spoon feeding. (see sections 8-1 and 8-2)
- Provide general care for the baby:
 - Encourage the mother to hold the baby, but avoid overstimulation by noise and excessive handling
 - Handle and move the baby gently to prevent injury when the baby's muscle tone is low. Support the baby's entire body, especially the head
 - Explain to the mother that the Phenobarbital will make the baby very sleepy for several days
 - Explain to the mother that if convulsions stop and the baby is feeding well by seven days of age, recovery will probably be complete.

If the baby's condition does not improve (i.e., continued lethargy, convulsions, or not breastfeeding or feeding poorly) refer to higher-level care.

If the baby has not had a convulsion for three days after discontinuing Phenobarbital, the mother is able to feed the baby, and no other problems require hospitalization, discharge the baby:

- Discuss with the mother the baby's prognosis and how to deal with the problems the baby may have at home
- Follow up in one week, or earlier if the mother notes serious problems (i.e., feeding difficulty, convulsions)
- Help the mother find the best method to feed the baby if the baby is not breastfeeding well. If the baby is feeding slowly, have the mother feed more frequently.

3-5-4- Tetanus

Management:

- Establish an IV line, and give IV fluid at maintenance volume according to the baby's age and weight
- Give diazepam 1 mg/kg body weight IV slowly over three minutes:
 - If an IV line cannot be established, insert a gastric tube, and give the diazepam via the tube.
 - If the spasms do not stop within 30 minutes, give another dose of diazepam 1 mg/kg body IV slowly over three minutes. Repeat one more time after another 30 minutes, if necessary.
 - If spasms continue or if they recur, give additional diazepam 1 mg/kg body weight IV slowly (or by gastric tube if an IV line still has not been established) every six hours. If not controlled despite this measure should refer to higher level.

If the baby's respiratory rate is less than 30 breaths per minute, withhold diazepam, even if the baby continues to have spasms.

If the baby has central cyanosis (blue tongue and lips) after the spasms, give oxygen at a moderate flow rate. To give oxygen, use a head box if available or give oxygen directly into the incubator.

Note: administering oxygen by mask or nasal prongs may cause spasms.

- Give the baby:
 - Antitetanus immunoglobulin (human) 500 units IM, if available, or give equine tetanus antitoxin 5000 units IM
 - Benzylpenicillin IV or IM for seven days (see page 313)

- Give the mother tetanus vaccine (tetanus toxoid) 0.5 ml (to protect her and any baby she may have in the future), and request her to return in one month for a second dose
- If the umbilicus is red and swollen, draining pus, or foul smelling, treat for infection of the umbilicus. (see page 208).

General care of babies with tetanus:

- Care for the baby in a quiet, darkened room to reduce unnecessary stimulation, but make sure the baby is not neglected or isolated
- Continue IV fluid at maintenance volume according to the baby's age and weight (see page 321)
- Give expressed breast milk by gastric tube between the spasms. Start with half the volume appropriate for the baby's age and weight, and slowly decrease the volume of IV fluid while increasing the volume of oral feeds over a period of two days
- If the baby has not had a spasm for two days, has received all doses of benzylpenicillin, is feeding well, and there are no other problems requiring hospitalization, discharge the baby.

3-5-5 Sepsis

The diagnosis of neonatal sepsis is very difficult because the diagnostic studies are not helpful soon enough and the delayed therapy can result in severe morbidity or death.

3-5-5-1 Well-newborns at risk for sepsis

- **Groups at risk for sepsis** requiring infection screen and antibiotics until infection ruled out. Signs of sepsis are as follows:
 - Maternal fever >38.5 °C
 - Maternal prolonged rupture of membranes >18 hours or
 - Purulent-appearing and foul-smelling amniotic fluid.
- All best practice **standards of immediate newborn care should be followed** for all newborns (i.e., thorough drying, immediate skin-to-skin, delayed cord clamping, non-separation of the newborn from the mother for at least 1 hour after labor, observations for feeding cues and a full breastfeed)
- **Well-newborns in these risk groups should stay with the mother in the delivery room** during which time the specimens (see below) should be collected. They should be transferred together to the maternity ward at an appropriate time
- Well-newborns in these risk groups should continue to stay with the mother on the maternity ward, maintaining skin-to-skin contact for as many hours as possible; and continue to breastfeed on demand. Well-newborns should not be admitted to the NCU

- Laboratory investigations for all newborns in one of the above risk groups in a well-newborn without signs of sepsis should take place between 1 – 3 hours of life. Following laboratory protocols, where laboratory capacity exists. See the table below for laboratory specimen collection:

Blood specimen	Timing of Blood Draw			Exact volume of blood
	1-3 hours	24 hours	48 Hours	
Blood culture and sensitivity	✓			1 ml
C-reactive protein (CRP)		✓	✓	1 ml
White blood cell count and differential	✓	✓		

Note: Laboratory capacity should reflect the CPA levels of the hospitals **Antibiotics to be given for all newborns immediately** after blood specimens taken:

Ampicillin IM/IV 50 mg/kg every 12 hours, and
Gentamicin IM/IV:

- Birth weight <2.500 kg: 3 mg/kg once daily
- Birth weight ≥2.500 kg: 5 mg/kg once daily

➤ **Interpretation of results:**

Specimen source	Laboratory result	
	Positive	Negative
Blood culture and sensitivity	Growth at 48 hours incubation;	No growth at 48 hours of incubation;
C-reactive protein (CRP)	> 10 mg/L	≤ 10 mg/L
White blood cell count (WBC)	<6000 >30,000	6000 – 30,000
Immature: Total (I:T) WBC ratio	≥ 0.2	<0.2

➤ **Actions:**

- If all results (i.e., blood culture done between the first and the third hour, CRP at 24 and 48 hours and WBC/I:T done between the first and the third hour and 24 hours) are negative, stop giving antibiotics 48 hours after giving the first dose
- If any of the result is positive at any time: continue giving antibiotics for 10 days (only 7 days for Gentamycin). Change antibiotics if sensitivity results indicate resistance to Ampicillin or Gentamycin
- If sepsis is confirmed by blood culture positive, lumbar puncture should be performed

- If there is not laboratory capacity to run the tests, but the newborn seems well: Continue giving antibiotics for 10 days (only 7 days for Gentamycin).

Note: If signs of infection appear at anytime, the newborn should be treated as below.

Provisional translation

3-5-5-2 Newborns with suspected sepsis

a). Signs of suspected sepsis

Signs of sepsis to evaluate in all newborns
<i>Newborns (birth-28 days), still in health facility (never discharged home)</i>
a. Respiratory rate ≥ 60 breaths (count for 1 minute)
b. Chest in-drawing
c. Grunting that does not settle after a period of skin-to-skin contact and rest
d. Hypothermia <35.0 °C (axillary temperature) that does not respond to warming
e. Hyperthermia >38.0 °C (axillary temperature)
f. Temperature instability (Fluctuations in axillary temperature despite being in a stable temperature environment)
g. Apnea (pause in breathing >20 sec) episode
h. Bradycardia (HR <100)
i. Episodes of cyanosis (blue) or extreme pallor (white) color changes
j. Convulsions
k. Bulging fontanel
l. Hypotonic (floppy)
m. Any jaundice (yellow skin) <24 hours old or jaundice on palms and soles at any time
n. Blood in vomit, naso-gastric tube or stool
o. Abdominal distension
p. Pus from umbilical cord base
q. Very little or no feeding causing moderate dehydration (dry mucous membranes, delayed capillary refill more than 3 seconds, sunken eyes or fontanel, or loss of skin elasticity)
r. Preterm ≤ 34 weeks gestational age delivering with either thick meconium or meconium-stained amniotic fluid (may indicate <i>Listeria monocytogenes</i> infection)
Newborns (birth-28 days) brought in to health facility from community
a. History of breathing difficulty
b. Movement only when stimulated
c. Temperature < 35.5 °C (axillary temperature)
d. Temperature ≥ 37.5 °C (axillary temperature)
e. Respiratory rate ≥ 60
f. Severe chest indrawing
g. History of convulsions

b). Clinical investigations

1. **Levels of care:** Clinical investigations should be done where laboratory capacity exists to test newborns. Otherwise treatment (C) should be pursued immediately

Note: Laboratory capacity should reflect the CPA levels of the hospitals.

2. **Instructions:** Clinical investigations are needed for newborns having any above sign of sepsis at any time. Following laboratory protocols, where laboratory capacity exists, see the below table for taking the laboratory specimens:

Blood specimen	Timing of Blood Collection		Exact volume of blood/CSF
	<i>Within 1 hour of onset of sign</i>	<i>24 hours</i>	
Blood culture and sensitivity	✓		1 ml
C-reactive protein (CRP)	✓	✓	1 ml
White blood cell count and differential	✓	✓	
Lumbar puncture for CSF Culture and WBCs, glucose and protein*	✓		1ml (0.5ml per tube)

*Lumbar puncture only if meningitis is suspected (i.e., all febrile neonates or bulging fontanel or convulsions or neurologic symptoms child) or sepsis is confirmed by positive blood culture. Lumbar puncture must not be done in case of coma, rapidly deteriorating consciousness, experiencing papilledema, focal neurological signs, continuous convulsion compromised cardio-respiratory status, bleeding or local infection at lumbar area.

C. Treatment

Antibiotics to be given for all newborns immediately after blood specimens taken according to the age of the baby and the severity/place of infection.

	<i>First week of life:</i>	<i>2 – 4 weeks of life:</i>
First-line therapy (1st line AB)	Ampicillin IV 50 mg/kg every 12 hours Gentamicin slow IV(30min) <ul style="list-style-type: none"> ▪ Birth weight < 2.500 kg: 3 mg/kg once daily ▪ Birth weight ≥ 2.500 kg: 5 mg/kg once daily 	Ampicillin IV 50 mg/kg every 8 hours Gentamicin slow (30min) IV or IM 7.5 mg/kg once daily (regardless of birth weight)

Change to Second-line therapy if newborn on first-line therapy whose clinical signs have not started to improve after 48 hours of treatment, or whose blood culture results show resistance to Ampicillin or Getamicin.		
Second-line therapy (2nd line AB)	Add: Ceftriaxone IV 50 mg/kg every 24 hours.	
In case of severe neonatal infection with multiple organs involvement (respiratory distress, apnea, circulatory failure, convulsion, bulging fontanel...):	Ceftriaxone IV 50 mg/kg every 12 hours, plus Ampicillin IV 100 mg/kg every 12 hours, plus Gentamicin slow IV (30min) or IM Birth weight < 2.500 kg: 3 mg/kg once daily Birth weight ≥ 2.500 kg: 5 mg/kg once daily	Ceftriaxone IV 50 mg/kg every 12 hours, plus Ampicillin IV 50 mg/kg every 8 hours, plus Gentamicin slow (30min)IV 7.5 mg/kg once daily (regardless of birth weight)
Meningitis	Ceftriaxone IV 50 mg/kg every 12 hours, plus Ampicillin IV 100 mg/kg every 12 hours, plus Gentamicin slow IV (30min) or IM Birth weight < 2.500 kg: 3 mg/kg once daily Birth weight ≥ 2.500 kg: 5 mg/kg once daily	Ceftriaxone IV 50 mg/kg every 12 hours, plus Ampicillin IV 50 mg/kg every 8 hours, plus Gentamicin slow (30min)IV 7.5 mg/kg once daily (regardless of birth weight) Duration of treatment should be continue for 3 weeks
If >10 skin pustules	Cloxacillin IV for 10 days 50 mg/kg every 8 hours, Gentamicin: Birth weight < 2.500 kg: 3 mg/kg once daily Birth weight ≥ 2.500 kg: 5 mg/kg once daily	Cloxacillin IV for 10 days 50 mg/kg every 8 hours, Gentamicin IM/IV 7.5 mg/kg once daily (regardless of birth weight)
Necrotizing Enterocolitis	Ampicillin IV 50 mg/kg every 12 hours Gentamicin slow (30min)IV	Ampicillin IV 50 mg/kg every 12 hours Gentamicin slow (30min)IV or IM 7.5 mg/kg once daily

	Birth weight < 2.500 kg: 3 mg/kg once daily Birth weight ≥ 2.500 kg: 5 mg/kg once daily Metronidazole 7.5mg/kg every 8 hours IV.	(regardless of birth weight) Metronidazole 7.5mg/kg every 8 hours IV.
--	---	---

➤ **Interpretation of laboratory results**

Specimen source	Laboratory result	
	Positive	Negative
Blood culture and sensitivity	Growth at 48 hours incubation	No growth at 48 hours of incubation
C-reactive protein (CRP)	> 10 mg/L	≤ 10 mg/L
White blood cell count (WBC)	<6000 >30,000	6000 – 30,000
Immature: Total (I:T) WBC ratio	≥0.2	<0.2
CSF(1mL) Culture or Gram Stain	Positive	Negative
WBCs <7 days old	≥20/mm	<20/mm
≥7 days old	≥10/mm	<10/mm
Protein	>0.4 g/L	≤0.4 g/L
Glucose	<1.5 mmol/L	≥1.5 mmol/L

Management and Treatment:

- Observe the baby for additional signs of sepsis, reassessing the baby every two hours for 12 hours: If additional signs of sepsis are found at any time during the observation period, treat the additional signs according to specific protocols
- If the initial signs of sepsis improved during the observation period, reassess the baby every four hours for an additional 24 hours. After 12 hours of treatment with antibiotics or when the baby's condition begins to improve, allow the baby to begin breastfeeding. If the baby cannot be breastfed, give expressed breast milk using an alternative feeding method as shown in section 8
- If all laboratory results (i.e., blood culture, CRP and WBC/I:T) are negative and the newborns signs of sepsis have all resolved: stop antibiotics immediately

- If **any** result is positive at any time, or signs of sepsis remain (regardless of laboratory result), or laboratory testing was not done: **continue antibiotics for 10 days**. Change antibiotics to Ceftriaxone if sensitivity results indicate resistance to Ampicillin or Gentamycin and treat for 10 days
- Treat all signs or symptoms of sepsis according to related protocols.

3-5-6 Asphyxia

Suspect birth asphyxia if:

- Evidence of fetal distress on the partograph
- History of long, complicated or difficult labor and/or delivery
- Poor condition at birth -poor color (cyanosis, pale or white)
- Bradycardia (heart rate < 100 beats per minute)
- Apneic episodes (>20 seconds)
- Reduced tone, floppy and lethargic
- Breathing with difficulty grunting and in-drawing (rate <30 or >60)
- Not breathing or only gasping
- Poor or absent sucking reflex
- Poor or absent gag reflex
- Lacks normal response to touching (i.e., no response or irritable response)
- Hypertonic, hyper-alert, startled look, jittery
- Convulsions.

Management of Asphyxia

- If convulsions occur, treat promptly with anti-convulsion medication and for suspected meningitis (page 203) to prevent worsening of the baby's condition
- Treat any breathing difficulty with oxygen as indicated by oxygen saturation monitor (page 183)

Classify the severity of asphyxia:

- In mild cases of asphyxia**, the baby may be jittery or hyperalert, with increased muscle tone, poor feeding, and a normal or rapid respiratory rate. These findings typically last for 24 to 48 hours before resolving spontaneously
- In moderate cases of asphyxia**, the baby may be lethargic and have breathing difficulties. The baby may have occasional episodes of apnea and/or convulsions for a few days. These problems usually resolve within one week, but long-term neurodevelopmental problems are possible
- In severe cases of asphyxia**, the baby may be floppy or unconscious and does not feed. Convulsions may occur for several days, and severe and frequent episodes of apnea are common. The baby may improve over several weeks or may not improve at all; if these babies survive, they usually suffer permanent brain damage.
- If the asphyxia is mild:

- Baby's not receiving oxygen, should be supported to begin breastfeeding
- Baby's receiving oxygen or otherwise unable to breastfeed, should be given expressed breast milk (page 302) and have oxygen saturation monitoring to determine amount of oxygen required
- Provide ongoing care as below.
- If the asphyxia is moderate or severe:
 - Establish an IV line (page 319), and give only IV fluid for the first 12 hours:
 - Restrict the volume of fluid to 60 ml/kg of the body weight for the first day, and monitor urine output (should be at least 1ml/Kg/hour)
 - If the baby urinates less than six times daily or produces no urine:
 - Do not increase the volume of fluid on the next day
 - When the amount of urine begins to increase, increase the volume of IV fluid daily according to the progression of fluid volumes in (page 321), regardless of the baby's day of age. There should be a maximum increase of 20 ml/kg per day until reaching 160 ml/kg per day in normal birth weight babies and 180 ml/kg per day for low-birth-weight babies
 - Once the convulsions are controlled and the baby shows signs of increased responsiveness, allow the baby to begin breastfeeding. If the baby cannot be breastfed, give expressed breast milk
 - All babies requiring oxygen should have oxygen saturations monitoring
 - Provide ongoing care as below.

Ongoing care of babies with asphyxia

- Treat for convulsions (page 188) or breathing difficulty (page 183) as necessary:
 - Assess the baby every two hours: If the baby's temperature is less than 36.5°C or more than 37.5°C, treat for abnormal body temperature (page 186)
 - Treat as convulsion (page 188) or breathing difficulties (page 183), if necessary.
- Encourage the mother to hold and cuddle the baby
- If the baby is lethargic or floppy, handle and move the baby gently to prevent injury. Support the baby's entire body, especially the head
- If the baby's condition is not improving after three days, assess again for signs of sepsis (page 194)
- If the baby's condition does not improve (i.e., continued lethargy, convulsions, or not breastfeeding or feeding poorly), refer to higher-level care
- If the baby has not had a convulsion for three days after discontinuing phenobarbital, the mother is able to feed the baby, and no other problems require hospitalization, discharge the baby
- Discuss with the mother the baby's prognosis and how to deal with the problems the baby may have at home

- Follow up in one week, or earlier if the mother notes serious problems (i.e., feeding difficulty, convulsions)
- If the baby is not breastfeeding well, advise the mother on alternative feeding methods including cup and spoon-feeding expressed breast milk. If the baby is feeding slowly, have the mother feed more frequently
- Before discharge assess the neurological status for physiotherapy.

3-5-7- Meningitis

- Perform a lumbar puncture (page 326) if not already done
- Give ampicillin and gentamicin IV according to the baby's age and weight (page 312). Note that the dose of ampicillin given for meningitis is double that for sepsis
- Confirm the diagnosis of meningitis if the:
 - White blood cell count in the cerebrospinal fluid (CSF) is $\geq 20/\text{mm}^3$ if the baby is < 7 days old, or $\geq 10/\text{mm}^3$ if the baby is ≥ 7 days old; **OR**
 - CSF culture or Gram stain is positive
 - If diagnostic is confirmed refer the baby to the healthcare facility that provide special care service.

3-5-8- Syphilis

3-5-8-1- Diagnosis of congenital syphilis infection for newborn at delivery service

- The diagnosis of congenital syphilis is complicated by the transplacental transfer of maternal antibodies to the fetus. This transfer of antibodies makes the interpretation of reactive serologic tests for syphilis in infants difficult. Cord blood should not be tested, as it too may be contaminated by the maternal blood. Therefore, no tests are routinely used for screening for congenital syphilis, and diagnosis is dependent on clinical examination and the mother's history of infection and treatment
- The baby should be examined at birth thoroughly for suspect signs of congenital syphilis:
 - If any sign below is present, refer the newborn to pediatric service or hospital:
 - Prematurity or low birth weight
 - Chronic nasal discharge
 - Jaundice (yellow conjunctiva)
 - Enlarged liver, spleen or lymph nodes
 - Rash-may be dry or blistering or scaling or wet, especially on hands, feet, or around mouth or anus

- Bone deformities-abnormal shape of the nose or legs
- If there are none of the above signs, ALL babies who are born to mothers with a positive syphilis test have to be treated for SYPHILIS with a single dose of Benzathine-Penicillin
- The baby should then be referred to the immunization service for routine vaccinations and also be referred to get DNA PCR testing for HIV.

3-5-8-2- Syphilis treatment for newborn baby

- Treat the syphilis by prescribing Benzathine penicillin G 50,000 units/kg/dose IM in a single dose is recommended to all babies born to infected mother even if the baby does not have any suspected signs of congenital syphilis.

3-5-8-3- Follow up on the infant

- Whilst the syphilis infected infant may be asymptomatic at birth, clinical signs of congenital syphilis infection can emerge at a later stage
- At each immunization visit (6th weeks, 10th weeks, 14th weeks and 9th months), the baby should be also examined for the same clinical signs of congenital syphilis that were looked for at birth: chronic nasal discharge, jaundice (yellow conjunctiva), enlarged liver, spleen or lymph nodes, rash which may be dry, blistering, scaling or wet, and located especially on hands, feet, or around mouth or anus. If any of these signs are present, it is recommended to refer the baby to the nearby pediatric service or the nearest referral hospital for urgent evaluation and immediate treatment.

3-5-9- Baby has multiple signs simultaneously

- Keep the following points in mind if the baby has multiple signs simultaneously:
 - A single health problem in a baby may be indicated by many signs (i.e., a baby with asphyxia may have convulsions, poor feeding, and breathing difficulty), while a single sign may point to many health problems (i.e., poor feeding may be a sign of sepsis, asphyxia, or small baby)
 - Even when multiple signs point to a single problem, the signs themselves often need to be treated; therefore, it is necessary to look for further guidance in the chapter corresponding to each sign that the baby has. For example, if a baby with asphyxia or sepsis is having both breathing difficulty and convulsions, ensure that management includes treatment for both problems, both asphyxia and sepsis

Problems that typically produce multiple signs include asphyxia, sepsis, and small baby (weight less than 2.5 kg at birth or born before 37 weeks gestation). Congenital syphilis, a specific kind of sepsis, may also produce multiple findings as mentioned above.

Remember that there is considerable overlap between the signs of asphyxia and sepsis, so distinguishing them is important for their appropriate management.

3-5-10- Care for a newborn whose mother is very ill or transferred

- Help the mother express breast milk. Consider alternative feeding methods until mother is well (section 8-1 and 8-2)
- Provide care for the baby, ensure warmth
- Ensure mother can see the baby regularly
- Transfer the baby with the mother if possible
- Ensure a knowledgeable and informed caretaker is available to care for the baby at home.

3-5-11- Red, swollen eye or draining pus

General management

- Wearing clean gloves for examination:
 - Clean the eyelids using sterile normal saline or clean (boiled and cooled) water and a clean swab, cleaning from the inside edge of the eye to the outside edge and discard after a single use
 - Have the mother do this if possible
 - Repeat four times daily until the eye problems have cleared
 - Have the mother wash the baby's face at least daily using clean water, and dry with a clean cloth.

If the problem developed while the baby was hospitalized or more than one baby with eye problems from the same ward is seen within a two-day period, suspect a nosocomial infection. Infection Control Team (ICT) should be alerted to carry out an investigation.

Eyes draining pus (conjunctivitis)

- Take a specimen of pus, if it can be easily obtained, using a sterile cotton swab (take care to avoid direct contact with the baby's eyes) and then send a sample of the pus to the laboratory for Gram stain, culture (including possible gonococcus) and sensitivity
- Determine the probable diagnosis (See below table).

Red or swollen eyes and sticky eyelids but no pus draining from eyes

- If the eye problem continues for more than four days (despite the general management described above), but there is still no pus draining from the eyes:
 - Give erythromycin by mouth (See page 314) for 14 days
 - Apply 1% tetracycline ointment to the affected eye(s) four times daily until the eye(s) is no longer red, swollen, or sticky
- If pus begins to drain from the eye, see the eyes draining pus above
- If there are no other problems requiring hospitalization, discharge the baby after advising on newborn care, and have the mother continue the treatment at home.

Differential diagnosis on conjunctivitis

Findings			Probable Diagnosis
History	Examination	Gram Stain Investigation and Culture Results	
<ul style="list-style-type: none"> • Time of onset day 3 or later 	<ul style="list-style-type: none"> • One eye involved • Moderate amount of pus. 	<ul style="list-style-type: none"> • Gram-positive cocci • Culture positive for staphylococcus. 	<p>Conjunctivitis due to Staphylococcus aureus, see below.</p>
<ul style="list-style-type: none"> • Mother has a sexually transmitted infection • Eye prophylaxis either not given or given after first hour of life • Time of onset day 1 or later. 	<ul style="list-style-type: none"> • Both eyes involved • Large amount of pus. 	<ul style="list-style-type: none"> • <i>Gram-negative diplococcic</i> • <i>Culture positive for gonococcus.</i> 	<p>Conjunctivitis due to gonorrhea, see below.</p>
<ul style="list-style-type: none"> • Watery discharge from eye at first, then changing to pus • Mother has a sexually 	<ul style="list-style-type: none"> • Both eyes involved • Small to moderate amount of pus. 	<ul style="list-style-type: none"> • No organisms seen on Gram stain • Culture negative. 	<p>Conjunctivitis due to chlamydia.</p>

transmitted infection • Time of onset day 5 or later.			
• Silver nitrate drops put in eyes at birth • Time of onset day 1 or 2.	• Both eyes involved • red and swollen eyes • Small amount of pus.	• No organisms seen on Gram stain • Culture negative.	Chemical irritation. No treatment is necessary.

The diagnosis cannot be made if a finding in bold is absent. The presence of a finding listed in bold, however, does not guarantee the actual diagnosis. The diagnosis is definitely confirmed if a finding listed in italic is present. Findings in plain text are supportive findings; their presence helps to confirm the diagnosis, but their absence cannot be used to rule out a diagnosis.

Note: Silver nitrate drops should never be put in a baby's eyes as it can be dangerous.

Management of specific conditions conjunctivitis due to *s. Aureus*

- Apply 1% tetracycline ointment to the affected eye(s) four times daily for five days. There is no need for systemic antibiotics
- Continue to clean the baby's eyes and wash the baby's face as described under the above general management
- If the mother and baby can stay near the health care facility, the baby does not have to be admitted to the hospital for this treatment.

Conjunctivitis due to gonorrhoea

- Give ceftriaxone 50mg/kg IM in a single dose (maximum: 125mg)
- There is no need for antibiotic eye ointment
- Continue to clean the baby's eyes and wash the baby's face as described under general management
- If the mother and baby can stay near the health care facility, the baby does not have to be admitted to the hospital for this treatment
 - Treat the mother and her partner(s) for gonorrhoea according to National Guideline on STI and RTI Case Management.

Conjunctivitis due to chlamydia

- Give erythromycin syrup by mouth 25 mg /kg for 14 days

- After cleaning the eyes, apply 1% tetracycline ointment to both eyes four times daily until the eyes are no longer red, swollen, sticky, or draining pus
- If the mother and baby can stay near the health care facility, the baby does not have to be admitted to the hospital for this treatment
- Treat the mother and her partner(s) for chlamydia according to National Guideline on STI and RTI Case Management

Note: If laboratory cannot perform identification of *Gonococcus* and *Chlamydia* infection, give syndromic care and treatment according to the National Guidelines on STI/RTI case management.

3-5-12- Umbilical infections

Umbilicus or nearby skin red and swollen, draining pus, or foul-smelling.

- Wearing clean examination gloves:
 - Wash the umbilicus using an antiseptic solution as below and clean gauze sponges
 - Clean the umbilicus and the area around it with 0.5% gentian violet four times per day until there is no more pus coming from the umbilicus. Have the mother do this if possible
- If the area of redness and swelling extends more than 1 cm beyond the umbilicus, treat for severe infection of the umbilicus as below
- If the infection has cleared, the baby is feeding well, and no other problems that requires hospitalization, discharge the baby after advising on newborn care.

Severe infection of umbilicus

- If the infection developed while the baby was hospitalized or more than one baby with an infection of the umbilicus from the same ward is seen within a two-day period, suspect a nosocomial infection. Infection Control Team (ICT) should be alerted to carry out an investigation
- Treat for sepsis (page 194).

3-5-13- Severe jaundice

Any jaundice <24 hours old or jaundice on palms and soles at any time. Must clearly rule out sepsis (page 194).

Note: Severe jaundice requires detailed investigation and special care. Phototherapy should not be instituted in a hospital without this capacity and the baby should be urgently referred. Details of management of severe jaundice can be found in the

National Guideline for Treatment. Encourage breastfeeding on the way. If feeding difficulty, give expressed breast milk by cup or spoon. At health facilities with capacity to provide phototherapy:

1. Measure bilirubin. If using non-invasive methods, calibrate prior to use according to manufacturer's instructions
2. Plot result on jaundice chart
3. Commence treatment with phototherapy if within the phototherapy zone on the jaundice chart
4. Ensure eyes are covered with a cleaned mask
5. Baby should be in a warmer (i.e., incubator or open bed with radiant warmer) with as much skin exposed as possible
6. Measure bilirubin daily, plot on jaundice chart and discontinue treatment if level below phototherapy zone
7. Assess baby's hydration status and temperature at least every 8 hours
8. Encourage breastfeeding on demand. Remove eye mask during breastfeeding. NEVER withhold breastfeeding because baby is receiving phototherapy
9. Measure bilirubin level once 24 hours after discontinuation of phototherapy. Recommence treatment with phototherapy if within the phototherapy zone on the jaundice chart.

Notes: There is no benefit but likely risk of harm if phototherapy is continued once bilirubin level is in the non-treatment zone even if the skin remains yellow.

Bilirubin in the skin rapidly disappears under phototherapy. Skin color cannot be used as a guide to serum bilirubin level while the baby is receiving phototherapy and for 24 hours after discontinuing phototherapy.

Do not use (direct or indirect) sunlight to treat jaundice. The baby is at risk of dehydration and severe sunburn.

3-5-14- Skin infection

- If the infection developed while the baby was hospitalized or more than one baby with a skin infection from the same ward is seen within a two-day period, suspect a nosocomial infection. Infection Control Team (ICT) should be alerted to carry out an investigation
- Wash hands with clean water and soap. Wearing clean examination gloves:
 - gently wash off pus and crusts with boiled and cooled water and soap
 - dry the area with clean cloth
 - Paint with 0.5% gentian violet solution.

- Observe for signs of sepsis (i.e., poor feeding, vomiting, breathing difficulty, temperature >37.5 or <36.5 °C) and treat accordingly (page 194)
- Count the number of pustules or blisters, determine whether they cover less or more than half of the body, and treat as described below.

Fewer than 10 pustules/blisters or covering less than half the body with no signs of sepsis:

- Observe the baby for five days:
 - If the pustules/blisters clear within five days and no other problems require hospitalization, discharge the baby
 - If most of the pustules/blisters are still present after five days but the baby does not have signs of sepsis, give cloxacillin by mouth according to the baby's age and weight for five days (page 312).

Ten or more pustules/blisters or covering more than half the body with no signs of sepsis:

- Open the white center of a pustule using a sterile lancet. Take a specimen of pus using a sterile cotton swab, and send it to the laboratory for culture
- Give cloxacillin IM according to the baby's age and weight (page 312)
- Assess the baby's condition at least once daily for signs of improvement (pustules/blisters are not spreading and are beginning to dry up and heal):
 - If the pustules/blisters are improving after three days of treatment with antibiotics, continue cloxacillin to complete five days of treatment
 - If the pustules/blisters are not improving after three days of treatment with antibiotics:
 - If the culture is positive, change the antibiotic according to the results of the culture and sensitivity, and give the antibiotic for an additional five days
 - If the culture is not possible or the organism cannot be identified, continue giving cloxacillin and also give gentamicin according to the baby's age and weight for seven days (page 312)
- Observe the baby for 24 hours after discontinuing antibiotics. If the pustules/blisters have cleared, the baby is feeding well, and no other problems require hospitalization, discharge the baby.
- **Skin pustules/blisters with signs of sepsis**, treat for sepsis (page 194).

Cellulitis/abscess

- If there is a fluctuant swelling, incise and drain the abscess:
 - Attach the 22-gauge needle to the 10 ml syringe, fill the syringe with IV fluid, and remove the needle

- Place sterile drapes over the area surrounding the abscess so that only the abscess is exposed
- Inject local anesthetic around the abscess:
 1. Draw the local anesthetic into the 3-ml syringe and attach the 25-gauge needle
 2. Inject local anesthetic intradermally to raise a small "bleb" in the skin
 3. After one minute, attach the 22-gauge needle to the syringe, insert the needle through the "bleb" in the skin, and infiltrate with local anesthetic the area around the abscess
- After waiting two minutes to allow the local anesthetic to take effect, make an incision over the fluctuant area of the abscess
- Using a sterile swab, take a sample of the pus, and send it to the laboratory for culture
- Use sterile tissue forceps to break up the pocket of pus
- Flush out the abscess with IV fluid, and leave the wound open
- Give cloxacillin IM according to the baby's age and weight (page 312)
- Assess the baby's condition at least once daily for signs of improvement:
 - If the cellulitis/abscess is improving after five days of treatment with the antibiotic, continue cloxacillin to complete 10 days of treatment
 - If the cellulitis/abscess is not improving after five days of treatment with the antibiotic:
 - If the culture is positive, change the antibiotic according to the results of the culture and sensitivity and give the antibiotic for an additional 10 days
 - If the culture is not possible or the organism cannot be identified, continue giving cloxacillin and also give gentamicin according to the baby's age and weight (page 312) for 10 days. Observe the baby for 24 hours after discontinuing antibiotics.

If the cellulitis/abscess has cleared, the baby is feeding well, and no other problems require hospitalization, discharge the baby.

Thrush in napkin area

- Apply nystatin cream to the lesions or swab the lesions with 0.5% gentian violet solution at every napkin change, continuing for three days after the lesions have healed
- Ensure that the napkin is changed whenever it is wet or soiled.

Thrush in mouth

- Swab the thrush patches in the baby's mouth with nystatin oral solution or 0.5% gentian violet solution four times daily, continuing for two days after the lesions have healed
- Have the mother put nystatin cream or 0.5% gentian violet solution on her breasts after breastfeeding for as long as the baby is being treated.

Cut

- Clean the cut using gauze soaked in antiseptic solution (2.5% polyvidone iodine; note that other antiseptic solutions may burn)
- If the edges of the cut are open, pull them closed with a butterfly strips
- Cover the area with a simple bandage to keep the cut clean and dry
- If no other problems require hospitalization, discharge the baby
- Explain to the mother what the signs of local infection are (i.e., redness, heat, and swelling of the skin around the cut):
 - Ask the mother to bring the baby back if she sees signs of local infection
 - If signs of local infection are seen, remove the bandage/strips and treat with a topical antibiotic ointment three times daily for five days, leaving the cut uncovered
- Have the mother return with the baby in one week to remove the bandage/strips, if necessary. If there is no infection, no further follow-up is needed.

Abrasion

- Clean the abrasion using cotton-wool balls soaked in antiseptic solution (2.5% polyvidone iodine; note that other antiseptic solutions may burn)
- Keep the wound clean and dry, and instruct the mother how to do so
- If no other problems require hospitalization, discharge the baby
- Explain to the mother what the signs of local infection are (i.e., redness, heat, and swelling of the skin around the cut):
 - Ask the mother to bring the baby back if she sees signs of local infection
 - If signs of local infection are seen, treat with a topical antibiotic ointment three times daily for five days, leaving the abrasion uncovered
- Have the mother return with the baby in one week. If there is no infection, no further follow-up is needed.

3-5-15- Treatment for birth injury or malformations

If the baby has signs consistent with birth injury or malformation, provide treatment and advice as follows:

Signs	Treat and Advise
<p>Birth Injury:</p> <ul style="list-style-type: none"> • bruises, swelling on buttocks • swollen head – bump on one or both sides • abnormal position of legs (after breech presentation) • asymmetrical arm movement; arm does not move. 	<p>Birth Injury:</p> <ul style="list-style-type: none"> • explain to parents that it does not hurt the baby; it will disappear in a week or two and does not usually require special treatment • DO NOT force legs into a different position • gently handle the limb that is not moving; DO NOT pull • If broken bone suspected, give paracetamol, perform x-ray and splint if needed.
<p>Malformation:</p> <ul style="list-style-type: none"> • club foot (talipes) • cleft palate or lip • eye deviation or physical abnormality • open tissue on head, abdomen or back. 	<ul style="list-style-type: none"> • refer for special treatment if available • help mother to breastfeed; if not successful, teach to cup and/or spoon feed expressed breast milk; plan to follow up • Advise adjustment surgery if available • refer for special evaluation if available; cover with sterile cloth soaked in sterile saline • refer for special treatment if available.
<p>Severe Malformation:</p> <ul style="list-style-type: none"> • other abnormal appearance. 	<p>Severe Malformation:</p> <ul style="list-style-type: none"> • refer for special treatment if available.

For details on the children neonatal screening, see section 9.

3-5-16- Diarrhea

There are non-infectious causes of diarrhea, but sepsis is the most common cause during the newborn period. Strict infection prevention practices must be observed at all times when caring for a baby with diarrhea to prevent the spread.

Assess and manage the baby who presents with diarrhea, as follows:

General treatment:

- Continue to breastfeed baby
- If the baby cannot breastfeed, give expressed breast milk
- If the mother is giving the baby any food or fluid other than breast milk, tell her to stop
- Request the mother to breastfeed more often
- If the baby has signs of dehydration i.e., sunken eyes, loss of skin elasticity, or dry tongue) or sepsis (i.e., poor feeding, vomiting, breathing difficulty), give fluids while allowing the baby to continue to breastfeed. If dehydration is present, increase the volume of fluids by 10% of baby's body weight on the first day that dehydration is noted
- Assess the baby in 12 hours:
 - if diarrhea still persist, continue the increased volume of IV fluid for an additional 24 hours
 - if the diarrhea stop in the last 12 hours, adjust fluid to maintenance volume according to the baby's age.

Note: For assessment, signs, symptoms and management of diarrhea, see IMCI guideline.

3-5-17- Low blood glucose**Blood glucose less than 25mg/dl (1.1 mmol/l). Risk factor:**

- Prematurity
- Low birth weight
- Diabetic mother
- Poor or no breastfeeding
- Infection (suspected or proven)
- Asphyxia
- Hypothermia.

Signs of blood glucose less than 45mg/dl (2.6mmol/l)

- Jittery (shaky)
- Lethargic.

Blood glucose less than 25mg/dl (1.1 mmol/l)

- Establish an IV line if one not already in place. Give glucose of the baby weight IV slowly over five minutes

- If an IV line cannot be established quickly, give 2 ml/kg body weight of 10% glucose by gastric tube
- Infuse 10% glucose daily to maintain the sugar level according to the baby's age and weight
- Measure blood glucose 30 minutes after the bolus of glucose:
 - If the blood glucose is less than 25 mg/dl, repeat the bolus of glucose as above and continue the infusion and repeat the measurement after 30 minutes
 - If the blood glucose is less than 45 mg/dl but is at least 25 mg/dl at any measurement, continue the infusion and repeat the blood glucose measurement every three hours until the blood glucose is 45 mg/dl or more on two consecutive measurement; then return to normal frequency of monitoring
- Encourage breastfeeding. If the baby cannot be breastfed, give expressed breast milk
- As the baby's ability to feed improves, slowly decrease (over a three-day period) the volume of IV glucose while increasing the volume of oral feeds. Do not discontinue the glucose infusion abruptly.

Blood glucose less than 45mg/dl but at least 25 mg/dl

- Encourage breastfeeding. If the baby cannot be breastfed, give expressed breast milk
- Measure blood glucose in an hour:
 - If the blood glucose is less than 25 mg/dl, treat as described above
 - If the blood glucose is still less than 45 mg/dl but at least 25 mg/dl, increase the frequency of breastfeeding or increase the volume of expressed breast milk given
 - Once the blood glucose is 45 mg/dl or more on two consecutive measurements;
 - return to normal frequency of monitoring.

Section 4: Comprehensive Abortion Care and Post-abortion Care

The details of this section are available in The Comprehensive Abortion Protocol (first trimester) and Comprehensive Abortion Protocol for fetus more than 12 to 24 weeks gestation.

4-1 Clinical assessment, diagnosis, and options

Before an abortion procedure or management of post-abortion complications, it is essential to clinically assess the woman to determine her medical history and pregnancy status. Assessment must include:

- History
- Physical examination and
- Various laboratory tests.

This allows the health care provider to properly diagnose the woman's situation and help her to decide on the best option for her situation;

Comprehensive Abortion Care (CAC)	Post Abortion Care (PAC)
<p>Client history</p> <ul style="list-style-type: none"> • First day of last menstrual period (LMP) • Signs and symptoms of pregnancy • Abnormal vaginal bleeding • History of previous pregnancies (i.e., Ectopic pregnancy miscarriage, live births, fetal deaths) • Sexual history • Contraceptive use. 	<p>Client history</p> <ul style="list-style-type: none"> • first day of last menstrual period • bleeding (duration, foul smelling, quantity of concept dropped) • pain: (duration, intensity, location of abdominal or shoulder pain, need to think about ectopic pregnancy) • history of any recent abortion (number of days) • contraceptive use • history of fever or chill, or flu-like symptoms • nausea, vomiting.
<p>General health</p> <ul style="list-style-type: none"> • Any medical status (bleeding disorders, diabetes/nephrotic syndrome, asthma, hypertension, heart disease) • History of clotting disorders. • Haemophilia history • Surgical history (uterus surgery or c-section, pelvic or abdominal surgery) • HIV status and history or presence of STI 	

- History of medication and current medication
- Drug allergies
- Alcohol or drug use, including smoking.

Psychosocial status

- Knowledge and understanding of pregnancy-related issues
- Social and family support (marital status, job, presence of family member)
- Screen for violence
- Physical and cognitive disability, or mental illness.

Physical examination:

- General health (malnutrition anemia, poor health) and vital sign
- Screening for violence
- Listen to the lung, heart rate, and feel the abdomen
- Pelvic examination:
 - Examine the external vagina and perinea
 - Examination by speculum:
 - Check cervix
 - Note any abnormal vaginal discharge
 - Check for any infection or STD at the cervix
- Examine bi-manually to:
 - Assess the gestational age;
 - Assess the location and situation of the uterus
 - Check for ectopic pregnancy, uterine tumor, uterine tube tumor or abnormality of uterine.

Physical examination:

- General health (i.e., malnutrition, anemia, poor health) and vital sign
- listen to the lung and heart rate
- Examine the fingers and toes
- Abdominal examination, look for bowel sound, abdominal distension, rigidity, and abdominal mass. If the abdominal mass is present press gently to know how much it pains and location and rebounds tenderness.
- Pelvic examination:
 - Look at external vagina and perinea and record if any sign of STD
 - Examination by speculum for:
 - Present of any object or product of concept at vaginal or cervix
 - Any foul smell vaginal bleeding or discharge
 - Quantity of bleeding
 - Dilatation of cervix
 - Any tear at the cervix or vagina
 - Carefully do bi-manual examination and note:
 - Size of the uterus
 - Presence of abnormal pelvic mass

	<ul style="list-style-type: none"> ▪ Tenderness: severity, location, cause of pain (at rest, with touch and pressure, with the movement of the cervix).
<p>Laboratory Tests</p>	<p>Laboratory Tests</p>
<ul style="list-style-type: none"> • Urine pregnancy test (helpful if typical signs of pregnancy unclear or unsure about whether the woman is pregnant) • Hemoglobin or hematocrit (if anemia suspected) • Echography examination. 	<ul style="list-style-type: none"> • Hemoglobin or hematocrit • Complete blood count • Echography examination.

4-2 Management options

The appropriate option for the woman is based on the clinical assessment and the woman's desires and consent, and following the Abortion Law of Cambodia:

- Continue with the pregnancy: for woman seek abortion service but have a change of heart and decide to keep the baby – refer for antenatal care and other services
- Abortion – manual vacuum aspiration (MVA), electric vacuum aspiration (EVA) or medication abortion (for gestational age less than 9 weeks) for the first-trimester abortion and drug usage, and dilatation and evacuation (D&E)

- For the 12 to 24 weeks of pregnancy. Explained to the woman about the procedure so that she knows what to expect and can consent to the procedure.

4-3 Counseling and informed consent

All women should be provided with high-quality comprehensive abortion or post-abortion counseling that includes the following:

- Counseling and decision-making concerning pregnancy options (for the woman who seek abortion care)
- Benefits, consequences, and challenges of abortion procedure or post-abortion/miscarriage care and pain management method
- Pre-procedure counseling including uterine evacuation method and pain management method
- Informed consent with thumbprint affixed on an Agreement after receive correct information
- Post-abortion recovery and follow up
- Post-abortion contraceptive counseling
- Any concern related to a woman's health.

Counseling sessions should cover the following:

- Accurate information about the woman's medical condition, test results, pregnancy options, the abortion or Post-abortion care procedure, and pain management options
- Re-check to ensure that the woman understands her diagnosis, the procedure and pain management plan, and any follow-up care that is needed
- Give emotional support about her pregnancy or the abortion, and her reproductive health future.

4-4 Pain management

The purpose of pain management is to ensure that the woman experiences the minimal possible amount of anxiety and discomfort, while also ensuring the least risk to her health. It is important to assess the needs of each woman individually when determining the appropriate pain management method. Under no circumstances should pain control medication be withheld or should the woman be treated roughly. In almost all instances of uterine evacuation involving cervical dilatation, instrumentation of the uterus, and post-procedural cramping, some pain and cramping will occur. For medication abortion, the pain usually begins after administration of the drug as the uterus contracts and diminishes after its contents are expelled through the cervix. The three categories of pain medication are as follows:

- Analgesia – which can be given as a standard measure for cramping and pain before the procedure as well as for post-procedure pain
- Anesthetics – which numb all physical sensations around the paracervical block or promote unconsciousness
- Anxiolytics/Sedatives – which depress the functions of the central nervous system and are used to produce calm, relax muscles, and promote sleep.

4-5 Uterine Evacuation

Uterine evacuation is the removal of the contents of the uterus. The methods used for uterine evacuation include:

- Medications
- Vacuum aspiration (MVA and EVA)
- Cervical dilatation and evacuation (D&E) for 12 – 24 weeks of pregnancy.

4-5-1- First trimester safe abortion

Vacuum aspiration and medication abortion are preferred in the first trimester of the pregnancy.

- MVA (page 288)
- Medication abortion is done in the first trimester of the pregnancy (below 9 weeks) by first giving mifepristone 200 mg orally, and giving misoprostol 800 mcg 24 hours later vaginally. This drug combination in Cambodia is called Medabon/Mifeso.

4-5-2 Comprehensive abortion for the fetus more than 12 to 24 weeks gestation: the common method is medication and dilatation and evacuation (D&E) (for detail, refer to the national protocol on comprehensive abortion for the fetus more than 12 to 24 weeks gestation).

The abortion by dilatation and evacuation is permitted for the fetus up to 16 weeks gestation by a professional provider and must be decided by at least two doctors (who have been trained on comprehensive abortion for the fetus more than 12 to 24 weeks gestation). This procedure must be carefully performed because it may lead to surgery or death.

Medical abortion must be performed by mifepristone with misoprostol or misoprostol only. Below is the summary list of medicine regime for abortion for a fetus more than 12 to 24 weeks gestations:

Mifepristone + Misoprostol	Misoprostol only
----------------------------	------------------

<ul style="list-style-type: none"> • Oral administration: Mifepristone 200mg, after 24 to 48 hours use • Misoprostol 400mcg, vaginal administration or hold it at the base of the jaw or under the tongue every three hours until the contents and placenta are expelled. 	<p>Misoprostol 400mcg, vaginal administration or hold it at the base of the jaw or under the tongue every three hours until the contents and placenta are expelled.</p>
<p>Note: If the contents is not expelled, make a medical reevaluation at the 5th dose.</p>	

Special conditions:

- Medical abortion for the fetus more than 12 to 24 weeks gestation on the uterus with a surgery scar, be careful of the location of the fetus and how the placenta clings at the surgery scar or any severe consequence that may lead to surgery or death. For pregnancy that used to have surgical scar on uterus must refer to higher facility, which can manage this.
- The termination of pregnancy more than 24 to 26 weeks gestation is permissible at a hospital with resources and the capability of emergency surgery and blood infusion as necessary.

4-6 Recovery and Follow-up Care

Observation: The woman’s vital signs should be observed until her condition is stable, can walk comfortably on her own, and can eat and drink fluids without vomiting. The woman’s vital signs should be monitored immediately after the procedure, again in 30 minutes, and again before she is discharged.

Aftercare Information

- Normally, she will experience some vaginal bleeding for several weeks
- She may have some cramping, which is normal
- She should return for a follow-up appointment (1-2 weeks after the procedure)
- She can become pregnant again in 10 days after the abortion/miscarriage
- Contraceptive methods are available to help her prevent future unwanted pregnancies.

The following warning signs should also be explained to the woman and, if these occur, she should return to the health facility immediately:

- Fever and chills
- Heavy vaginal bleeding

- Foul-smelling lochia
- Severe abdominal pain
- Inability to tolerate oral intake; vomiting or feeling nauseous.

4-7 Contraceptive Counseling and Services

Family planning counseling is a critical aspect of abortion that must be provided atost-abortion. Women should start birth spacing right after abortion or post-abortion care even if she wishes to have another child, it should be for at least 6 months before becoming pregnant again. If the woman chooses IUD, the IUD normally should be inserted at the same time as an MVA by ensuring that there is no more uterus content or any infections.

The aim of contraceptive counseling for women who undergo an abortion service is to help the woman and her partner:

- Understand the factors which led to dangers when having unwanted pregnancy
- Understand that she could become pregnant again soon after her abortion
- Understand that she can delay or prevent another pregnancy by using contraception
- Understand that various methods are available
- Choose an appropriate method
- Obtain an appropriate contraceptive method and use it effectively
- Understand that emergency contraception can be used within 72 hours of unprotected sexual intercourse to prevent pregnancy
 - ✚ Procedure for mother
 - ✚ For detailed instruction, see the National Protocol on Comprehensive Abortion.

Section 5: Sick Mother and Newborn Care

This chapter summarizes the care protocols for mothers with special medical conditions.

5.1. Care for HIV-positive mothers

Before pregnancy: HIV-positive women and their partners alike ought to receive Pre-Art/Art counseling to decide on contraceptive methods, including the use of condoms to reduce viral transmission; they should, after counseling, also be provided with the contraceptive method of their choice.

If the couple has questions about a possible future pregnancy, they should be counseled on prognosis for the mother and baby, especially those related to pregnancy outcome and risks of mother-to-child transmission. As much as possible, any pregnancy should be planned in order to benefit from antiretrovirals to minimize HIV transmission.

During pregnancy: Early in during the pregnancy, an HIV-positive woman should be counselled on the health condition for her and her baby if she chooses to continue the pregnancy. , she should be supported and monitored by Pre-ART/ART services, as well as antenatal clinic. If ARVs have not been initiated previously, the woman will receive ARVs to reduce the risk of mother to child transmission.

In case HIV is first diagnosis during pregnancy, the same procedure should be followed – counseling on prognosis for mother and baby; , discussion on continuation of pregnancy, , and prescription of ART as a means of prevention of mother-to-child transmission (PMTCT). Upon antenatal care, the mother will be given information on baby feeding options; different contraceptive methods to prevent future pregnancy, and postpartum sterilization options.

At birth: HIV-positive women will receive ARVs based on the protocols. For vaginal delivery, it is important to minimize potentially traumatic interventions such as vacuum extraction.

Postpartum: Similar to the pregnancy period, women should receive continued emotional support and continued PMTCT regime, as well as newborn feeding support. Breastfeeding is the only ideal option because other mixed methods could increase the risk of mother-to-child transmission.

The baby should be followed at a special clinic to determine HIV status. .The mother needs to receive family planning consultations and continued support on ARVs, and other support she requires.

Care for the newborn of an HIV-positive mother

Below is a summary of care and support for HIV-positive mothers (see detailed information in the National Guidelines on PMCTC). All women, regardless of their HIV status, should receive appropriate postpartum care and health education for themselves and their infant, including information about maternal , nutrition, infant feeding, general health education, signs, and symptoms of postnatal infection, other danger signs in mothers and their newborns, immunizations, and birth spacing. In addition, HIV-infected women, need to be prescribed ARV prophylaxis for themselves and their infants, and to be supported to access HIV-exposed newborn follow-up, continued treatment, and care and support for themselves and their family.

Breastfeeding:

- **From birth to 6 months of age**

- All women, regardless of their HIV status, should be encouraged to exclusively breastfeed their babies for the first six months of life. Exclusive breastfeeding means giving only breast milk to the babies without giving any other things, including water. Mixed feeding will increase the risk of HIV transmission, and reduces the benefits of delaying conception for the mother and health benefits for newborns.
- An HIV-positive mother on AVR prophylaxis must receive needs to continued, lifetime treatment for their health.

- **After 6 months of age**

- An HIV-negative mother and mother with HIV status unknown must begin giving complementary feeding and continue breastfeeding until at least 24 months.
- HIV-infected mother whose newborn is HIV-uninfected (Negative HIV-DNA PCR) or newborn of uncertain HIV status must begin giving complementary feeding and continue and breastfeeding until 24 months or longer amid the mother's lifelong continuation of ART and support to adhere to ARV prophylaxis
- With an HIV-positive mother, an HIV-infected newborn (Positive HIV-DNA PCR) must begin giving complementary feeding and breastfeeding until 24 months of age or longer as recommended for all other people.

- **Breastfeeding substitute:**

Under the correct circumstances, HIV-positive mothers who have chosen not to breastfeed their HIV-uninfected or newborns of uncertain HIV status should be provided with an international standard commercial infant formula milk as a replacement for breast milk. However, fresh cow's milk, soy milk, or condensed milk should not be given. Community follow-up should include counseling and support for the mother to maintain her infant feeding choice and to avoid mixed feeding. Other things include a reminder and referral support for the mother and infant to attend

their 6-week postnatal appointment(s) for immunization, early infant diagnosis, review of ART eligibility, nutrition assessment, and counseling, etc.

- **Birth spacing**

To avoid unintended unwanted pregnancies, all women and HIV-positive women alike should take up a contraceptive method in the 6th week after the delivery. Birth spacing information and referrals to birth spacing services should be provided to women, especially HIV-positive ones, for accessing short-term contraception of their choice, and Pre-ART/ART (refer to Protocols of Contraception for HIV-positive People). Contact should be established as soon as possible with CBOs to support early follow-up.

5.2. Care for diabetic mothers

Before pregnancy: For women of reproductive age with diabetes, it is important to provide timely counseling on possible future pregnancies. The prognosis for a future pregnancy will depend very much on the overall status of the woman, and, notably, on whether she has vascular complications from her diabetes or not. A woman with kidney insufficiency and significant proteinuria, retinal damage, and high blood pressure run much higher risks of pregnancy complications – preeclampsia, perinatal death – than a woman with a short history of well-managed diabetes. Either when pregnancy is planned, or when early pregnancy is diagnosed, the woman should be wholly on insulin, and any anti-diabetics should be suspended.

During pregnancy: If the diabetic woman decides to continue the pregnancy, she should be managed carefully in collaboration with a diabetes specialist and an obstetrician. This is because her insulin requirements will increase gradually throughout the pregnancy, and her obstetric risks – of preeclampsia, too large a fetal growth, vascular complications, and also from her eyes – are significant.

During pregnancy, the diabetic mother should be counseled on family planning, including post-partum sterilization. In the case if the diabetes is only first discovered during pregnancy, so called gestational diabetes, she may not require medication but only diet. She should be monitored as recommended above, however.

At birth: Vaginal birth is normally recommended, and a c-section is recommended only when the medical condition requires it. During the time of giving birth, the insulin needs of the woman fall drastically, and her blood glucose, therefore, should be closely monitored and managed. The baby runs an increased risk of hypoglycemia in the first days, particularly if the mother has had too high a blood sugar level during the pregnancy. It should be carefully monitored in a newborn ward.

Postpartum: The mother and baby should remain in hospital until the mother's blood sugar level is stable. Family planning counseling and provision are essential during the postpartum period.

Provisional translation

Care for newborn of a diabetic mother

Infants of diabetic mothers have a higher risk of hypoglycemia in the first three days of birth despite sufficient breastfeeding.

- Encourage and support mother early and frequent breastfeeding, eight or more times daily, day and night.
- If the baby is less than 3 days old, observe the baby until the third day of age:
 - Measure blood glucose at the following times:
 - at 3 hours of age or on admission
 - 3 hours after the first measurement, then every 6 hours for 24 hours or until the blood glucose level has been normal for 2 consecutive measurements.
 - If the blood sugar level is below 45 mg/dl (2.6 mmol/l), initiate treatment of hypoglycemia (see page 214)
 - If the blood sugar level remains normal for 3 consecutive days, the baby is feeding well., and there are no other sign indicates the need for hospitalization, the baby can be discharged.
- If an infant is 3 days old or older and does not show any sign of a low blood sugar level (lethargy, jitteriness), observation is not required. If the baby is feeding well , and there are no other sign indicates the need for hospitalization, the baby can be discharged.

5.3. Care for mothers with tuberculosis

Before pregnancy: It is advisable to complete any ongoing tuberculosis treatment before starting a pregnancy (if possible). It is thus important that staff members of tuberculosis clinics ensure that women of reproductive age get family planning counseling and access to preventative methods.

During pregnancy: A mother who gives birth while still being in a contagious state of pulmonary tuberculosis runs an extremely high risk of infecting her newborn baby. The strains of carrying untreated TB also is a burden for the woman, in terms of nutrition, fetal growth, and even maternal mortality. It is thus important to ask very thin pregnant women if they have a cough and to identify pregnant women suffering from a cough having fever and sweat during night time for more than 2 weeks. They should be examined for pulmonary tuberculosis as soon as possible, usually through a sputum examination or Genexpert. If found positive, antituberculous treatment should be initiated at once. The only antituberculous drug that should not be used during pregnancy is streptomycin. Two weeks after initiation of the treatment, the mother is no longer contagious and thus no longer a threat to her newborn baby. The mother, however, should complete the TB treatment and controls.

Care for infants of a mother with TB

- If the mother has active lung tuberculosis and was treated for less than 2 months or has been tested positive for TB after the delivery
 - Avoid the tuberculosis vaccine (BCG) (please refer to the illustration). Vaccination can be given only after treatment using isoniazid
 - Give isoniazid 10 mg per 1 kg of the infant once every day as a preventative treatment
 - Constantly look for signs or symptoms indicative of TB. If the infant is suspected of having TB, cease the preventative treatment and perform a diagnosis
 - When an infant is 6 weeks old, perform another assessment and observe any weight gain, and take an X-ray of the chest if possible. If an active disease is detected, initiate immediate full TB treatment
 - If the infant is healthy and tested negative for TB, continue the isoniazid treatment for 6 months
 - Delay a BCG vaccination for 2 weeks after the completion of the treatment. If the BCG had been given already, administer another dose 2 weeks after the end of the isoniazid treatment
- Reassure the mother that she can safely breastfeed the infant
- Follow up in 2 weeks to assess any weight gain.

5.4. Care for mothers with heart disease

Before pregnancy: Women of reproductive age with severe heart disease should receive counseling on a possible future pregnancy from their physician. If pregnancy is counter-indicated due to the severity of heart disease, the woman should receive good family planning counseling and access to preventative methods.

During pregnancy: If the woman decides to continue her pregnancy, she should be monitored by her physician in collaboration with an obstetrician. From the 2nd trimester onwards, the demands on the woman's blood circulation increase gradually. Both blood volume and cardiac output normally increase a lot. A woman with a severe cardiac condition risks becoming decompensated and will require careful monitoring and treatment to ensure a successful outcome for the mother and her baby. During pregnancy, she should be counseled on the family planning options, including postpartum sterilization.

At birth: Vaginal delivery is most preferred. If the woman has severe fatigue or incipient cardiac decompensated, ending birth by vacuum extraction is an option and great care should be taken not to give the woman too much fluid, which might initiate cardiac decompensated

Postpartum: Family planning counseling and access to preventative methods are very important.

5.5. Care for mothers with malaria

5.5.1. Screening for asymptomatic malaria in pregnant women:

Screen all pregnant women for malaria during each antenatal visit in health facilities located in malaria areas.

5.5.2. Diagnosis of clinical signs in pregnant women

The clinical features are the same as in adult malaria except that the risk of evolution into severe or complicated malaria, in case of infection with *P. falciparum*, is faster and relapses in infections by *P. vivax* and malaria are more common. Correct treatment is important because of high risks of premature delivery, as well as congenital diseases, low birth weight, and stillbirth.

Hypoglycemia, anemia, and pulmonary oedema are common complications of malaria in pregnant woman.

5.5.3. Treatment of Uncomplicated Malaria in Pregnant Women

1. *P. falciparum*, *P. vivax* or *P. Malaria*

Hypoglycemia, anemia, and pulmonary oedema are common complications of malaria in pregnant woman.

Hypoglycemia, anemia, and pulmonary oedema are common complications of malaria in pregnant woman.

- Quinine is safe for treating malaria in pregnant women in any trimester of the pregnancy.
- A+M are safe in only the 2nd and 3rd trimester of the pregnancy
- DHA + PIP is safe in only the 2nd and 3rd trimester of the pregnancy, but safety during the 1st trimester remains uncertain.

2. During the 1st trimester of pregnancy

First option: ***P. falciparum*, *P. vivax* or *P. Malaria* or mixed medication**

Administer only Quinine for 7 days

Administer Quinine (30mg/kg/24h) 300 g or 10mg/kg x 3 x 1 day x 7 days (based on the national guidelines on malaria treatment).

Age	Weight (kg)	Dose/8h	Total/day	Total/7days
9 to below 15 years	31-40	1½	4½	31½
15 years or over	>40	2	6	42

Do not give doxycycline/tetracycline to pregnant women and children under 8 years old.

3. During the 2nd and 3rd trimester

First line treatment for : **P. falciparum, P. vivax or P. Malaria or mixed medication**

Dihydroartemisinin + Piperaquine (DHA + PIP) for 3 days (DHA: 2-4 mg/kg/3 days; PIP: 20 mg/kg/3 days). One tablet contains 40 mg of DHA and 320 mg of PIP.

Weight (kg)	Day 1	Day 2	Day 3
31 -< 40	2 tab.	2 tab.	2 tab.
40 -< 60	3 tab.	3 tab.	3 tab.
≥ 60	4 tab.	4 tab.	4 tab.

Treatment of severe malaria in pregnant women

There is a strong correlation between severe malaria and maternal mortality and put the babies at risk of malaria at birth, have low birth weight than usual at birth and leading to child death. Therefore, anti-malarial treatment ought to be administered via intramuscular injection or IV therapy as soon as possible to pregnant women with severe malaria after the diagnosis.

Most importantly, pregnant women with severe malaria should be treated with any medication among the anti-malarial drugs (artesunate, artemether, or quinine) which is the first available.

- Woman patients during the 2nd and 3rd trimester of pregnancy
 - Artesunate should be administered, without delay, intramuscularly, or intravenously to women during their 2nd or 3rd trimester of pregnancy. These options are preferred over quinine infusion (please refer to the dosage of the intravenous or intramuscular artesunate or the intramuscular artemether in Section 13 in Treatment of Severe Malaria)
 - Continue intravenous or intramuscular infusion for at least 24 hours
 - If the patient can receive a tablet orally, stop the infusion (after at least 24 hours) and administer Dihydroartemisinin + Piperaquine (DHA + PPQ) or artesunate and mefloquine (As + MQ FDC) in a 3-day mixed course with a limited quantity, depending on the area.

- Woman patients during the 1st trimester of pregnancy
 - Quinine is the safe option in the 1st trimester
 - If the patient is uncertain whether the pregnancy is in the 1st or in the 2nd trimester, artesunate infusion can be administered, as prolonged use of quinine infusion can result in lower blood glucose
 - When the patients can take tablets orally, switch to quinine.

5.6. Care for mothers with Hepatitis B or Syphilis

If a baby is born to a mother with one or more issues as explained above is more likely to have complications later in their life although they seem healthy after birth.

Hepatitis B

- Mothers who had acute hepatitis during pregnancy or who are carriers of the hepatitis B virus may transmit the virus to their babies at birth. Therefore, during pregnancy all women require a blood test for hepatitis B.
- Women with Positive HBsAg and Positive HBeAg should be treated with Tenofovir 300 mg daily. The treatment course should start in the 24th – 28th week of pregnancy and continue after delivery to prevent transmission to the infant. Women with hepatitis B should consult with a physician specialized in the disease 6 weeks before delivery to follow up and treat if necessary
- For baby give the first dose of hepatitis B vaccine (HBV) 0.5ml IM in the upper thigh as soon after birth as possible after full breastfeeding or during the first 2 hours after birth, and following 2 doses based on the schedule of the national program for vaccination
- Reassure that she can safely breastfeed the baby
- Follow up with the baby until the 9th month of their life to assess the status of Hepatitis B.

Syphilis

- During pregnancy, all women should be blood-tested for syphilis, and if the mother is tested as positive, treatment by Benzathine Penicillin G2.4 million units should commence at least 30 days before delivery to prevent transmission to the baby
- If the mother is syphilis-infected and has not been treated, was treated inadequately, or has an unclear status, give Benzathine Penicillin G2.4 million units to both the mother and her partner by intramuscular infusions in 2 different spots
- If the mother and her partner are allergic to Penicillin, switch to Erythromycin 500 mg orally four times daily for 14 days

- All infants with signs of syphilis at birth or with no clinical signs but whose syphilis-infected mothers have not received treatment, or received inadequate treatment, treated for fewer than 30 days before delivery, or treated using other drugs aside from penicillin should be treated by Aqueous Benzyl Penicillin 100,000 – 150,000 IU/kg a day for 10 to 15 days, or Procaine Benzyl Penicillin 50,000 IU/kg intramuscular infusion once a day for 10 to 15 days
- If an infant has no abnormal signs and the mother received adequate treatment (2.4 million units of penicillin) and the treatment was administered for more than 30 days before the delivery, no additional treatment is necessary for the infant except for following-up in four weeks to examine the baby for growth and signs of congenital syphilis.
- For the follow-up, refer the mother and her partner(s) to a clinic that offers services for STIs.

5.7. Care for mothers with COVID-19

As of today (May 2020), little data is available to pinpoint the clinical situation and birth results during pregnancies and after delivery following a COVID-19 infection. There exists no evidence indicative of the fact that pregnant women show different signs or symptom clusters or face greater risks than other people. Until now, there is no evidence indicating mother-to-child transmission during the 3rd trimester of pregnancy based on analysis of samples, such as amniotic fluid, blood on the umbilical cord, vaginal mucus, sputum of the baby, and breast milk. Similarly, there is some unclear evidence that increasea severity in the mothers' health and impact to the babies, and there's little evidence suggesting certain infections during the 3rd trimester of pregnancy and some of the cases have been reported include pre-labor rupture of membranes (PROM), weakened fetus, and premature birth.

- Considering on Covid-19 infection, there are no signs and symptoms appearing on pregnant women and newly pregnant women (as with everybody else) all pregnant women who have history of direct contact, need to be monitored carefully.
- Women who are suspected of or are tested positive for having COVID-19, as well as quarantined women, should be provided with specialized care and respect including maternity services, medical care for fetuses and newborns, and mental health support. All these should be readily prepared to aid mother and child with difficulties.

NOTE: Methods of delivery should follow the actual circumstances of each woman, maternal conditions, and preferences of the woman herself. Delivery by c-section, however, should be performed only when certain clinical conditions are present. Any decision regarding emergency delivery or ending pregnancy is difficult and dependent on multiple factors, including age, severity health condition of the mother, and survivability of the fetus and their wellbeing.

- Each pregnant woman who has just contracted or tested positive for COVID-19 has to inform and seek counseling for safe breastfeeding and take measures for prevention and control to prevent transmission
- There has been no evidence pointing to COVID-19-positive pregnant women facing severe health condition or effects to the fetus. Pregnant women who have just recovered from COVID-19 are encouraged to have prenatal care checkups, postpartum care, or post-abortion care as per the guidelines in the National Safe Motherhood Protocols and guidelines on antenatal, delivery, and the postpartum care package (1,000-daycare package). More care needs to be provided should any difficulty arise.

NOTE 2: The rights and choice of a woman regarding her reproduction and sexual health care to be respected always regardless of her COVID-19 status. This also includes access to contraceptive methods and safe abortion as decreed by the law.

Breastfeeding

- Mothers and infants should be able to be together, have skin-to-skin contact, practice Kangaroo Mother Care, continue to share the room day and night, and more importantly start breastfeeding immediately after birth despite either the mother or the baby being suspected of having or being tested positive for COVID-19, with great care and adherence to measures of prevention and control. Nevertheless, separating the baby from the mother can be done only if either immediately exhibits severe conditions
- All babies of COVID-19-positive mothers need to be tested as well
- Breastfeeding needs to start within the first hour after delivery. Exclusive breastfeeding has to continue until the baby reaches 6 months old, after which complimentary food can be provided in a sufficient amount amid the continuation of breastfeeding until 2 years of life or longer
- The following hygiene measures need to be practiced when the mother has symptoms while breastfeeding, practicing skin-to-skin contact, or performing Kangaroo Mother Care:
 - Wear a face mask whenever near the baby
 - Clean hands before and after handling the baby
 - Clean and sanitize any surface the mother has touched.
- Counseling and support for breastfeeding should be provided to all pregnant women and nursing ones
- If a COVID-19-positive woman is severely ill or has extreme difficulty caring for the baby or continuing to breastfeed on her own, find alternatives, such as a breast milk collector to feed the baby. If the mother is severely ill and unable to even perform breast milk extraction, find other solutions, such as feeding the baby with another woman's breast milk or using milk alternatives. Mothers who express milk or use milk alternatives need to be informed about hand

sanitation and the use of masks when handling their babies. Mothers who express their milk have to sanitize their hands before and after using the collector and adhere to the guidelines on storage and hygiene after use

- Fathers, mothers, caretakers, and infants who are separated have to be provided with support from health workers or non-health workers with specific training on mental health and support.

Section 6: Assessing and Improving Quality of MNH Care at Hospitals

6-1 Emergency obstetric and newborn care (EmONC)

Even in cases where pregnant women are in good health, and antenatal care is good, about 15% of pregnant women will experience maternal complications. In this case, women should have access to a strong referral network that ensures timely access to emergency obstetric and newborn care.

Emergency Obstetric and Newborn Care (EmONC) will be gradually developed at hospitals in Cambodia. EmONC is divided into Basic Emergency Obstetric and Newborn Care (BEmONC) and Comprehensive Emergency Obstetric and Newborn Care (CEmONC) . They are defined as continuous availability, 24/7, of the following interventions.

6-1-1 Basic Emergency Obstetric and Newborn Care, BEmONC is defined as the ability to always provide all of the following interventions:

- Administer parenteral antibiotics (IM/IV)
- Administer parenteral oxytocic drugs (IM/IV)
- Administer parenteral anticonvulsants (MgSO₄) for pre-eclampsia and eclampsia (IM/IV)
- Perform manual removal of retained products
- Manage abortion complications (MVA)
- Perform assisted vaginal delivery (by vacuum extraction)
- Resuscitate asphyxiated newborn babies.

6-1-2 Comprehensive Emergency Obstetric and Newborn Care (CEmONC)

Includes all the above, and also includes the capacity to provide the following interventions:

- Perform surgery (caesarean section)
- Perform blood transfusion

The above key interventions are indicators for the classification as a BEmONC or CEmONC hospital. Establishing and maintaining a continuous capacity, day and night, every day of the week, to provide either BEmONC or CEmONC requires long term planning, both in terms of infrastructure, equipment, commodities, staff competence, and monitoring. This requires the involvement not only of maternal care staff and pediatric staff, but also the leadership of the hospital, the OD, and the PhD.

6-2 Service Quality Improvement

The staff of every maternity ward needs to assess its outcomes regularly and based on those outcomes discuss how to improve quality.

Outcomes – the number of women delivering, and the condition at the discharge of them and their babies – can be found through the HIS system. Some basic indicators to collect, as the basis for staff discussions, are

- Number of deliveries, normal and difficult ones
- Cesarean section rate and baby skin-to-skin contact during the surgery
- Vacuum extraction rate
- Number of babies born, out of babies born, number of live-born, stillborn, and early newborn deaths (deaths in the first week of life)
- Number of maternal deaths.

Improving service quality – this means stepwise changing of maternal and newborn care, usually based on the outcomes. It is important to involve all staff in such work, to discuss the results (outcomes), suggests ways to change/improve, prioritize among these actions. After months of interventions, the results of the actions need to be followed up. The actions in this service quality improvement process are as follows:

- 1. Regular staff meetings:** Staff need to meet to discuss results/outcomes and to take minutes of these meetings.
- 2. Agreed protocols:** These Safe Motherhood protocols, and associated protocols (on malaria, abortion, infection control etc...), need to be well known by all midwives and doctors in the unit. The procedures should be trained, and supported by job aids, such as posters.
- 3. Using clinical case reviews:**

a. Clinical audit of selected conditions.

If staff is concerned with the care of a certain condition – i.e., twin deliveries, breech deliveries, or diabetic pregnancy – they can decide to do a review of recent

cases of that condition. One staff member will identify the cases, find the case records, and present the main findings to all doctors and midwives. The findings will be compared to the agreed standards of care, and this will be the basis for discussion of the possible improvement of care for this condition.

b. Health Facility-based death review.

A maternal death or death of a newborn is selected for analysis. The case is presented by a staff member, and then the details are discussed under the chairing of a leading staff member, on a "no-name, no blame" basis. What interventions were done right? What could have been done better? Were the protocols followed? If not, why not? What can be done to improve adherence to protocols? Should the protocols be modified? It is important that Staff must agree that the whole case discussion is confidential – the issue is not to apportion blame but to learn from mistakes and try to improve the care in the department to avoid this type of death in the future.

c. Health Facility-based review of the near-miss case.

Near-miss analysis means a similar analysis of a case where a mother or a baby *almost* died but eventually was saved in good health. This can be i.e., a case of eclampsia, severe PPH, or newborn sepsis, that is analyzed in detail, presented, and discussed. What can be learned from this case? Which were the things done right? Was anything done wrong, or could have been done better?

4. Emergency drills.

Since obstetric emergencies do not happen every day, but the staff needs to be well trained to deal with them. Maternity units all over the world tend to use "emergency drills" to keep staff well trained. It must first be agreed in a department to have such drills, and how to do them (who has the right to call "emergency drill", i.e., the chief doctor or midwife, how to simulate the real situation, i.e., with written case or manikin). The agreed lead person will thereafter at irregular intervals, i.e., approximately every month give a surprise call "this is an emergency drill: we have an eclampsia case in the delivery room". Staff present will immediately gather around the "patient" and simulate the right actions, "I am taking charge, please insert IV line", "get the eclampsia kit", "I am now injecting a bolus dose of MgSO₄" etc. After 10-15 minutes, the exercise is stopped, and the staff will sit down and discuss how well they achieved, and what could be improved. With regular practice, team management of severe cases will improve with such training.

Section 7: Practical Procedures for mother

All of the below procedures should be available at all referral hospitals.

7-1 Management of the airway and breathing

Supplies: Ambu bag, mask, cannula, Oxygen ...

Procedure:

- If the woman has great difficulty breathing and if you suspect obstruction:
 - Help the woman to find the best position for breathing
 - Try to clear the airway and dislodge the obstruction
 - Call for help.
- If the woman has great difficulty breathing and the woman is unconscious:
 - Keep her on her back, arms at the side.
 - Tilt her head backward unless trauma is suspected.
 - Lift her chin to open the airway.
 - Inspect her mouth for the foreign body; remove it if found.
 - Clear secretions from the throat.
 - Reevaluate the breathing.
 - If the breathing is still not good, try to raise her chin to keep the respiratory tract open.
 - Provide Oxygen / Assist ventilation if necessary.
 - Call for nearest help.
- If the woman is not breathing:
 - Open the respiratory tract (raise the head or chin-up)
 - Ventilate with bag and mask right the way and evaluate the heartbeat by measuring carotid pulse (CP)
 - If the woman has a heartbeat (pulse) but doesn't breathe, continue with ventilating with the air until she starts breathing on her own
 - Provide her with oxygen

If a woman still has great difficulty breathing, keep her respiratory tract open, and provide her with oxygen.

 - Urgently call for anesthesiologist/anesthetic nurse etc....

7-2 Shock management

Shock occurs due to the failure of the blood circulatory system to supply to the main organs. Shock is the status that threatens our lives which requires urgent and robust treatment.

The shock will be suspicious and expected to be incurred if one or more of the following sings outset:

- Bleeding during the early stages of pregnancy (miscarriage, ectopic pregnancy, molar pregnancy)
- Bleeding during the late stage of pregnancy or during labor (i.e., placenta praevias, placental abruption, uterine rupture)
- Bleeding after birth delivery (i.e., uterine rupture, weaken uterus, genital tract rupture, placenta accrete or partial placenta accrete)
- Infection (i.e., unsafe abortion or infection, amniotic membrane, metritis, chronic pyelonephritis)
- Conflict (i.e., conflict of the womb and intestine during the abortion, uterine rupture, genital tract rupture).

Signs and Symptoms

Shock symptoms are as follows:

- Rapid, and weak low pulse rate (110/mm or more)
- Low blood pressure (systolic < 90mmHg)

Other signs and symptoms include:

- Pallor (particular below the eyelid, palm, around the mouth)
- Sweaty, cool, clammy skin
- Polypnea (30 times/minute or more)
- feeling fatigued, confused or loss of consciousness
- Less urine output (<30ml/h)

Emergency Management

When managing the problem of women, the basic principles shall be implemented when giving care

- Shout out for help from anybody available
- Monitor vital signs (pulse, blood pressure, respiratory rate, temperature)

- If the woman loses consciousness, lay her down on her side to prevent the vomitus choking if she vomits and have to ensure that her respiratory tract is opened.
- Maintain the body temperature (but don't let it rise too high) to ease the blood circulation to the tip of the fingers and toes and to reduce the return of the blood circulation from the main organs.
- Raise her legs up to enhance the blood circulation back to the heart (if possible the legs may be raised and put on the end of the bed).

Provisional translation

Particular management

- Start inserting IV fluid (two ways, if possible) using a cannula or big needle (16 gauge needle or the biggest one)
- Collect a blood sample for estimation of hemoglobin level by cross-matching and bedside clotting test before inserting the fluid.
 - Insert the IV line right away (normal saline or ringer's lactate) starting with the rate of 1 liter per 15-20 minutes

Note: Avoid using plasma fluid such as dextran. There is no evidence indicating that the plasma one is better than normal saline for rescuing the shocked woman and dextran may be harmful if it is overused.

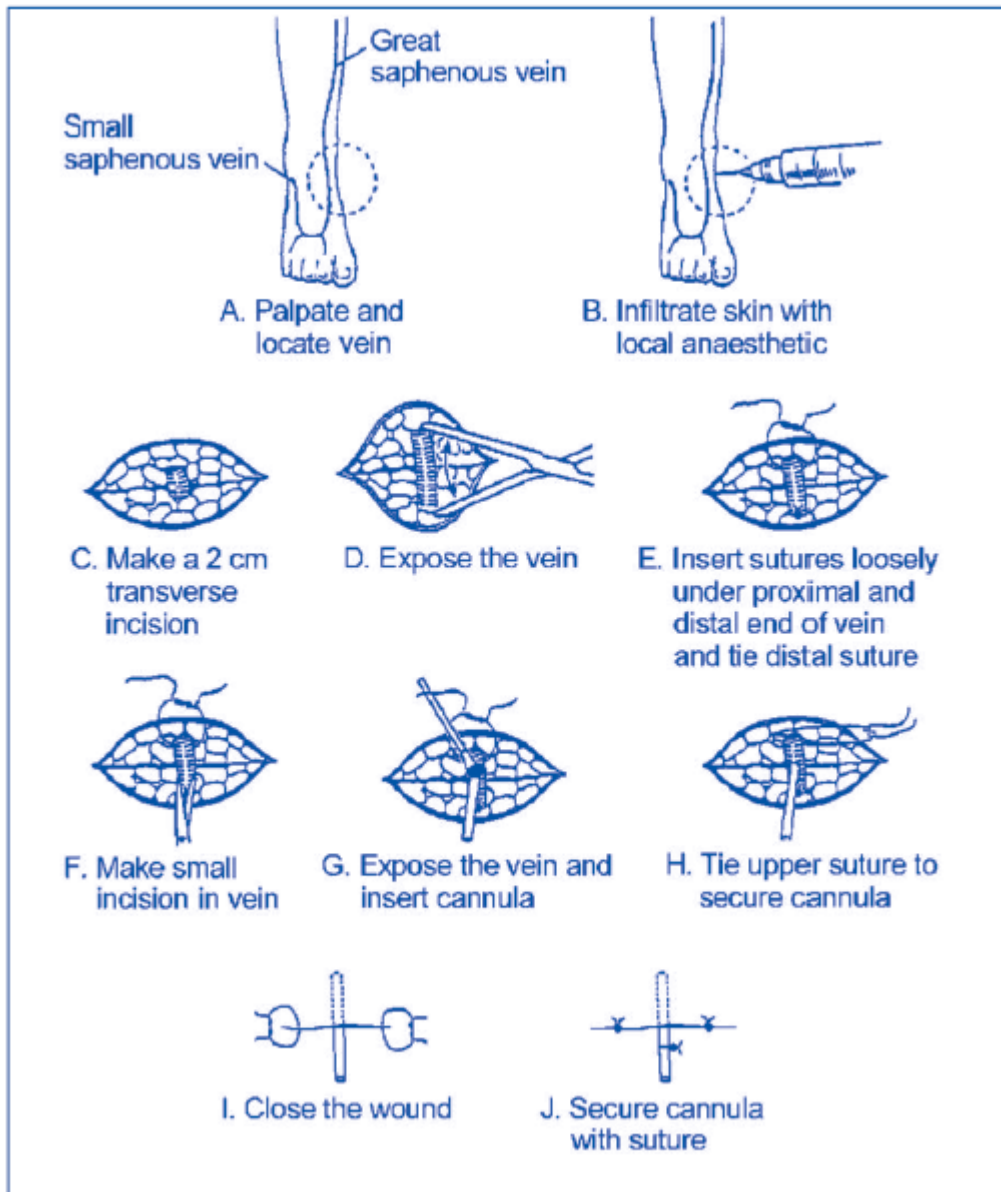
- Give fluid at least 2 liters in the first hour. The supplemental amount shall be more than the amount of the lost blood.

Note: It is required to insert the fluid at a faster rate for managing the shock resulting from vaginal bleeding. The purpose is to provide 2 to 3 times more than the estimated loss amount of blood.

Do not give the fluid to the shocked woman via mouth

- If it is not possible to give fluid through venipuncture, the venous cutdown shall be conducted (see the figure below)
- Continue monitoring vital signs (every 15 minutes) and the blood loss
- Draw the urine and monitor the amount of the given fluid and urine
- Give oxygen in 6-8L/mn with face masks and nasal cannulas.

Put on the anti-shock trousers for her to temporarily rescue until the appropriate administration is given if any.



Cause identification and shock management

Identify the cause after the woman regains stability.

- **If the heavy bleeding is suspicious as the cause of the shock**
 - Implement at the same time when trying to stop the bleeding (i.e., giving uterotonic, massage the uterus, pressing the uterus with the two hands, pressing the aorta artery, and preparing for the surgery).
 - Start blood transfusion immediately to supplement the lost amount of blood
 - Identify the root cause of bleeding and manage
 - If bleeding happens within the first 22 weeks of pregnancy, it is the suspicion of abortion, ectopic pregnancy, or molar pregnancy
 - If bleeding happens after 22 weeks after the pregnancy, or when labor occurs, but before giving the birth, it is the suspicion of placenta praevias or placental abruption)
 - If bleeding happens after the delivery, it is the suspicion of uterus rupture, uncontracted uterus, vaginal rupture, retained placental fragments (RPF)
 - Evaluate the woman's situation by the signs of recovery.
- **If it is suspected that the infection is the cause of the bleeding**
 - Collect the sample accordingly (blood, urine, pus) for virus culturing before giving antibiotics, if possible
 - Give the antibiotic to the woman together to fight against the aerobic and anaerobic infection and continue to give it until the body temperature becomes normal within 48 hours
 - Ampicillin 2g IV every 6 hours
 - Together with gentamicin 5mg/kg IV every 24 hours

Do not give oral antibiotics to the shocked woman

- Evaluate the woman's situation by the sign of recovery.
- If the shock is suspicious due to the conflict, prepare the surgery

Reevaluate

- Evaluate the response signs to the fluid given within 30 minutes in order to determine that the woman's situation is better, these signs are as follows:
 - Stable pulse (90/mn or lower)
 - Blood pressure increases (systolic ≥ 100 mmHg)
 - Regain consciousness (feeling less confused, fatigued)
 - Urine output increases (≥ 30 ml/h)
- If the woman's situation is better
 - Adjust the IV fluids speed to only 1L/6h
 - Continue managing the cause of the shock.
- If the woman is not better or cannot regain stability, the additional management shall be provided as follows:

Additional management

- Continue giving the IV fluids, adjust the fluid speed to only 1L/6h and maintain Oxytocin 6-8L/mn
- Persistently monitor the woman's situation
- Perform Laboratory test includes hemoglobin determination test, blood type test and Rh. If possible, review the serum electrolytes, serum creatinine, and blood pH.

7-3 Induction and augmentation of labor

This approach can only be conducted at the hospital with C-section, or cesarean delivery capacity. Induction and augmentation of labor shall be conducted according to the different indications, but with the same methods (this procedure shall be decided by the physician).

- **Induction of labor:** stimulating the uterus to begin labor.
- **Augmentation of labor:** stimulating the uterus during labor to increase the frequency, duration and strength of contractions. A good labor pattern is established when there are three contractions in 10 minutes, each lasting more than 40 seconds.

Note:

- Artificial rupture of membranes (ARM) together with the use of Oxytocin shall be considered in the case of prolonged labor.
- Try to keep the membranes unruptured for as long as possible if the woman is HIV positive or with the hepatic disease to reduce the possibility of mother-to-child transmission of the viruses.

7-3-1 Induction of labor

Assess the cervix before induction of labor. the success of induction of labor is based on the condition of the cervix at the start of induction.

Note:

- Do not perform the induction of the labor for the womb that used to have surgery wound to evaluate the cervix requirement, inspect the cervix by scoring it based on the table below:
- If the **cervix is favorable** (has a score of ≥ 6), labor is usually successfully induced with oxytocin alone.
- If the **cervix is unfavorable** (has a score of ≤ 5), ripen the cervix using prostaglandins or a balloon catheter before induction.

Assessment of cervix for induction of labor Table

Factor	Rating			
	0	1	2	3
Dilatation (cm)	closed	1-2	3-4	> 5
Length of the cervix (cm)	>4	3-4	1-2	< 1
Consistency	Firm	Average	Soft	-
Position	Posterior	Mid	Anterior	-

OXYTOCIN

Use oxytocin with great caution, as fetal distress can occur from hyperstimulation and, rarely, uterine rupture can occur, especially in multiparous women.

Carefully observe women receiving oxytocin.

The effectiveness of oxytocin dose varies greatly between women. Cautiously administer oxytocin in IV fluids (dextrose or normal saline), gradually increasing the rate of infusion until good labor is established (three contractions in 10 minutes, each lasting more than 40 seconds). Maintain this rate until delivery. The uterus should relax between contractions.

When oxytocin infusion results in a good labor pattern, maintain the same rate until delivery

- Monitor the woman's pulse, blood pressure and contractions, and check the fetal heart rate.
- Review for indications

Be sure induction is indicated, as failed induction is usually followed by caesarean section

Note:

- Ensure the fluid is infused and the drop rate is set as needed
- Then infuse Oxytocin in IV fluid.

- Ensure that the woman is on her left side.
- Record the following on a partograph every 30 minutes:
 - Rate of infusion of oxytocin (changes in arm position may alter the flow rate)
 - Duration and frequency of contractions
 - Listen to fetal heart rate every 30 minutes, always immediately after a contraction. If the fetal heart rate is less than 100 beats per minute, stop the infusion and manage for fetal distress by C-section immediately.

Women receiving oxytocin should never be left alone

- Infuse oxytocin 2.5 IU in 500 ml of dextrose or normal saline at 10 drops per minute. This is approximately 2.5 mIU per minute.
- Increase the infusion rate by 10 drops per minute every 30 minutes until a good contraction pattern is established (three contractions in 10 minutes, each lasting more than 40 seconds)
- Maintain this rate until delivery is completed
- If the contraction is greater than 5 times in 10 seconds or lasts longer than 60 seconds, stop the infusion and manage as Hyperstimulation case.
- If a good contraction pattern has not been established with the infusion rate at 60 drops per minute:
 - Increase the oxytocin concentration to 5 units in 500 mL of dextrose or normal saline and adjust the infusion rate to 30 drops per minute (15 mIU per minute)
 - Increase the infusion rate by 10 drops every 30 minutes until a good contraction pattern is established or the maximum rate of 60 drops per minute is reached.

➤ In multigravida, the induction and augmentation of the labor shall be more cautious

○ In **primipara**:

- Infuse oxytocin at the higher concentration (10 IU in 500mL) according to the protocol in the following table;
- If good contractions are not established at the maximum dose, deliver by cesarean section.

Oxytocin infusion rates for induction of labor (1 mL = 20 drops)

Time Since Induction	Oxytocin Concentration	Drops per Minute	Approximate Dose (mIU/minute)	Volume Infused (ml)	Total Volume Infused (ml)
Start	*2.5 units in 500 ml dextrose or normal saline (5mIU/ml)	10	3	0	0
30 minutes later	Same	20	5	15	15
1 hour later	Same	30	8	30	45
1 and a half hours later	Same	40	10	45	90
2 hours later	Same	50	13	60	150
2 and a half hours later	Same	60	15	75	225
3 hours later	5 units in 500 ml dextrose or normal saline (10mIU/ml)	30	15	90	315
3 and a half hours later	Same	40	20	45	360

4 hours later	Same	50	25	60	420
4 and a half hours later	Same	60	30	75	495
5 hours later	10 units in 500 ml dextrose or normal saline (20mIU/ml)	30	30	90	585
5 and a half hours later	Same	40	40	45	630
6 hours later	Same	50	50	60	690
6 and a half hours later	Same	60	60	75	765
7 hours later	Same	60	60	90	855

Note: Draw the Oxytocin one tube=1ml=10 IU mixing with the fluid not less than 10ml and then inject 2.5ml into the fluid.

Increase the rate of oxytocin infusion only to the point where a good contraction pattern is established and then maintain the infusion at that

Rapid escalation for primigravida only: Oxytocin infusion rates for induction of labor

Time Since Induction (hours)	Oxytocin Concentration	Drops per Minute	Approximate Dose (mIU/minute)	Volume Infused	Total Volume Infused
Start	2.5 units in 500 mL dextrose or	15	4	0	0

	normal saline (5mIU/ml)				
30 minutes later	Same	30	8	23	23
1 hour later	Same	45	11	45	68
1 and a half hours later	Same	60	15	68	135
2 hours later	5 units in 500 mL dextrose or normal saline (10mIU/ml)	30	15	90	225
2 and a half hours later	Same	45	23	45	270
3 hours later	Same	60	30	68	338
3 and a half hours later	10 units in 500 mL dextrose or normal saline (20mIU/ml)	30	30	90	428
4 hours later	Same	45	45	45	473
4 and a half hours later	Same	60	60	68	540
5 hours later	Same	60	60	90	630

Note: The fluid rate is calculated based on the basis of 20 drops per 1ml.

Prostaglandin E2:

Prostaglandins are highly effective in ripening the cervix (Cervical Ripening) during the induction of labor.

- Monitor the woman's pulse, blood pressure and uterine contractions, and check the fetal heart rate.
- Record the findings on a partograph.
- Review for indications.
- Prostaglandin E2 (PGE2): Dinoprostone is available in several forms (3 mg Vagina pessary or 2–3 mg Vagina gel or 3mg Tablet). The prostaglandin is placed high in the posterior fornix of the vagina and may be repeated after six hours if required.

Monitor uterine contractions and fetal heart rate of all women undergoing induction of labor

- Discontinue the use of prostaglandins and begin oxytocin infusion if:
 - o cervical ripening has been achieved;
 - o good labor has been established;
 - o Rupture of membranes;
 - o 12 hours have passed.

Foley/balloon catheter

Using the Foley/Balloon catheter alone or together with Oxytocin is an effective method for labor induction, if the Prostaglandin E2 is not performed or not required. Comparing to the Prostaglandin E2, the balloon catheter has less risk of strong uterus contraction or uterus rupture. However, it shall be not performed for the woman with cervical or vaginal ectropion.

If there is a history of bleeding or ruptured membrane, or obvious vaginal infection, do not use the balloon catheter

- Review for indications
- Gently insert a sterile speculum into the vagina
- Hold the catheter with sterile forceps and gently introduce it through the cervix. Ensure that the inflatable bulb of the catheter is beyond the internal cervix
- Inflate the bulb with 30-50mL of water according to the size of the balloon.
- Stretch the Catheter and stick it to the thigh with tape.
- Leave the catheter in place until contractions begin, or for at least 12 hours.
- Giving Oxytocin in the fluid can start when the balloon catheter is placed for 12 hours and dropped or not yet dropped or after removing the catheter.

7-3-2 Augmentation of labor

This procedure is for speeding up the labor to prevent the consequences which may occur in connection with the prolonged labor and to avoid the C-section.

Review for indications:

- For prolonged labor, the uterus contraction is ineffective
- Real labor
- No disproportion signs between the fetus head and mother' pelvis.

The following practices are not recommended:

- Active management of the labor to prevent prolonged labor from happening.
- Perform early artificial rupture of membranes (AROM) and give oxytocin for enhancement of labor to prevent prolonged labor from happening
- Giving Oxytocin to prevent the prolonged labor from happening for the woman who was given epidural analgesia
- Perform Artificial rupture of membranes (AROM) alone to prevent prolonged labor from happening
- Using antispasmodic to prevent prolonged labor from happening
- Giving pain relief medicine to prevent prolonged labor and to reduce the augmentation of labor.
- IV fluid to shorten the time of labor (may result in overhydration for the woman) and
- Using enema with the purpose of reducing the augmentation of labor.

Augmentation of labor with Oxytocin:

- Diagnose the stages of the labor
- Review for indications
- Explain woman the procedure to be performed and ask for her consent
- Infuse oxytocin through fluid as described in the section induction of the labor, but do not perform rapid escalation of augmentation of labor.

Note:

Consider artificial rupture of membranes (AROM) together with using drop of oxytocin to speed up the prolonged labor. Try to keep the membranes unruptured for as long as possible if the woman is HIV positive or with the hepatic disease to reduce the possibility of perinatal transmission of the viruses.

7-3-3 Artificial rupture of membranes (AROM)

Artificial rupture of membranes (AROM) alone is not recommended for the induction of labor or treatment for prolonged labor.

- Review for the indications
 - If the membrane is not yet ruptured, consider artificial rupture of membranes (AROM) to promote the labor together when infusing oxytocin into fluid
 - The uterus contraction is good, but the cervical dilatation is not good
 - Cervix is fully extended, but the fetus head does not come out well

- Using oxytocin is less effective
- Explain to the woman the procedure to be performed and ask for your consent
- Listen to and note the fetal heart rate.
- Ask the woman to lie on her back with her legs bent, feet together and knees apart.
- Wearing sterile gloves, use one hand to examine the cervix and note the consistency, position, effacement and dilatation
- Use the other hand to insert a Kocher clamp into the vagina
- Place two fingers against the membranes and gently rupture the membranes with the instrument in the other hand. Allow the amniotic fluid to drain slowly around the fingers
- Note the color of the fluid (clear greenish, or bloody). If thick meconium is present, suspect fetal distress.
- After ARM, listen to the fetal heart rate during and after a contraction to evaluate fetus's condition.
- If the fetal heart rate is abnormal (less than 100 or more than 180 beats per minute), suspect fetal distress, and ready for interventions.
- If membranes have been ruptured for 18 hours, give prophylactic antibiotics as described above.

The uterus simulates strongly when inducing and augmenting the labor

If the strong stimulation occurs (the contraction is over 60 seconds) or contraction is over 5 times per 10 minutes

- Stop fluid infusion
- Stay with the woman until the uterus action becomes normal
- Have the woman lying down on her left side
- Evaluate the fetal heart rate:
 - If the fetal heart rate is normal (between 100 and 180/minutes), note the recovery status of the uterus action and monitor the fetus's heart rate.
 - If the fetal heart rate is abnormal (less than 100 and over 180/minutes) manage the distressed fetus and make the uterus relaxed by using betamimetics: terbutaline 250 mcg by slowly injecting within 5 minutes or salbutamol 10mg into the fluid normal saline or ringer's lactate 1 liter in the rate of 10 drops/minute.

Note: Betamimetics shall not be used for the woman with heart disease. If the woman with heart disease or if the betamimetics is not available, non-betamimetics such as nifedipine 20mg tablet can be used instead.

- Observe the better status of uterus action and monitor the fetal heart rate
 - If the status does not become normal within 20 minutes and the betamimetics has not been given to make the uterus relaxed (see the above points)
 - If the fetal heart rate gets better or becomes normal and the uterus action becomes normal at least within 30 minutes, start to infuse oxytocin through fluid carefully.

7-4 Episiotomy and repair

Indications

Episiotomy should NOT be performed routinely. It should be considered only in the following cases:

- Complicated vaginal delivery (breech, shoulder dystocia, vacuum extraction).
- Scarring from a previous, poorly healed 3rd or 4th degree tear.
- Fetal distresses when the mother tries her best to push the fetus out.

Note: All primigravida is not subject to episiotomy.

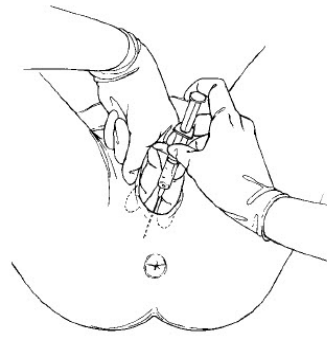
Making the Episiotomy

- Tell the woman the purpose and the procedure to be performed
- Adhere to the principles of good care (communication and infection prevention), apply an antiseptic solution to the perineal area.
- Inject the lidocaine, but make sure that the woman has no allergy to the lidocaine or other anesthetic
- Infiltrate beneath the vaginal mucosa, beneath the skin of the perineum, and deeply into the perineal muscle with approximately 10 cc of 2% lidocaine solution.

Note:

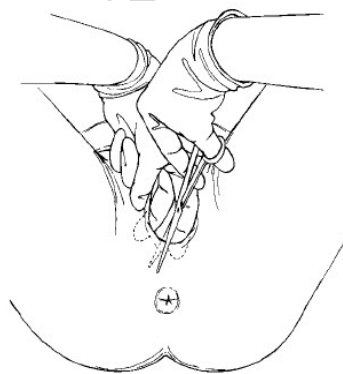
Before injecting the lidocaine, make sure that no blood vessel has been penetrated: If blood is returned in the syringe with aspiration, remove the needle. Recheck position carefully, and try again. Never inject if blood is aspirated (the woman can suffer convulsions and death if IV injection of lidocaine occurs).

- At the conclusion of the set of injections, wait 2 minutes and then pinch the incision site with forceps. If the woman feels the pinch, wait 2 more minutes and then retest.
- Wait to perform the episiotomy until the perineum is thinned out at 3-4 cm during a contraction.



Infiltration of perineal tissue with local anesthetic

- Wearing sterile gloves, place two fingers between the baby's head and the perineum.
- Use scissors to cut the perineum and posterior vagina 3-4 cm in the mediolateral direction.
- Control the baby's head and shoulders as they deliver, ensuring that the shoulders have rotated to the midline to prevent an extension of the episiotomy incision.
- Carefully examine for tears of the vagina, perineum and cervix, or extension of the episiotomy incision.

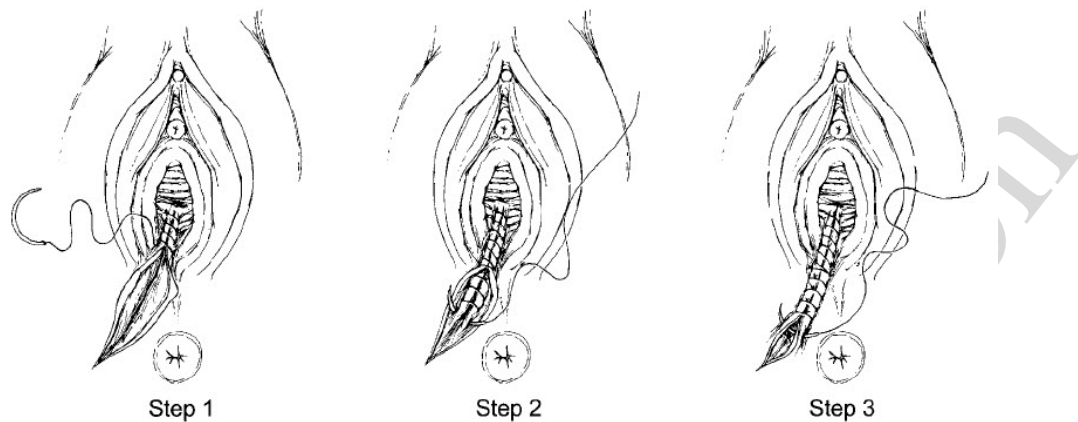


Making incision while inserting two fingers to protect the baby's head

Repairing the Episiotomy

- Apply the antiseptic solution to the area around the episiotomy.
- If the episiotomy is extended through the anal sphincter or rectal mucosa, manage as third or fourth-degree tears, respectively.
- Close the vaginal mucosa using continuous polyglycolic 2-0 suture:
- Start the repair about 1 cm above the apex (top) of the episiotomy. Continue the suture to the level of the vaginal opening.
- At the opening of the vagina, bring together the cut edges of the vaginal opening.

- Bring the needle under the vaginal opening and out through the incision and tie.
- Close the perineal muscle using Vicryl or Catgut 2-0 suture.
- Close the skin using Vicryl or Catgut 2-0 suture.



Repair of Episiotomy (Step 1, 2 and 3)

Aftercare

- Wash the perineum with an antiseptic solution,
- Pat dry, and place a sanitary pad over the vulva and perineum.
- Make the woman comfortable.
- Make sure that she knows how to care for the wound:
 - Pour clean water over the perineum after urinating
 - Clean with mild soapy water and rinse the perineum after each bowel movement
 - Change perineal pads/cloths frequently to ensure that the suture area is dry.

7-5 Cervical and vaginal inspection

Review for indications:

If right the way after the delivery, continued vaginal bleeding despite a firmly contracted uterus.

Procedure

- Adhere to the principles of good care (communication and infection prevention)
- Provide emotional support and encouragement
- Ensure that there is a good source of light for clear visual
- Use the bigger size of the speculum to inspect the cervical rupture, vaginal wall rupture and perineum and hematomas
- Bleeding from a vaginal or cervical tear may be detected by slow but continuous bleeding or by spurts from an artery

- Next, have an assistant press gently and firmly down on the woman's uterus. This will move the cervix lower into the vagina so that you may examine it carefully
- If you cannot see the entire cervix, or if you see bleeding or tears on the cervix, take a sponge forceps (ring forceps) and clamp the entire rounded part of the forceps onto the anterior lip of the cervix. Pull on the forceps gently toward you
- Look carefully at all sides of the cervix. Tears occur most frequently on the sides of the cervix at the 3 or 9 o'clock position (mid-right and mid-left)
- Assess and repair tears if necessary; a large tear that bleeds persistently must be repaired.

7-6 Repair of vaginal and perineal tears

Indications

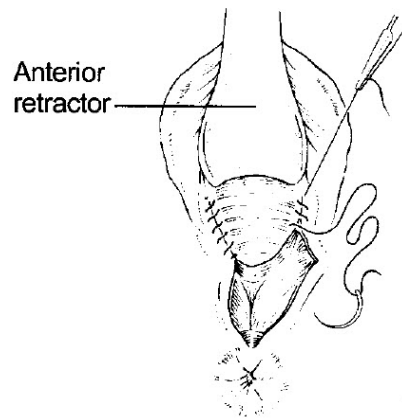
- First-degree tears involve the vaginal mucosa and connective tissue.
- Second-degree tears involve the vaginal mucosa, connective tissue, and underlying muscle.
- Third-degree tears involve complete transection of the anal sphincter.
- Fourth-degree tears involve the rectal mucosa.

Procedure

Repair of First- and Second-Degree Tears:

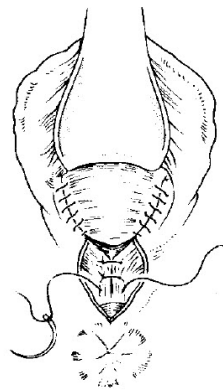
- Adhere to the principles of good care (communication and infection prevention)
- Provide emotional support and encouragement
- Ask an assistant to check that the uterus is firmly contracted
- Carefully examine the vagina, perineum and cervix
- Apply the antiseptic solution to the area around the tear
- Make sure there are no known allergies to lidocaine or related drugs
- Infiltrate beneath the vaginal mucosa, beneath the skin of the perineum, and deeply inject into the perineal muscle with 10 ml of 2% lidocaine solution
- Aspirate (pull back on the plunger) to be sure that no blood vessel has been penetrated
- If blood is returned in the syringe with aspiration, remove the needle, recheck position carefully, and try again. Never inject if blood is aspirated
- At the conclusion of the first set of injections, wait 2 minutes and then pinch the incision site with forceps. If the woman feels the pinch, wait 2 more minutes and then retest
- Repair the vaginal mucosa using continuous Vicryl or catgut 2-0 suture

- Start the repair about 1 cm above the apex (top) of the vaginal tear. Continue the suture to the level of the vaginal opening
- At the opening of the vagina, bring together the cut edges of the vaginal opening
- Bring the needle under the vaginal opening and out through the perineal tear and tie



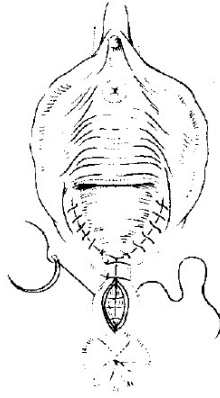
Repairing the vaginal mucosa

- Repair the perineal muscle using interrupted 2-0 Vicryl or catgut suture. If the tear is too deep, place a second layer of the same stitch to close the space



Repairing the perineal muscles

- Repair the skin using interrupted (or subcuticular) Vicryl or catgut 2-0 suture starting at the vaginal opening
- If the tear was deep, perform a rectal examination. Make sure there are no stitches in the rectum.



Repairing the skin

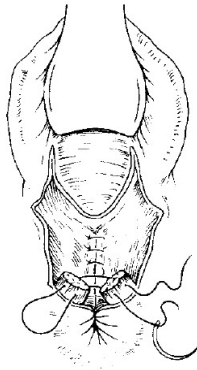
Repair of Third- and Fourth-Degree Perineal Tears:

- Adhere to the principles of good care (communication and infection prevention)
- Provide emotional support and encouragement
- Ask an assistant to check that the uterus is firmly contracted
- Carefully examine the vagina, perineum, and cervix
- To see if the anal sphincter is torn:
- place a gloved finger in the anus and lift slightly to confirm the conditions the sphincter, or its damage
- feel the surface of the rectum and look carefully for a tear
- Change sterile gloves
- Apply the antiseptic solution to the area around the tear
- Make sure there are no known allergies to lidocaine or related drugs
- Infiltrate beneath the vaginal mucosa, beneath the skin of the perineum, and deeply into the perineal muscle with approximately 10 ml of 2% lidocaine solution
- Aspirate (pull back on the plunger) to be sure that no blood vessel has been penetrated
- If blood is returned in the syringe with aspiration, remove the needle, if lidocaine has been injected into blood vessel, recheck position carefully, and try again.
- At the conclusion of the set of injections, wait 2 minutes and then pinch the incision site with forceps. If the woman feels the pinch, wait 2 more minutes and then retest
- Repair the rectum using interrupted 3-0 or 4-0 sutures 0.5 cm apart to bring the mucosa together.

Note: place the suture through the muscular, not all the way through the mucosa.

- Cover the muscular layer by bringing together the fascial layer with interrupted sutures.
- Apply the antiseptic solution to the area frequently, repair the wall muscular colon.

- If the sphincter is torn, grasp each end with an Allis clamp (the sphincter retracts when torn). The sphincter is strong and will not tear when pulling with the clamp
- Repair the sphincter with two or three interrupted stitches of 2-0 Vicryl or catgut suture



Suturing the anal sphincter

- Apply antiseptic solution to the area again
- Examine the anus with a gloved finger to ensure the correct repair of the rectum and sphincter
- Change to sterile gloves
- Repair the vaginal mucosa, perineal muscle and skin (see above).

Aftercare:

- Wash the perineum with an antiseptic solution, pat dry, and place a sanitary pad over the vulva and perineum
- Make the woman comfortable
- Make sure that she knows how to care for the wound:
- Pour clean water over the perineum after urinating
- Clean with mild soapy water and rinse the perineum after each bowel movement
- Change perineal pads/cloths frequently
- Ensure that the suture area is dry.

Consequence:

- If there is a hemorrhage, cut it up and blow the blood out. If there is no sign of the infection and bleeding stops and repair the episiotomy of the vagina
- If there is a sign of the infection, open and flow the wound surface. Remove the thread and wound debris
 - In the case of the mild infection, antibiotic is not needed
 - If the infection is severe, but not related to the deeper tissue, the combination of the antibiotic may be given:
 - Ampicillin 2g IV every 6 hours
 - Plus gentamicin 5mg/Kg every 24 hours
 - If the infection effect deep inside the muscle and result in necrosis (necrotizing fasciitis) give the combination of the antibiotic until the necrotic tissue is removed and the woman has no fever for 48 hours
 - Ampicillin 2g IV every 6 hours
 - Plus gentamicin 5mg/Kg every 24 hours

Note: Necrotizing fasciitis requires bigger surgery. Perform the closing delay for 2 to 4 weeks (based on the status of the infection),

7-7 Repair of cervical tears

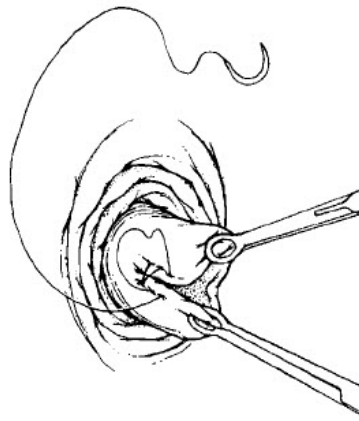
Indications

It is necessary to repair a tear in the cervix if it is large and bleeds persistently.

Procedure

- Adhere to the principles of good care (communication and infection prevention)
- Provide emotional support and encouragement
- For tears that are high and extensive, start an IV infusion and give Morphine and Diazepam slowly infuse (do not use the same syringe) or Ketamine

- Ask an assistant to massage the uterus and provide fundal pressure
- Apply the antiseptic solution to the vagina and cervix
- Gently grasp the cervix with sponge forceps (ring forceps)
- Apply the forceps to both sides of the tear and gently pull in various directions to see the entire cervix. There may be several tears
- Close the cervical tear with continuous 0 Vicryl or chromic catgut suture starting at the apex (upper edge of tear), which is often the source of bleeding
- If a long section of the rim of the cervix is tattered, under-run it with continuous 0 Vicryl or chromic catgut suture.



Repair of a cervical tear

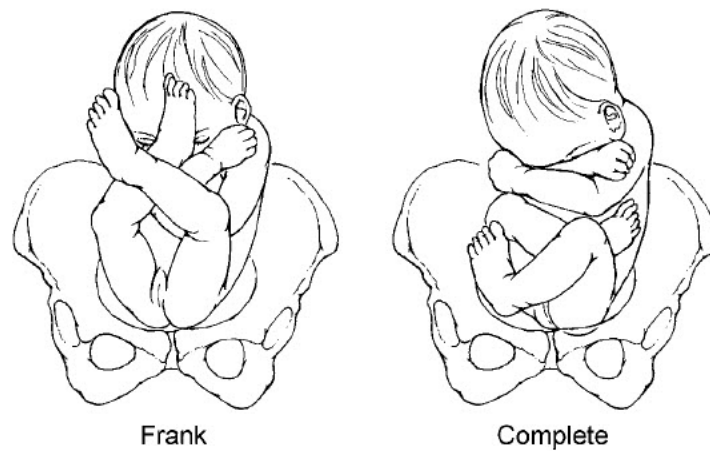
Aftercare

- Wash the perineum with an antiseptic solution, pat dry, and place a sanitary pad over the vulva and perineum
- Make the woman comfortable
- Monitor vital signs
- Monitor vaginal bleeding.

7- 8 Breech delivery

- Review for the indications and make sure that it is possible for vaginal delivery
- Adhere to the principles of good care and start injecting the fluid
- Provide the woman with metal support and encouragement
- Perform this procedure gently and without using force.

Figure indicating the frank and complete breech delivery



Delivery of the buttocks and legs:

- Once the buttocks have entered the vagina and the cervix is fully dilated, inform the woman that she can bear down with contractions
- If there is an obstacle with the wound or hypertrophic scar at the perineum, the decision can be made to make an episiotomy
- Allow the buttocks to deliver until the lower back and then the shoulder blades are seen
- Gently hold the buttocks in one hand, but do not pull
- If the legs do not deliver spontaneously, deliver one leg at a time:
 - Push behind the knee to bend the leg
 - Grasp the ankle and deliver the foot and leg
 - Repeat the above two steps for the other leg.

DO NOT pull the baby while the legs are being delivered.

- Hold the baby by the hips (see diagram below); DO NOT hold the baby by the flanks or abdomen, as this may cause kidney or liver damage.

Holding the baby at the hips



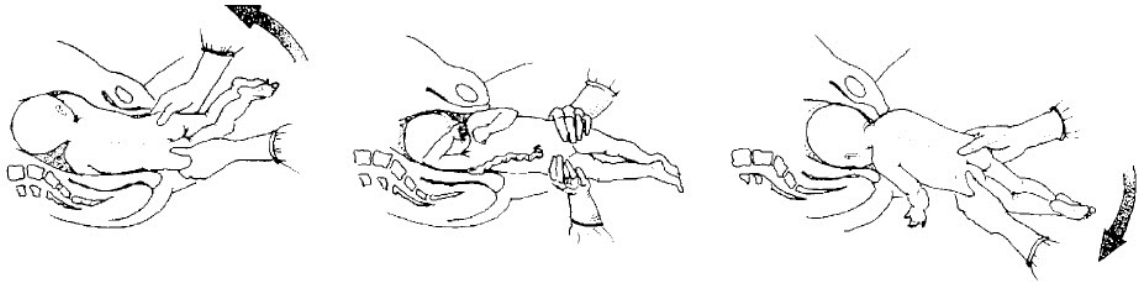
Delivery of the arms

If the arms are felt on the chest:

- Allow the arms to disengage one by one (Only assist if necessary)
- After spontaneous delivery of the first arm, lift the buttocks toward the woman's abdomen to allow the second arm to deliver spontaneously
- If the arm does not deliver spontaneously, place one or two fingers in the elbow and bend the arm, bringing the hand down over the baby's face.

If the arms are stretched above the head or folded around the neck, use Lovset's maneuver as follows:

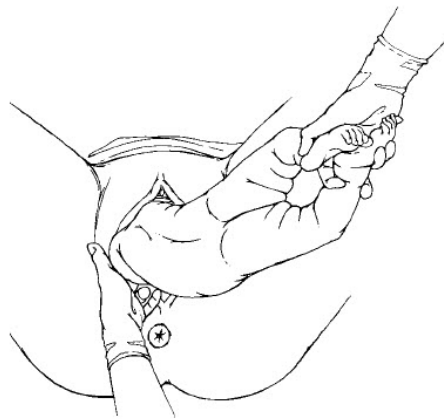
- Hold the baby by the hips and turn half a circle, keeping the back uppermost while applying downward traction to allow the arm that was posterior to become anterior and be delivered under the pubic arch
- Assist delivery of the arm by placing one or two fingers on the upper part of the arm. Draw the arm down over the chest as the elbow is flexed, allowing the hand to sweep over the face
- To deliver the second arm, turn the baby back half a circle, keeping the back uppermost while applying downward traction, and deliver the second arm in the same way under the pubic arch.



Lovset's maneuver

If the baby's body cannot be turned to deliver the anterior arm first, should do as follows:

- Hold and lift the baby up by the ankles
- Move the baby's chest toward the woman's inner leg. The shoulder that is posterior should deliver
- Deliver the arm and hand
- Lay the baby back down by the ankles. The shoulder that is anterior should now deliver
- Deliver the arm and hand.



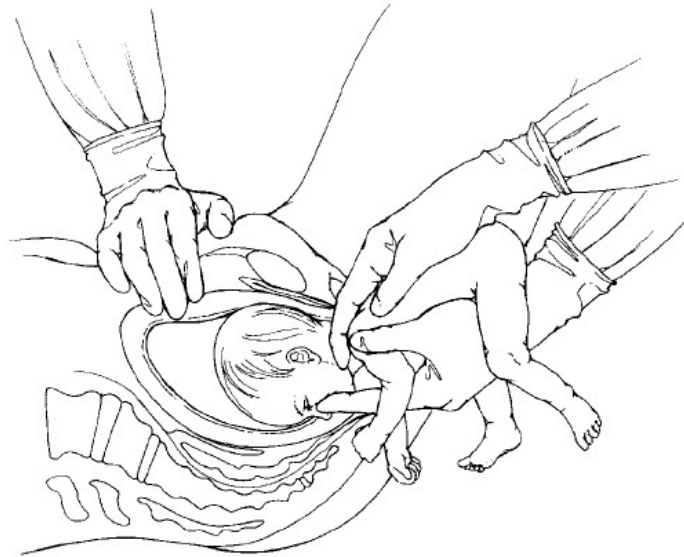
Delivery of the shoulder that is posterior

Delivery of the head:

Deliver the head by the Mauriceau-Smellie-Veit maneuver as follows:

- Lay the baby face down with the length of the body over your hand and arm of a midwife
- Place the first and third fingers of this hand on the baby's cheekbones and place the second finger in the baby's mouth to pull the jaw down and flex the head
- Use the other hand to grasp the baby's shoulders
- With two fingers of this hand, gently flex the baby's head toward the chest while pulling on the jaw to bring the baby's head down until the hairline is visible
- Pull gently to deliver the head.

Note: Ask an assistant to push above the woman's pubic bone as the head delivers; this helps to keep the baby's head flexed.



Mauriceau-smellie-veit maneuver

Entrapped head

- Urinary catheter
- Have the assistant to pull the newborn when you place piper and long forceps
- Ensure the full cervical effacement
- Wrap the newborn with the cloth or towel and pick the newborn up
- Insert the left-wing of the forceps
- Place the right-wing and activate the handle lock of the forceps
- Use forceps to bend and alleviate the newborn's head
- If cannot use forceps, strongly press the mother's pubic born to flex the baby's head and push through the pelvis.

Footling

This form typically requires C-section.



- The vaginal birth delivery for the footling is limited to:
 - Labor starts and birth occurs and the cervix is fully effaced
 - The premature fetus is unlikely to survive after the delivery
 - Birth giving to the next newborn of her twin.
- To give the vaginal delivery
 - Hold the newborn with one hand
 - Hold the heel and pull the newborn out gently
 - Push the newborn out up to her back and the scapulae are visible
 - Continue delivery the hands.

Conclusion of the birth delivery

Give antibiotic one dose for prevention after the delivery, giving the Ampicillin 2g IV or Cefazolin IV.

Aftercare

- Provide immediate newborn care by sweeping and drying the newborn and place the newborn in contact with the mother's skin
- Clamp and cut the cord
- Give oxytocin 10 IU IM within 1 minute of delivery
- Clamp and cut the cord after cord pulsations stopped (if the newborn breathes normally after sweeping)
- Deliver the placenta by performing active management of 3rd stage of labour
- Examine the woman carefully for tears of the vagina and cervix or repair episiotomy.

7-9 Vacuum extraction

Vacuum extraction can be performed to help with the birth delivery in the second stage of the indications:

- The second stage is prolonged and the fetus gets distressed (the second stage on average takes 1 hour in the primigravida and one hour and a half for the multigravida) or

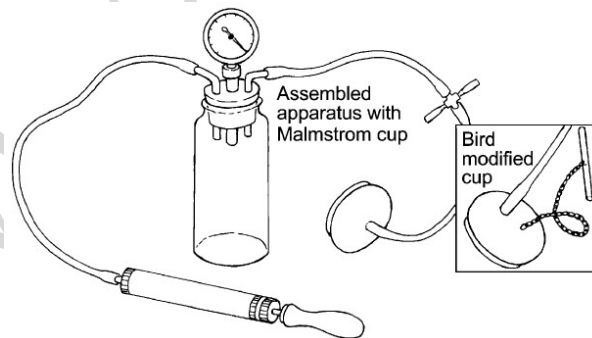
- The woman gets fatigued and cannot try to push the fetus out
- The woman with high blood pressure, preeclampsia, eclampsia and heart disorders.

But in the following safe conditions:

- The top of the head is visible
- Full-term birth delivery
- Cervix fully dilated
- Fetal head at +1, or +2 or no more than 1/5 palpable above symphysis pubis. In the case of the absence of the physician, the midwife can perform if the fetal head strongly flexed 0/5 and the vagina is opened 3cm when the woman tries to push the fetus out
- Membranes ruptured
- No urine in the urinary bladder
- No disproportion exists between the fetus head and mother's pelvis
- Adequate uterine contractions
- No signs of the birth obstacles and risk such as strong breech, the bands in the abdomen, bleeding urine and heavily swollen vagina...
- The service provider shall be trained in the use of Vacuum Extractors.

Procedure

- Adhere to the principles of good care (communication and infection prevention)
- Check all connections and test the vacuum on a gloved hand
- Provide emotional support and encouragement.

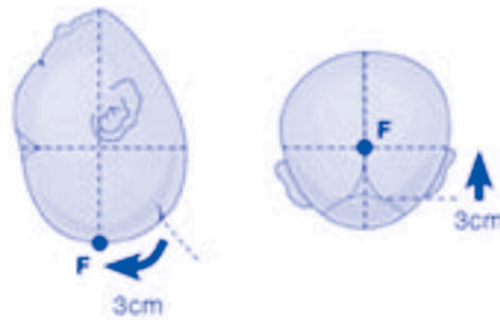


Vacuum extractor

- Wearing sterile gloves, assess the position of the fetal head by feeling the sagittal suture line and the fontanelles
- Identify the posterior fontanelle
- Apply the cup under the fetal head, with the center of the cup over the flexion point, 3 cm anterior to the posterior fontanelle. This placement will promote flexion, descent, and autorotation with traction

- An episiotomy is not usually required for proper placement of the cup: however, an episiotomy may be required if the perineum threatens to tear as the head distends the perineum
- Later timing of the episiotomy will avoid unnecessary blood loss
- Check the application. Ensure that there is no maternal soft tissue (cervix or vagina) within the rim. Keep the index finger on the fetal head and your thumb on the cup.

Identifying Flexion Point F

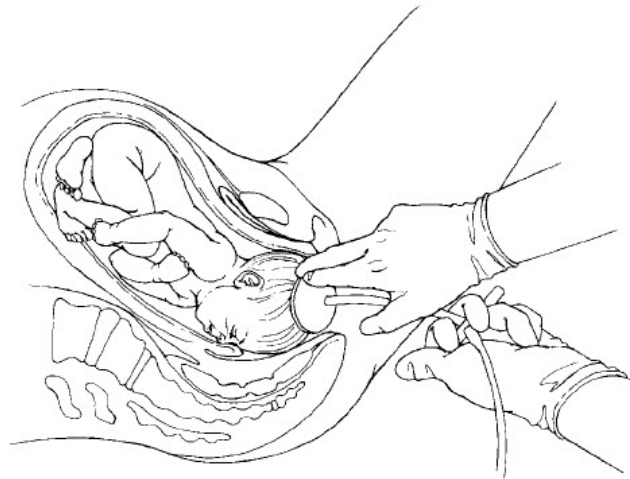


Identifying Flexion Point F



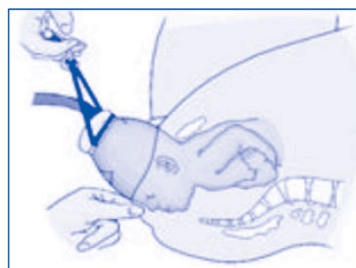
Placing the head at the flexion point

- With the pump, create a vacuum of $0.2\text{kg}/\text{cm}^2$ or 20Kpa negative pressure and check the application
- Increase the vacuum to $0.8\text{kg}/\text{cm}^2$ or 80Kpa and good seal of the cup, after negative pressure reaches maximum level, wait for 2 minutes for full attachment of the cup with baby head and uterus contraction, then be ready to start traction in the line of the pelvic axis and perpendicular to the cup).



Delivering by using malmstrom cup

- If the head is bent to either side or does not flex well, the pulling should be adjusted through the line to ease and pull the fetus head to be flexed (i.e., pulling to the other side without following the central line)
- When the uterus contracts, pull along the line which is the angle of the head edge of manual vacuum extractors what one hand. Place the pointing finger of the other hand on the fetus head's skin which is in contact with the vacuum contractor strip and the thumb on the vacuum contractor when pulling to evaluate the loose extractor and if the head is getting out. For pulling direction, first to pull it down and then pull straightly and then pull upward
- Encourage the woman to try pushing the fetus out when the uterus contracts (adequate uterus contraction shall be over 4 times/10 minutes and each contract is over 40 second)
- If the uterus inadequately contracts, the fluid should be mixed with the oxytocin 5 IU drop in the fluid 500ml in the rate of 30 to 60 drop/minute
- During the interval of the uterus contraction, inspect:
 - Fetus heart rate
 - Attaching to the contractor's head
- Delivering the head slowly and protect by holding the perineum.



Delivering the head and holding the perineum

- Relieve the pressure when the fetus head is completely getting out, remove the contractor and then have the mother deliver normally

It is important:

- Not to use the contractor for rotating the fetus head. The rotation of the fetus's head will happen when pulling her out
- First pulling can help to identify the correct direction for pulling
- Do not continue pulling when the uterus stops contracting and the mother stops trying to push the fetus out
- With the good progress and without distressing fetus, continue to pull the longest 30 minutes
- The pumping shall be stopped if:
 - The baby head does not move along with each drag
 - There is no movement after three attempts to drag or the baby is not delivered after 30 minutes of drag
 - The pumping head comes off two times when the drag is conducted in a correct direction and there is maximum negative pressure

Care after the procedure

- The care procedure must be immediately started after delivery (wipe dry the whole body and save the baby if it does not breathe by pumping in the air with balloon and mask, and place the baby in skin-to-skin contact with the mother if the baby has breathed well for at least one hour)
- Provide Oxytocin 10 IU, IM for the first one minute
- Tweeze and cut the umbilical cord when the umbilical cord stops beating (if the baby breathes normally after the wiping)
- Drop the placenta by checking by performing the active management of third stage of the placenta drop.
- Carefully check the women for the torn vagina and cervix by sewing the cut vagina
- Always check the baby head for the correct placement of the pumping head. The place to submerge is the center of the circle of pumping head. Make sure that the pumping head is placed at that place and conduct self-assessment on the important point for good practice
- Check the pumping spot on the baby's head and explain to the parents that it will disappear soon and not pose any danger
- The swollen head may exist for several days but it is not a problem and always happens during delivery
- If it is severe, check for sub-galeal hemorrhage. If sub-galeal hemorrhage is severe, the baby needs the artery injection of normal saline to save him; otherwise, the baby will have a shock and life danger even though he was healthy when he

was born. If this sign happens, the baby must be sent to nursing care unit or the baby care hospital where an operation procedure can be performed if necessary

- Monitor the woman for the uterine contraction: bleeding, and vital signs every 15 minutes for the first hour and every 30 minutes for the next hour and every one hour for the next three hours

Make sure that the baby is in skin-to-skin contact with the mother and breastfeed the baby if he indicates feeding cues

What to do after the procedure:

- Remove the gloves and put them in a bin to prevent infection
- Clean the hands with water and soap.
- Clean the tools with an antiseptic solution
- Record the information and procedure implemented.

7-10 Caesarean section

Review for indications.

- Ensure that vaginal delivery is not possible
- Check for fetal life by listening to the fetal heart rate and examine for fetal presentation
- Review general care principles and operative care principles, and start an IV infusion
- Optional anesthesia: Loco-Regional Anesthesia (spinal anesthesia, Epidural anesthesia) or local infiltrative anesthesia with lidocaine or general anesthesia
 - Local infiltrative anesthesia is a safe choice if general anesthesia or spinal anesthesia is not required be used.
 - The use of local infiltrative anesthesia for cesarean section requires that the provider counsel the woman and reassure her throughout the procedure. The provider must keep in mind that the woman is awake and alert, and should use instruments and handle tissue as gently as possible.

Note: In the case of heart failure, use local infiltration anesthesia with conscious sedation. Avoid spinal anesthesia.

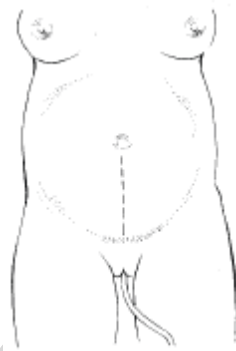
- Determine if a **high vertical incision** is indicated:
 - An inaccessible lower segment due to dense adhesions from previous cesarean sections
 - Transverse lie (with baby's back down) for which a lower uterine segment incision cannot be safely performed
 - Fetal malformations (i.e., Shoulder dystocia)
 - Placenta previa
 - Carcinoma of the cervix.

- If the **baby's head is deep down in the pelvis** as in obstructed labor, prepare the vagina for assisted cesarean delivery.
- Have the operating table tilted to the left or place a pillow or folded linen under the woman's right lower back to decrease supine hypotension syndrome.

OPENING THE ABDOMEN: Vertical incision

- Make a midline vertical incision below the umbilicus to the pubic bone, through the skin, and to the level of the fascia.

Note: If the cesarean section is performed under local infiltrative anesthesia, make a midline incision that is about 4 cm longer than when general anesthesia is used. A Pfannenstiel incision should not be used, as it takes longer, retraction is poorer and it requires more local anesthetic.



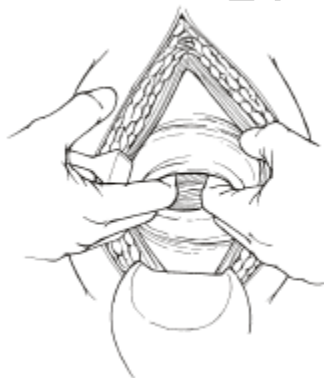
Vertical incision

- Make a 2–3 cm vertical incision in the fascia (or fascia horizontal incision if the Pfannenstiel incision and the hold the fascial edge with forceps and lengthen the incision up and down using scissors)
- Use fingers or scissors to separate the rectus muscles
- Use fingers to make an opening in the peritoneum near the umbilicus. Use scissors to lengthen the incision up and down in order to see the entire uterus. Carefully, to prevent bladder injury, use scissors to separate layers and open the lower part of the peritoneum
- Place a bladder retractor over the pubic bone
- Use forceps to pick up the loose peritoneum covering the anterior surface of the lower uterine segment and incise with scissors
- Extend the incision by placing the scissors between the uterus and the loose serosa and cutting about 3 cm on each side in a transverse fashion.
- Pull bladder retractor over the pubic bone or using hands or tampon to push urine bladder to far down from the lower section.

Opening the uterus:

- Use a scalpel to make a 3 cm transverse incision in the lower segment of the uterus. It should be about 1 cm below the level where the vesicouterine serosa was incised to bring the bladder down
- Widen the incision by placing a finger at each edge and gently pulling upwards and laterally at the same time
- If the lower uterine segment is thick and narrow, extend the uterine incision in a crescent shape, using scissors instead of fingers.
- If amniotic fluid has not yet ruptured, break amniotic fluid and ask an assistant to suction the fluid.

It is important to make the uterine incision big enough to deliver the head and body of the baby without tearing the incision.



Enlarging the uterine incision

Delivery of the baby¹ and placenta:

- To deliver the baby, place one hand inside the uterine cavity between the uterus and the baby's head
- Gently lift the baby's head through the incision, taking care not to extend the incision down towards the cervix

¹ A care should be immediately performed as soon as the baby is born for all caesarean sections where the mother is in the situation of spinal anesthesia or particular area regardless of the pregnancy age and if no immediate care for the consequence of mother or baby and the baby breathes normally when delivered.

- With the other hand, gently press on the abdomen over the top of the uterus to help deliver the head
- If the baby's head is deep down in the pelvis or vagina, ask an assistant (wearing sterile gloves) to reach into the vagina and push the baby's head up through the vagina. Then lift and deliver the head.



Delivering the baby's head



Delivering the deeply engaged head

- Following the delivery of the baby's shoulder and body, place the baby on a piece of sterilized dry cloth already prepared on the mother's stomach or between her thighs. Provide immediate care to the newly-born baby in the same way as normal delivery (Ex: Begin to wipe dry the baby and wipe to keep the baby completely dry, and while wiping dry, evaluate the breathing, color and movement.
 - After wiping dry the whole body, if the baby breathes normally during the operation and removal and is healthy, delay the pressing and cutting of the umbilical cord and wait until the pulse of the umbilical cord stops beating if there is no emergency to save the mother or baby immediately, handover the baby to a midwife or pediatrician or assistant nurse in the surgery team to

immediately place the baby in skin-to-skin contact with the mother on the mother's chest during the surgery to avoid the contact with a sterilized pad and continue the further care

- Placing the baby in skin-to-skin contact with the mother during the surgery is only possible if the mother is awake and there is no emergency, such as the mother is shaking or her blood pressure is low and is unwell due to the side effects of medicine, etc.
- Inject Oxytocin 5 IU through IV and 20 IU per 1 liter of serum at a speed of 60 drops/minute for two hours
- If the baby does not breathe, check for respiratory obstruction and pumping out phlegm, and immediately press and cut the umbilical cord and hand over the baby to a midwife or pediatrician for a life-saving procedure on the heating bed/device² or a dry place already prepared and located two meters from the surgical bed. If the bed/heating device is no available, cover the baby with a piece of dry cloth, and leave the face and chest open, and pumping air into the baby chest according to the national guideline for immediate newborn care (INC). If the baby normally breathes, stop the pumping of air and make sure that the baby continues to normally breathe. If this situation remains good, remove the gloves and wear new sterilized gloves to trim the umbilical cord, and immediately place the baby in skin-to-skin contact with the mother if the mother does not require any emergency procedure

Place the baby in skin-to-skin contact with the mother for at least 60 minutes by keeping the baby on the mother's chest when the mother is transferred from the surgical table to the post-surgery ward. Under some circumstances in which the staff cannot transfer the mother and the baby at the same time, wrap and hold the baby temporarily until the mother is transferred to the post-surgery ward, then continue to place the baby in skin-to-skin contact with the mother. The implementation of immediate newborn care, including the weighing, measuring the length and circumference, ID tagging, checking the baby, injecting vitamin K1, applying eye drops, and vaccinating must be delayed until after the baby is breastfed for the first time and has been placed in skin-to-skin contact for at least 60 minutes.

Note: Read the detailed instruction in "*Operation Benchmark for Early Essential Newborn Care (EENC) during the cesarean sections*".

- Provide a dose of antibiotic, ampicillin 2g IV, or cefazoline 1g after the umbilical cord is pressed and cut
- Remove the placenta by gently extending the umbilical cord and scrub the uterus (on the stomach)

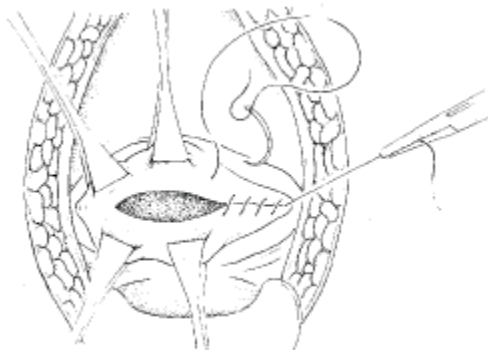
² The heating bed/device should be operated at a temperature of 36.5C in preparation for saving the babies.

- Remove the placenta and amnion using the tweezers to tweeze the amnion and make sure that the entire amnion is removed.

Closing the uterine incision

Note: If a Couvelaire uterus (swollen and discolored by blood) is seen at cesarean section, close it in the normal manner. Observe for bleeding and assess uterine muscle contraction. Be prepared to manage coagulopathy or atonic uterus.

- Grasp the corners of the uterine incision with tweezers
- Grasp the edges of the incision with tweezers. Make sure it is separate from the bladder
- Look carefully for any extensions of the uterine incision
- Repair the incision and any extensions with a continuous locking stitch of 0 Vicryl (Polyglycolic) or chromic catgut suture
- If there is any further bleeding from the incision site, close and repair it in x-letter form. There is no need for a routine second layer of sutures in the uterine incision.



Closing the uterine incision

Closing the abdomen

- Look carefully at the uterine incision before closing the abdomen. Make sure there is no bleeding and the uterus is firm. Use a sponge to remove any blood clots inside the abdomen
 - Examine carefully for injuries to the bladder and repair any found
 - Close the fascia with Vicryl (or polyglycolic) suture.
- Note:** There is no need to close the bladder peritoneum or the abdominal peritoneum.
- If there are signs of infection, place a discharge tube
 - If there are no signs of infection, close the skin with vertical mattress sutures of 3-0 nylon (or silk) and apply a sterile dressing

- Gently push on the abdomen over the uterus to remove blood clots from the uterus and vagina.

POST-PROCEDURE CARE

- Review postoperative care principles
- If bleeding occurs:
 - Massage the uterus to expel blood and blood clots. Presence of blood clots will inhibit effective uterine contractions
 - Give oxytocin 20 IU in 1 L IV fluids (normal saline or Ringer's lactate) at 60 drops per minute and ergometrine 0.2 mg IM and prostaglandins. These drugs can be given together or sequentially
- If there are signs of infection or the woman currently has a fever, give a combination of antibiotics as described above until she is fever-free for 48 hours
- Give appropriate pain management.

7.11 Postpartum sterilization

The woman and her husband who do not want more children and have carefully discussed about postpartum sterilization by tubal ligation. The couples need to receive thorough counseling from health providers about all birth spacing methods and help them to choose best method that suits their condition.

Indications:

1. Decision for sterilization method is volunteer, without force or receive any incentive
2. Woman who has health problem, she will be at risk if become pregnant.
3. The woman can voluntarily receive tubal ligation if she is at the age and has the number of children as follows:
 - If the woman is younger than 30 years old, she must have at least three alive children and the third child must be at least two years old.
 - If the woman is older than 30 years old, she must have at least two alive children and the second child must be at least two years old.

Tubal ligation (tubectomy ad modum Pomeroy) can be performed during both the cesarean sections and vaginal delivery. For post vaginal delivery, the fundus uterine and tubes are about at umbilicus level in the first 2-3 days after birth, therefore, it is easy to perform a tubal ligation.

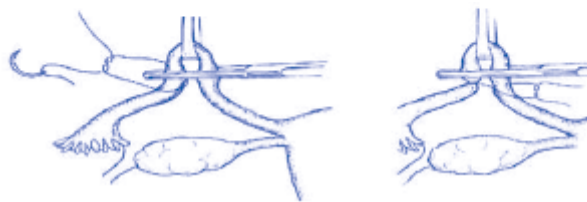
Tubal ligation procedure:

- Review the informed consent on sterilization
- Adhere to the principle of good care (communication and infection prevention)

- Applied local anesthesia is in the lower half of the umbilicus and into the abdominal wall.
- Incise abdomen vertically in a length of 2-3cm below next to the mother's umbilicus and make cuts on fascia layer, then hold fascia edge with forceps and extend the cut with a scissor and open it to see peritoneum.
- Use fingers and scissors to open abdominal wall (be careful of injuring the intestines because intestines might stick to the abdominal wall)
- Use fingers to push uterus to one side and the fingers of the other hand finding the tube on the other side (Eg. Push uterus to the woman's left side, and finds the right tube that will be within easy reach from the umbilicus)
- Lift the tube out of the abdomen with a Babcock clamp.
- Crush the base of the loop with artery forceps and ligate it in a figure-of-eight fashion.
- Take out the artery forceps (crushed area with line of resection indicated by dotted line)
- Excising the loop of the fallopian tube.
- Put the tube back into the abdomen and do the same for another tube of uterus.
- Close mini-laparotomy.



A- Tweeze and raise the uterine tube



B. Crushing the base of the loop with forceps and ligating it in a figure-of-eight fashion



C. Take out the artery forceps (crushed area with line of resection indicated by dotted line)

- D. Excising the loop of the fallopian tube

Tubal ligation

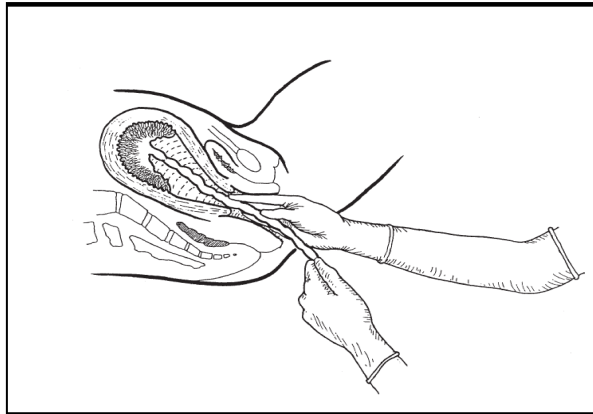
7-12 Manual removal of placenta

Indication:

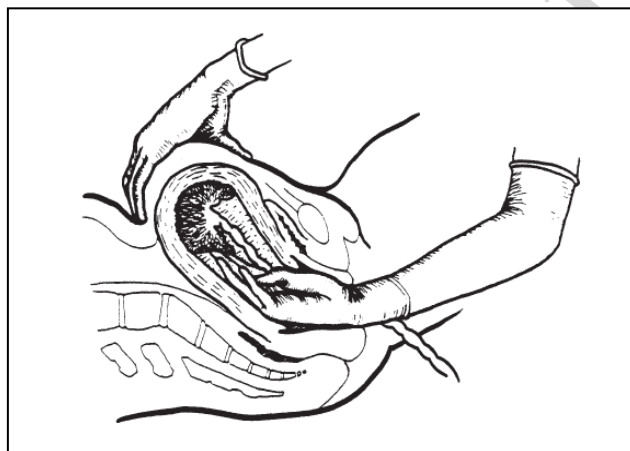
- If the placenta remains attached within 30 minutes after the active management of third stage of labour by Oxytocin, in particular when there is severe bleeding, decision to manually remove it is important.
- If no bleeding, monitor, and wait another 30 minutes.
- One hour after delivery, if no bleeding, the placenta that remains attached could be sign of placenta accreta that requires total and subtotal hysterectomy.

Procedure:

- Adhere to the principles of good care (communication and infection prevention).
- Provide emotional support and encouragement.
- If the mother is bleeding heavily, it may be necessary to perform the removal in the delivery room
- If there is no bleeding and there is no urgency, the procedure should be done in the operating theater (since it may be a case of placenta accreta)
- Start an IV infusion and give Diazepam (10mg), and Atropine (¼ mg) IM 15 minutes before the procedure. If possible, the anesthesia (Ketamine) should be used and shall be performed inside the operation room.
- Ensure the bladder is empty; catheterize if necessary.
- Give a single dose of prophylactic antibiotics: ampicillin 2 g IV PLUS metronidazole 500 mg IV;
- Hold the umbilical cord with a clamp. Pull the cord gently until it is parallel to the floor.
- Wearing sterile gloves (use elbow length/gauntlet gloves), insert the hand into the vagina and up into the uterus.



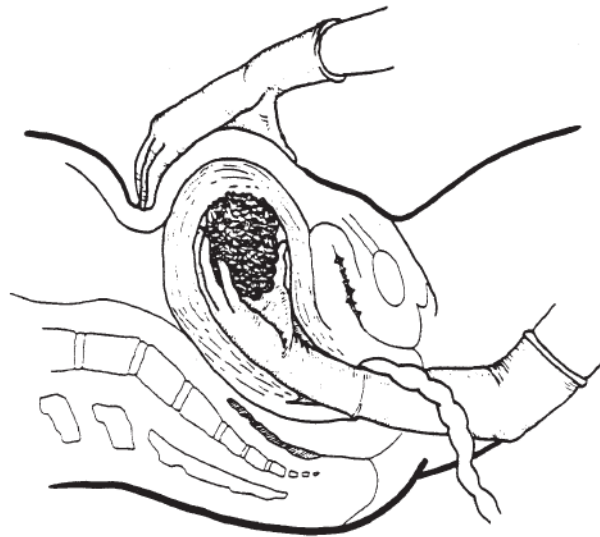
Introducing one hand into the vagina along the cord



Supporting the uterus while detaching the placenta

- Let go of the cord and move the hand up over the abdomen in order to support the uterus and to provide counter traction during removal to prevent uterine inversion. If uterine inversion occurs, reposition the uterus
- Move the fingers of the hand in the uterus laterally until the edge of the placenta is located
- If the cord has been detached previously, insert a hand into the uterine cavity. Explore the entire cavity until a line of cleavage is identified between the placenta and the uterine wall
- Detach the placenta from the implantation site by keeping the fingers tightly together and using the edge of the hand to gradually make a space between the placenta and the uterine wall
- Proceed slowly around the placental bed until the whole placenta is detached from the uterine wall
- Hold the placenta and slowly withdraw the hand from the uterus, bringing the placenta with it

- With the other hand, continue to provide counter-traction to the uterus by pushing it in the opposite direction of the hand that is being withdrawn
- If the placenta does not separate from the uterine surface by gentle lateral movements of the fingertips at the line of cleavage, remove placental fragments. If the tissue is very adherent, suspect placenta accreta and proceed to laparotomy and possible subtotal hysterectomy.



withdrawing the hand from the uterus

- Remove the inside of the uterine cavity again to ensure that no more placental tissue. (one time only)
- Give oxytocin 20 IU in 1 L IV fluid (normal saline or Ringers lactate) at 60 drops per minute
- Ask an assistant to massage the uterus to encourage uterine contraction
- If there is heavy bleeding, provide bimanual compression if the uterus does not contract well.
- Provide Ergometrine 0.2 mg IM or Oxytocin 10 IU. If there is continued bleeding, additionally give Misoprostol 600 ug rectally
- Examine the vagina, perineum, and cervix for tears and repair or repair episiotomy.

Post-procedure care

- Observe the woman closely until the effect of IV sedation has worn off
- Monitor the vital signs every 15 minutes for the first two hours and every 30 minutes for the next one hour and every hour for the third hour until the next six hours or until the condition becomes stable
- Palpate the uterus every 15 minutes for the next 4 hours to ensure that it remains contracted

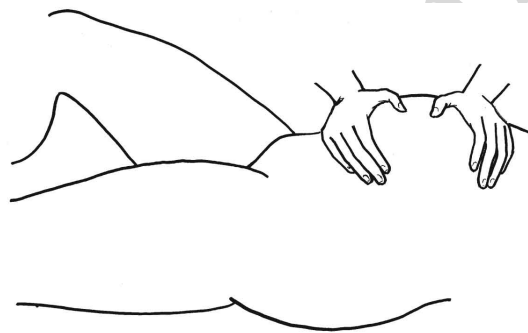
- Continue infusion of IV fluids.

7-13 External Bimanual Compression of uterus

Indications:

continued heavy vaginal bleeding in spite of manual removal of placenta

1. Place the left hand on the fundus and make it go down as far as possible behind the uterus
2. Place the right-hand flat on the abdomen between the umbilicus and the symphysis pubis
3. Press the hands towards each other in order to compress the uterus and thereby the blood vessels at the placental site.



External bimanual compression of the uterus

7-14 Internal bimanual compression of the uterus

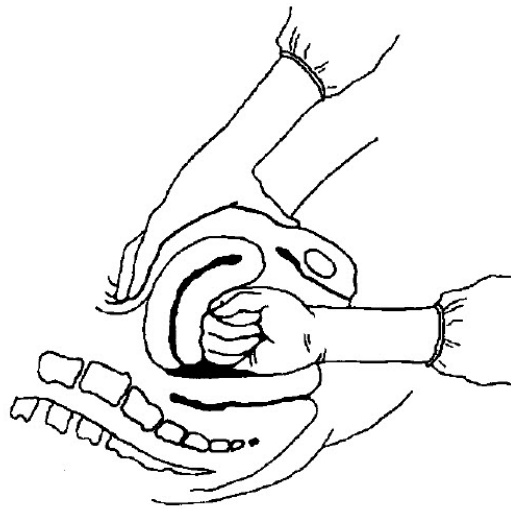
Indications

Continued heavy vaginal bleeding despite other interventions (i.e., manual removal of placenta, and external bimanual compression of the uterus).

Procedure

- Adhere to the principles of good care (communication and infection prevention)
- Provide emotional support and encouragement. Wear sterile gloves, insert a hand into the vagina and form a fist
- Place the fist into the anterior fornix and apply pressure against the anterior wall of the uterus
- With the other hand, press deeply into the abdomen behind the uterus, applying pressure against the posterior wall of the uterus

- Maintain compression until bleeding is controlled and the uterus contracts.



Internal bimanual compression of the uterus

7-15 Aortic Compression

Indication:

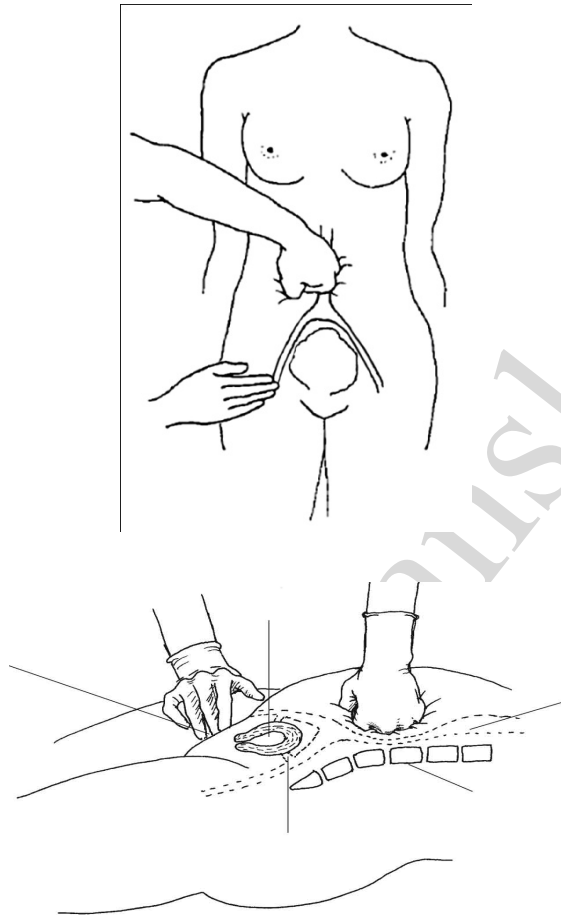
Severe postpartum hemorrhage despite other measures

- For the women who bleed quickly after delivery
- This intervention must be conducted earliest, meaning that must be done before IV infusion,
- Therefore, if the bleeding is not significantly improved through uterus massage and injection of Oxytocin, a health staff must begin the aortic compression to prevent the bleeding
- More tasks to be carried (such as IV infusion, placenta examination, suture the tear). These tasks can be done at the same as aortic compression.

Procedure:

1. Have the woman lie flat on her back
2. Stand at her side and use one hand palpate the femoral pulse
3. Use the other hand to form a fist by letting the thumb to be outside the other fingers, then press on the aortic blood vessel on the abdominal area slightly above the uterine fundus (normally at navel), and press it with increased force until the femoral pulse stops beating
4. If the femoral pulse continues to beat, press with more force or slightly move the fist to the left, and continue to press until the femoral pulse stops beating
5. Maintain compression until bleeding is controlled.

6. Change hands if necessary or instruct the assistant to help continue the aortic compression while you continue with other measure to stop the bleeding.



Aortic Compression

Note: This is a 2temporary measure while waiting for other intervention (surgery), sometimes, applying this procedure can stop bleeding.

7-16 Use of the Non-pneumatic Anti-Shock (NASG)

Indication:

Postpartum hemorrhage (PPH) continues, in spite of intervention, with sign(s) of shock. This intervention is carried out to mitigate the bleeding during transportation to a hospital where surgery and blood infusion is available (it is a need emergency tool during referral).

Steps of using NASG:

Step 1

- The health worker applying aortic compression must stop or help roll the woman to her left side so that the other health worker can place the NASG under the woman's back with its upper edge just below her lowest rib.
- Then the workers who placed the NASG helps roll her onto her right side in order to let the health worker who applied aortic compression to fully unroll all NASG flaps with the marked NASG spots positioned under her backbone.
- Ensure correct application of the NASG starting from above the two ankles
- Close segment #1 tightly around both ankles and ensure it is tight enough by sliding a finger underneath.

Step 2

- Close segment #2 tightly around each calf. Ensure it is tight enough by sliding your finger underneath.
- Try to leave her knees free so that she can urinate and it is easy to perform any procedures as she may wear it for an extended period.

Step 3

- Close segment #3 tightly around each thigh. Ensure it is tight enough by sliding your finger underneath. Leave her free.

Step 4

- Close segment #4 around the pelvis by aligning the lower edge just above the pubis.

Step 5

- Close segment #5 with the pressure ball over the abdominal aorta, which generally is at the woman's umbilicus.
- Close segment #6 and refer the woman immediately to a hospital with an operating theatre and capacity for blood transfusion, while ensuring that the woman can breathe normally.

Caution: Do not use the NASG on a woman with more than 24-week gestation and a live fetus.

Note:

- Two people can close segment # 1, 2 and 3 simultaneously.
- Only one person closes segments # 4, 5, and 6
- Ensure that the woman can breathe normally when closing segment #6.



For a shorter woman:

For a shorter woman, adjustment can be made easily to fit the woman by first folding segment #1 back inside segment #2, then close segment #2 at the ankles and continue with the segment #3, 4, 5 and 6 as above.

Note:

- This is temporary procedure that can buy time to execute another intervention (such as surgery and blood transfusion...)
- The NASG can be removed only at a referral hospital with an operating theatre and capacity for blood transfusion.

Using NASG while performing aortic compression:

As previously stated, aortic compression and NASG can be performed simultaneously. If the woman has heavy bleeding, you may need to perform aortic compression right the way to stop bleeding while you are waiting for the arrival of the helper or while your colleague goes to take the NASG for the woman. You will need to stop aortic compression while placing the NASG under the woman, but you can compress it again after your colleague starts putting on the NASG for her from the feet to the pelvis of the woman. If the woman is required to be referred to the hospitals with a higher level of services, you may not be able to continue aortic compression constantly while referring. The top segment of NASG attached with the pressure ball which can be placed on the aorta artery will press the aorta artery when it is closed tightly and it will help to reduce the bleeding. Stop aortic compression and close the top segment of NASG immediately.

To prevent complication when using NASG, you need to:

- Ensure the protection of airway and prevention of the absorption of the vomit

- Ensure the availability of a standby midwife giving care for the woman
- There should be only one person who close segment for pelvis and abdomen (although the woman loses consciousness and only the start of using NASG that will require two persons to do so)
- Follow up the amount of the urine
- Ensure that a relative or assistant will standby with the patient losing consciousness and he/she can explain to the woman the purpose of the use of the NASG. When the woman regains consciousness, wakes up, or feels afraid may try to take off the NASG before the time she will be dead by doing so
- Do not open the segment for abdominal first.

For the referral hospital (CPA3)

For the referral hospital, CPA3 may also be used for wearing the NASG because it is the temporary intervention while waiting for the other interventions or if needed. The referral hospital requires the technique of taking off the NASG transferred from the health centers or from the other health facilities.

Safely taking off the NASG

Taking off the NASG shall be done only in the following cases:

- Only at the referral hospital with surgery and blood transfusion with the proper inspection
- When the woman regains her stability after the root cause is treated and in accordance with the time specified below only
- Typically, the NASG may be only taken off after the fluid infusion and the blood transfusion because the woman will only regain stability thereafter
- If you have not helped the woman to regain stability by fluid infusion and blood transfusion complementing the amount she has lost, but you take off the NASG, the woman will be highly risky as the woman remain in a severe shock situation and cannot manage to recover and ultimately, she will die.

Note: Taking off the NASG quickly or not taking off with the order may make the woman become shocked again and can be risky.

Taking off the NASG shall comply with the following procedures:

Procedure:

Step 1:

The NASG shall only be removed when the woman regains her stability for two hours after detection and the cause of the bleeding is treated and that she was treated with fluid and blood transfusion:

- Stop bleeding
- The pulse rate decreases to <100/mn
- The blood pressure is over 100/60mmHg
- The woman regains consciousness

Step 2:

- The interval for taking off each segment shall be waited 15 minutes so that the blood to be returned
- Always wear gloves when handling the contaminated NASG
- Taking off the NASG shall be started from the lowest segment, normally it is No. 1 or 2 subsequently if the woman is short and the No. 2 is at the ankles and up to the subsequent orders
- 15 minutes after open the first segment, before opening the second one you should take her the pulse rate and the blood pressure to confirm that now you can open the next segment.

Step 3:

- 15 minutes thereafter, if the pulse rate and the blood pressure are stable, you now can open the next segment.

Steps 4 and 5

- After 15 minutes, you can take pulse rate and the blood pressure again. If they are stable, you can open the next segment. Please follow this procedure, meaning that after opening each segment, wait for 15 minutes and then take pulse rate and blood pressure until all of the segments are all opened.

Caution: Rule 20

- After opening one segment, if the blood pressure drops by 20mmHg or if the pulse rate increases by 20 per minute:
 - Reclosing all of the segments and consider giving extra fluid infusion or blood transfusion
 - If the bleeding reoccurs, close all of the segments and determine the cause of the bleeding.

Note: Do not take off the NASG at the health center or referral hospital CPA1.

7-17 Manual Vacuum Aspiration

Indications

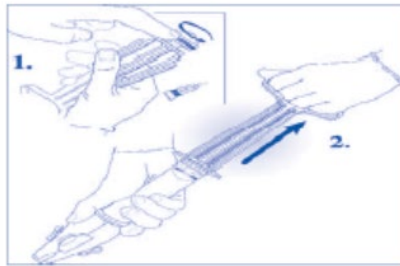
- Induced abortion up to 12 weeks of pregnancy
- Postabortion care for complete uterine evacuation
- Molar pregnancy
- Postpartum hemorrhage due to retained placental fragments

Procedure

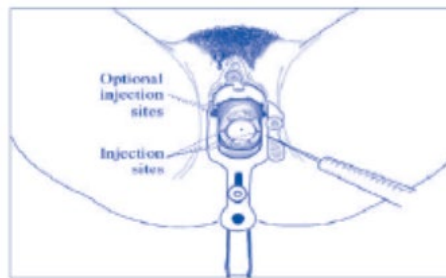
- Adhere to the principles of good care (communication and infection prevention)
- Provide emotional support and encouragement
- Provide pain management for the procedure
- Prepare the tools and equipment.

Summary of the 10 steps for Manual Vacuum Aspiration (MVA) for the first quarter:

- **Step 1 Gathering equipment:** Manual Vacuum Aspiration Plus and the drawtube shall ready for use and ensure that there is a vacuum in the drawing tool. Other equipment shall be readily prepared for performing drawing and cleaning the uterus.

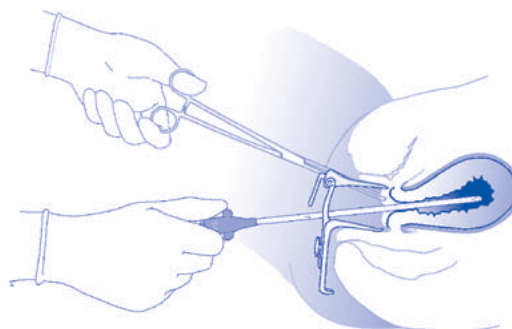


- **Step 2 Preparation for the woman:** The woman has been consulted with and signed the agreement and has been given the pain-relief medicine. Ensure that the woman has no urine in the urinary bladder. Have the woman sleep in the bed in the appropriate position.
- **Step 3 Cervix Cleansing:** Cleansing the cervix with the infection solution. No touch technique shall be implemented.
- **Step 4 Injecting Cervix the Lidocaine:** Lidocaine with 1% mixture, use 10-20ml for injecting the cervix (at the point of hours 12, hours 4 and 8 hours).



- **Step 5 Cervix Extension:** The cervix shall be extended appropriately according to the size of the fetus by using the vacuum aspirator ranging from the small to the bigger sizes. Sometimes the misoprostol 400mcg may be used to soften the cervix for 3 to 4 hours before performing the procedure.

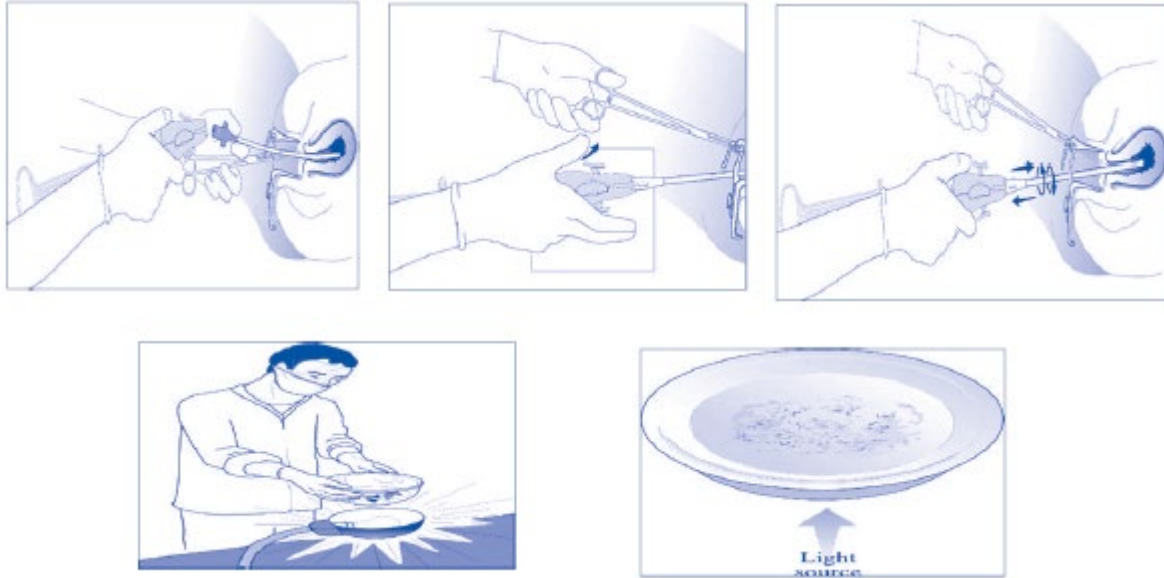
Step 6 Inserting the vacuum aspiration: inserting the cannula gently until the top of the womb and then pull it back gently. It shall be careful not to break the uterus by pushing the aspirator deeply beyond the limitation.



Step 7 Aspirating tissue uterus: Attached the vacuumed aspirator to the cannula and then loosen the button by rotate the cannula slowly and push it forward, then pull it back gently at the 180° to pump out the fetus tissue. Identify the indications confirming that the uterus is pumped thoroughly such as there is a red or pink form in the cannula, but there is no fetus tissue, recognizing the touching between the cannula with the uterus surface, uterus contracts around (grips) the cannula .

Provisional translation

Step 8 Inspecting the fetus tissue: If it is necessary, clean the blood from the fetus tissue then place it into the transparent plastic bowl containing some clean water. See the volume and the presence of the fetus tissue to make sure that the fetus tissue is pumped out completely.



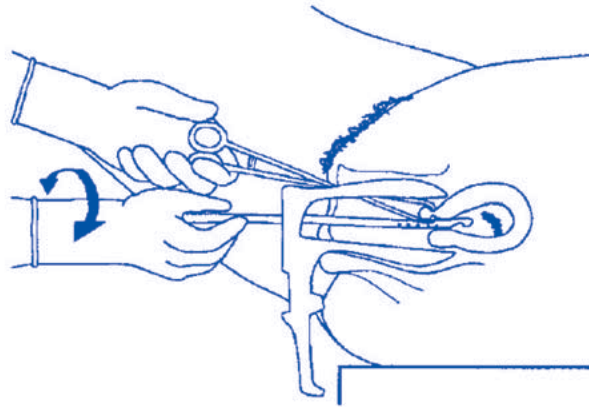
Step 9 Implementing other procedures at the same time: Other procedures can be given to the women such as Intrauterine Device (IUD) if needed and appropriate or repair the cervix if there is a tear.

Step 10 Soaking the equipment: Prepare the equipment in accordance with the infection prevention control principle. Have the woman lie in a comfortable position. Record the procedure into the files.

Note:

for molar pregnancy, when the uterine contents are likely to be copious, have three syringes ready for use. If possible, should use electric vacuum aspiration.

- In the case of incomplete abortion, a sponge or ring forceps is preferable. It is likely than the tenaculum to tear the cervix with traction.
- Place the used equipment in the sterile tray until you are certain procedure is completed, then these can be placed into disinfection solution.



Cleaning uterus

After care

- Give the antibiotic for the procedure vacuum aspiration
- Continue to give analgesic drug if necessary.
- Encourage the woman to eat, drink and walk as she wishes
- Provide the woman with the consultation on the contraception methods if the woman prefers
- If there are no complications, discharge the woman in 1-2 hours.
 - Advise the woman to watch for signs and symptoms requiring immediate attention: Prolonged cramping (more than 2 to 3 days)
 - Foul smelling or prolong bleeding (more than 2 weeks)
 - bleeding is more than normal menstruation
 - severe or increased abdominal pain
 - Fever, chills or malaise
 - Fainting

For detailed instruction, see National Protocol for Safe Abortion.

7-18 Bedside clotting test

Assess clotting status using this **bedside clotting test**:

- Take the blood of venous blood into a small, dry, clean, plain glass test tube (approximately 10 mm x 75 mm)
- Hold the tube in a closed fist to keep it warm ($\pm 37^{\circ}\text{C}$)
- After four minutes, tip the tube slowly to see if a clot is forming
Then tip it again every minute until the blood clots and the tube can be turned upside down
- Failure of a clot to form after seven minutes or a soft clot that breaks down easily suggests coagulopathy.

7-19 Correcting uterine inversion

Review for indications.

- Adhere to the principles of good care (communication and infection prevention)
- Start an IV infusion
- Give Diazepam 10mg and Atropine ¼ mg IM 15 minutes before the procedure. If necessary, use general anesthesia
- Thoroughly cleanse the inverted uterus using antiseptic solution
- Apply compression to the inverted uterus with a moist, warm sterile towel until ready for the procedure.

Procedure

Wearing sterile gloves, grasp the inverted uterus and push it through the cervix in the direction of the umbilicus to its normal anatomic position, using the other hand to stabilize the uterus. If the placenta is still attached, manually remove the placenta after correction.

Note: It is important that the part of the uterus that came out last (the part closest to the cervix) goes in first.

- Manual correction under general anesthesia
- Do manual repositioning under general anesthesia using halothane
- Halothane is recommended because it relaxes the uterus
- Grasp the inverted uterus and push it through the cervix in the direction of the umbilicus to its normal anatomic position, using the other hand to stabilize the uterus. If the placenta is still attached, manually remove the placenta after correction.

Combined abdominal-vaginal correction

Abdominal-vaginal correction under general anesthesia may be required if the above measures fail.

Review for indications:

- Adhere to the principles of good care (communication and infection prevention)
- Open the abdomen:
 - Make a midline vertical incision below the umbilicus to the pubic bone, through the skin and to the level of the fascia
 - Make a 2–3 cm vertical incision in the fascia
 - Hold the fascial edge with forceps and lengthen the incision up and down using scissors
 - Use fingers or scissors to separate the rectus muscles (abdominal wall muscles)
 - Use fingers or scissors to make an opening in the peritoneum near the umbilicus. Use scissors to lengthen the incision up and down

- Carefully, to prevent bladder injury, use scissors to separate layers and open the lower part of the peritoneum
- Place a bladder retractor over the pubic bone and place self-retaining abdominal retractors
- Dilate the constricting cervical ring digitally
- Place a tenaculum through the cervical ring and grasp the inverted fundus
- Apply gentle continuous traction to the fundus while an assistant attempts manual correction vaginally.
- If **traction fails**:
 - Incise the constricting cervical ring vertically and posteriorly (where the incision is least likely to injure the bladder or uterine vessels)
 - Repeat digital dilatation, tenaculum and traction steps
 - Close the constriction ring
- If **correction is successful**, close the abdomen:
 - Make sure there is no bleeding. Use a sponge to remove any clots inside the abdomen
 - Close the fascia with continuous Vicryl number 1 (or Polyglycolic) suture

Note: There is no need to close the bladder peritoneum or the abdominal peritoneum.

- If there are **signs of infection**, pack the subcutaneous tissue with gauze and place loose Vicryl number 0 (or polyglycolic) sutures. Close the skin with a delayed closure after the infection has cleared
- If there are **no signs of infection**, close the skin with vertical mattress sutures of 3-0 nylon and apply a sterile dressing.

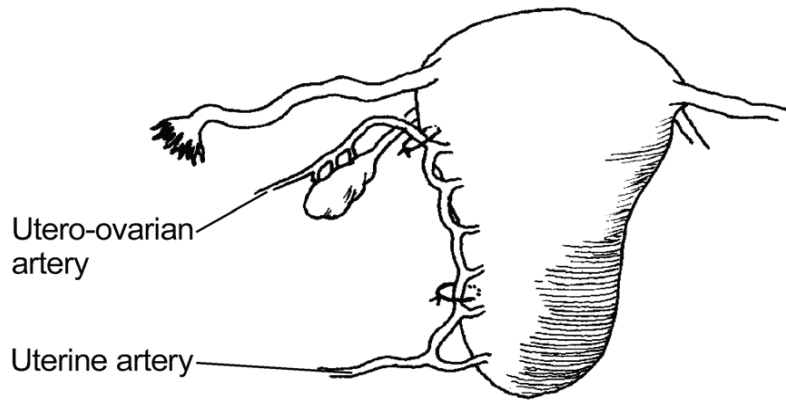
Post-procedure care

- Once the inversion is corrected, infuse Oxytocin 20 IU in Normal Saline or Lactate ringer 500 mL of IV at 10 drops/minute:
 - If **hemorrhage is suspected**, increase the infusion rate to 60 drops per minute
 - If the **uterus does not contract after oxytocin**, give ergometrine 0.2 mg or prostaglandins (page 130)
 - Give a single dose of prophylactic antibiotics after correcting the inverted uterus: Ampicillin 2 g IV PLUS Metronidazole 500 mg IV; OR Ceftriaxone 1 g IV PLUS Metronidazole 500 mg IV.
- If **combined abdominal-vaginal correction** was used, see postoperative care principles
- If there are **signs of infection** or the **woman currently has fever**, give a combination of antibiotics until she is fever-free for 48 hours:
 - Ampicillin 2 g IV every six hours; PLUS
 - Gentamicin 5 mg/kg body weight IV every 24 hours; PLUS

- Metronidazole 500 mg IV every eight hours.
- Give appropriate analgesic drugs.

7-20 Uterine and utero-ovarian artery ligation

- Review for indications
- Adhere to the principles of good care and operative care, and start an IV infusion
- Give a single dose of prophylactic antibiotics:
 - Ampicillin 2 g IV
 - OR Ceftriaxone 1 g IV
- Open the abdomen:
 - Make a midline vertical incision below the umbilicus to the pubic bone, through the skin and to the level of the fascia
 - Make a 2–3 cm vertical incision in the fascia
 - Hold the fascial edge with forceps and lengthen the incision up and down using scissors
 - Use fingers or scissors to separate the muscles (abdominal wall muscles)
 - Use fingers to make an opening in the peritoneum near the umbilicus. Use scissors to lengthen the incision up and down in order to see the entire uterus. Carefully, to prevent bladder injury, use scissors to separate layers and open the lower part of the peritoneum
 - Place a bladder retractor over the pubic bone and place self-retaining abdominal retractors
- Pull on the uterus to expose the lower part of the broad ligament
- Feel for pulsations of the uterine artery near the junction of the uterus and cervix
- Using 0 chromic catgut or Vicryl suture on a large needle, pass the needle around the artery and through 2–3 cm of myometrium (uterine muscle) at the level where a transverse lower uterine segment incision would be made. Tie the suture securely
- Place the sutures as close to the uterus as possible, as the ureter is generally only 1 cm lateral to the uterine artery
- Repeat on the other side
- If the **artery has been torn**, clamp and tie the bleeding ends
- Ligate the utero-ovarian artery just below the point where the ovarian suspensory ligament joins the uterus
- Repeat on the other side
- Observe for continued bleeding or formation of hematoma.



Sites for ligating uterine and utero-ovarian arteries

- Close the abdomen:
 - Ensure that there is no bleeding. Remove clots using a sponge
 - Examine carefully for injuries to the bladder and repair any found
 - Close the fascia with continuous 0 chromic catgut or Vicryl suture.

Note: There is no need to close the bladder peritoneum or the abdominal peritoneum.

- If there **are signs of infection**, pack the subcutaneous tissue with gauze and place loose 0 catgut sutures. Close the skin with a delayed closure after the infection has cleared
- If there are **no signs of infection**, close the skin with vertical mattress sutures of 3-0 nylon (or silk) and apply a sterile dressing.

Post-procedure care:

- Review postoperative care principles
- Uterine Monitor urine output. If there is **blood in the urine** or the **woman has loin pain**, refer the woman to a tertiary centre, if possible, for treatment of an obstructed ureter
- If there **are signs of infection** or the woman **currently has fever**, give a combination of antibiotics until she is fever-free for 48 hours
- Give appropriate analgesic drugs
- If there are **no signs of infection**, remove the abdominal drain after 48 hours
- Offer other health services, if possible.

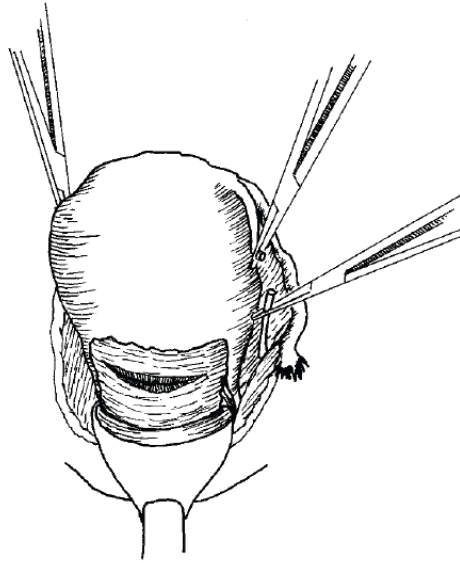
7-21 Subtotal and total hysterectomy

Postpartum hysterectomy can be **subtotal** (supracervical) unless the cervix and lower uterine segment are involved. **Total** hysterectomy may be necessary in the case of a tear of the lower segment that extends into the cervix or bleeding after placenta praevia.

- Review for indications
- Adhere to the principles of good care and operative care, and start an IV infusion
- Give a single dose of prophylactic antibiotics: (Ampicillin 2 g IV; OR Ceftriaxone 1 g IV)
- If there is uncontrollable hemorrhage following vaginal delivery, keep in mind that speed is essential
- To open the abdomen:
 - Make a midline vertical incision below the umbilicus to the pubic bone
 - Make a 2–3 cm vertical incision in the fascia
 - Hold the fascial edge with forceps and lengthen the incision up and down using scissors
 - Use fingers or scissors to separate the muscles (abdominal wall muscles)
 - Use fingers to make an opening in the peritoneum near the umbilicus. Use scissors to lengthen the incision up and down in order to see the entire uterus. Carefully, to prevent bladder injury, use scissors to separate layers and open the lower part of the peritoneum
 - Place a bladder retractor over the pubic bone and place self-retaining abdominal retractors
- If the delivery was by caesarean section, clamp the sites of bleeding along the uterine incision:
 - In case of massive bleeding, have an assistant press fingers over the aorta in the lower abdomen. This will reduce intraperitoneal bleeding
 - Extend the skin incision, if needed.

Subtotal hysterectomy

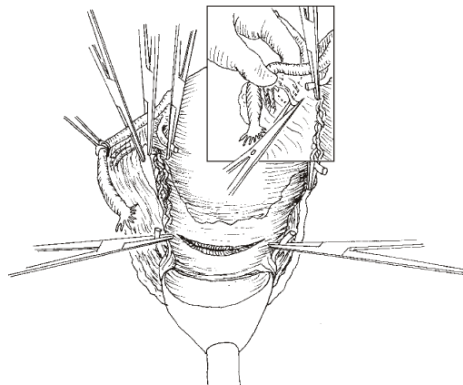
- Lift the uterus out of the abdomen and gently pull to maintain traction
- Doubly clamp and cut the round ligaments with scissors. Clamp and cut the pedicles, but ligate after the uterine arteries are secured.



Dividing the round ligaments

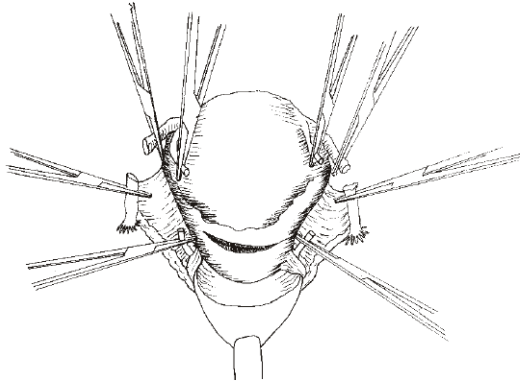
- From the edge of the cut round ligament, open the anterior leaf of the broad ligament. Incise to:
 - the point where the bladder peritoneum is reflected onto the lower uterine surface in the midline; or
 - the incised peritoneum at a caesarean section
- Use two fingers to push the posterior leaf of the broad ligament forward, just under the tube and ovary, near the uterine edge. Make a hole the size of a finger in the broad ligament, using scissors. Doubly clamp and cut the tube, the ovarian ligament and the broad ligament through the hole in the broad ligament.

The ureters are close to the uterine vessels. The ureter must be identified and exposed to avoid injuring it during surgery or including it in a stitch.



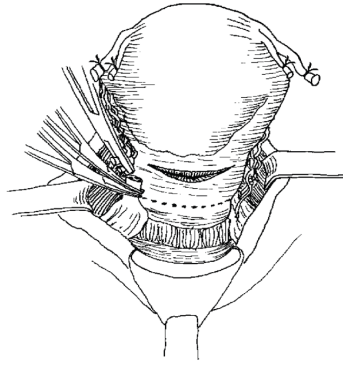
Dividing the tube and ovarian ligaments

- Divide the posterior leaf of the broad ligament downwards towards the uterosacral ligaments, using scissors
- Grasp the edge of the bladder flap with forceps or a small clamp. Using fingers or scissors, dissect the bladder downwards off of the lower uterine segment. Direct the pressure downwards but inwards toward the cervix and the lower uterine segment
- Reposition the bladder blade and retract the bladder inferiorly
- Locate the uterine artery and vein on each side of the uterus. Feel for the junction of the uterus and cervix
- Doubly clamp across the uterine vessels at a 90-degree angle on each side of the cervix. Cut and doubly ligate with 0 chromic catgut.



Dividing the uterine vessels

- Observe carefully for any further bleeding. If the uterine arteries are ligated correctly, bleeding should stop and the uterus should look pale
- Return to the clamped pedicles of the round ligaments and tubo-ovarian ligaments and ligate them with 0 chromic catgut suture
- Amputate the uterus above the level where the uterine arteries are ligated, using scissors.



Line of amputation

- Close the cervical stump with interrupted 2-0 or 3-0 chromic catgut sutures
- Carefully inspect the cervical stump, leaves of the broad ligament and other pelvic floor structures for any bleeding
- If slight bleeding persists or a clotting disorder is suspected, place a drain through the abdominal wall. Do not place a drain through the cervical stump, as this can cause postoperative infection
- Close the abdomen:
 - Ensure that there is no bleeding. Remove clots using a sponge
 - In all cases, check for injury to the bladder. If a bladder injury is identified, repair the injury
 - Close the fascia with continuous 0 chromic catgut (or polyglycolic) suture

- Note:** There is no need to close the bladder peritoneum or the abdominal peritoneum.
- If there are signs of infection, pack the subcutaneous tissue with gauze and place loose 0 catgut sutures
 - Close the skin with a delayed closure after the infection has cleared
 - If there are no signs of infection, close the skin with vertical mattress sutures of 3-0 nylon or silk and apply a sterile dressing.

Total hysterectomy

The following additional steps are required for total hysterectomy:

- Push the bladder down to free the top 2 cm of the vagina
- Open the posterior leaf of the broad ligament
- Clamp, ligate and cut the uterosacral ligaments
- Clamp, ligate and cut the cardinal ligaments, which contain the descending branches of the uterine vessels. This is the critical step in the operation:
 - Grasp the ligament vertically with a large-toothed clamp (i.e., Kocher)
 - Place the clamp 5 mm lateral to the cervix and cut the ligament close to the cervix, leaving a stump medial to the clamp for safety
 - If the cervix is long, repeat the step two or three times as needed. The upper 2 cm of the vagina should now be free of attachments

- Circumcise the vagina as near to the cervix as possible, clamping bleeding points as they appear
- Place hemostatic angle sutures, which include round, cardinal and uterosacral ligaments
- Place continuous sutures on the vaginal cuff to stop hemorrhage
- Close the abdomen (as above) after placing a drain in the extraperitoneal space near the stump of the cervix.

Post-procedure care

- Review postoperative care principles
- Monitor urine output. If there is blood in the urine or the woman has loin pain, refer the woman to a tertiary center, if possible, for treatment of an obstructed ureter
- If there are signs of infection or the woman currently has a fever, give a combination of antibiotics until she is fever-free for 48 hours
- Give appropriate analgesic drugs
- If there are no signs of infection, remove the abdominal drain after 48 hours
- Offer other health services, if possible.

Section 8: Practical Procedures for the Newborn

8-1 Expressing Breast Milk

Teach the mother how to express breast milk herself.

How to manually express breast milk:

- Mother should wash hands with water and soap first.
- Wash the cup with water and soap then boil or pour the boiled water in it and keep it for 2 to 3 minutes before pour it out.
- Sit at the position that the mother feels comfortable for her to simulate the breast milk outflow hold the cleaned cup and place it underneath her breast
- Gently massage the breast
- Squeeze the areola between the thumb and fingers while pressing backwards against the chest
- Press the breast, underneath the nipple and areola in between fingers and thumb
- Press the breast from all angles and move the fingers to the nipple
- When the milk is expressed from the breast, collect with the cup
- Express breast for at least four 3 to 5 until the milk is slowly expressing, almost runoff and then express the other breast and repeat the above procedures for the breasts
- To be able to express enough breastmilk, it takes up to 20 to 30 minutes to express the breast adequately particularly within the first 2 to 3 days when the milk is just produced less
- When expressing the breast, if someone messages the mother's back (massage her back and nape of the neck), it will make her feels good and simulate the milk outflow. Message the mother's back is helpful particularly for simulating the milk outflow
- Provide the family members with the massage technique which may be used to massage the mother. The message should be performed for 15 to 20 minutes and 3 to 4 times per day.



Expressing breast milk



If the milk does not flow well:

Ensure that the mother is using correct technique

- Have the mother apply warm compresses to her breasts
- Have someone massage the mother's neck and back
- If the expressed breast milk is not going to be used immediately, label the container (mother's name, time, date of expression) and either refrigerate the milk and use it within 24 hours
- If a refrigerator or freezer is not available, keep the milk covered at room temperature for up to eight hours. Ensure that the milk is at room temperature before giving it to the baby
- Warm frozen or refrigerated milk in a warm water bath at approximately 40°C
- Use the rewarmed milk promptly

8-2 Cup or Spoon Feeding

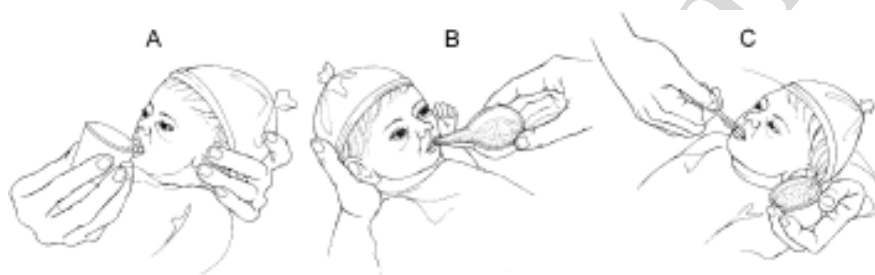
For the babies who cannot suck the mother's breast by themselves, the feeding should be given using a cup and spoon. Cup and spoon-feeding are easy to clean the supplies. Each time when feeding, clean supplies must be used.

How to perform a cup or spoon-feeding:

- Wash hand with water and soap or alcohol-based rub
- measure the volume of breast milk in the cup, ensuring that it meets the required volume according to the baby's age, weight, or in accordance with health worker's instruction if needed.
- Release or rotate the cloth bag slowly to place the baby in a semi-sitting position (if the mother is under kangaroo mother care).

- Rest the cup or spoon on the baby's lower lip and touch the outer part of the baby's upper lip with the edge of the cup
- Tip the cup or spoon so that the milk will reach the baby's lips
- Allow the baby to take the milk; do not pour the milk into the baby's mouth
- The baby starts to be active, opens her mouth and eyes and starts suckling
- The baby will suckle and swallow little by little
- The baby will start to lick the milk with tongue and swallow
- If the baby does not take the necessary volume of milk, have the mother encourage the baby to feed for a longer time or feed more often
- The baby feeds well only when she/he gains more weight
- End the feeding when the baby gets enough (it closes its mouth and is no longer interested in the feeding).

Feed the baby right the way after the milk is expressed if possible. If the baby cannot drink all of the expressed milk, the remaining shall be maintained in accordance with the expressed milk storage guideline.



Feeding by cup (A), paladai (B), or cup and spoon (C)

- If the baby is not feeding well using a feeding device or if the mother prefers not to use it, have the mother attempt to hand-express breast milk directly into the baby's mouth.

8-3 Expressing breast milk into baby's mouth

- Ensure that the mother can properly express breast milk.
- Have the mother:
 - clean her hands properly;
 - hold the baby with the baby's mouth close to her nipple;
 - express the breast until some drops of milk appear on the nipple;
 - let the baby smell the nipple and attempt to suck, and allow some breast milk to fall into the baby's mouth;
 - express more drops of breast milk after the baby swallows;
 - end the feeding when the baby closes her/his mouth and is no longer interested in feeding.

- Ask the mother to repeat this process every one to two hours if the baby weighs less than 1.5 kg or every two to three hours if the baby weighs 1.5 kg or more.

8-4 Inserting a Gastric Tube

A gastric tube may be inserted via one nostril or the mouth if the baby has breathing difficulty or does not know how to suck or swallow. Insert the tube via a nostril if the baby is breathing regularly, using the smallest (narrowest) tube, if available. If the baby has breathing difficulty of a bigger tube is needed, insert via the mouth.

Supplies

- Clean examination gloves
- Clean plastic tube or catheter appropriate for baby's weight:
 - If the baby weighs less than 2 kg, use a 5-F tube
 - If the baby weighs 2 kg or more, use an 8-F tube
- Permanent marker or flexible tape measure
- 3- to 5-ml syringe (for aspiration)
- stethoscope
- Sterile syringe for a funnel for holding breast milk (if the tube will be used for feeding)
- Cap for a gastric tube (if the tube will be used for feeding)
- Adhesive strapping
- Tincture of benzoin (if available).

Procedure:

- Prepare the necessary supplies.
- Wash hand, and put on gloves.
- Estimate the required length of tube:
 - Hold the tube from the mouth or the tip of the nostril to the lower tip of the ear lobe and then middle of the stomach, just below the rib margin, and then place a mark on the tube with a pen or a piece of strapping
 - Alternatively, can measure the distance using a tape measure, and mark the distance on the tube with a pen for a piece of strapping
- Flex the baby's head slightly and gently pass the tube through the mouth or through one nostril to the required distance. If using the nasal route
 - If a nasal catheter is in place for the administration of oxygen, insert the gastric tube through the same nostril, if possible
 - If the tube does not slide easily into the nostril, try the other nostril
 - If the tube still does not slide easily into the nostril, use the oral route.

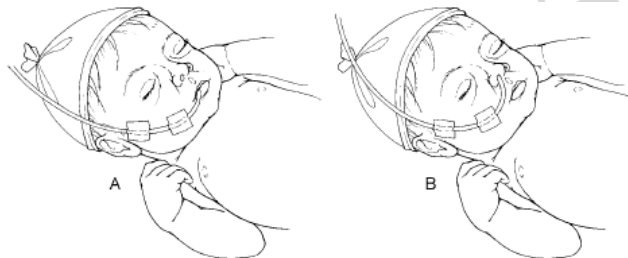
Never force the gastric tube into the nostril if resistance is encountered.



Inserting the oral gastric tube

Secure the tube in position with adhesive strapping:

- If tincture of benzoin is available, apply this to the skin first before applying the adhesive strapping
- If a nasogastric tube is used, avoid pulling the tube taut against the nostril, as this may injure the skin.



Inserting the tube via mouth (A) Inserting the tube via a nostril (B)

Proper placement of the gastric tube

- Confirm proper placement of the tube: Fill a syringe with 1 to 2 ml of air and connect it to the end of the tube. Use a stethoscope to listen over the stomach as air is quickly injected into the tube:
 - If a sound (like whistling) is heard through the stethoscope as the air is injected, the end of the tube is correctly positioned in the stomach
 - If a whistling sound is not heard, the tube is not properly positioned. Remove the tube and repeat the procedure
- Replace the tube with another clean gastric tube after three days, or earlier if it is pulled out or becomes blocked, and clean and high-level disinfect or sterilize.

Using a gastric tube for feeding or drainage

- If the gastric tube is inserted to give expressed breast milk, see instructions on feeding
- If the gastric tube is inserted for drainage, leave the tube uncapped and wrap clean gauze the end, fastened with tape, to keep the tube clean and to absorb the drainage from the stomach.

8-5 Measuring body temperature

Supplies

- A thermometer that measures temperatures as low as 35°C (axillary temperature)
- A thermometer that measures temperatures as low as 25°C (rectal temperature)
- Antiseptic solution
- Water-based lubricant.

8-5-1 Measuring Axillary Temperature

- Prepare the necessary supplies.
- Wash hands with soap and water or alcohol-based hand rub
- Use a regular thermometer that measures temperature as low as 35°C
- Ensure that the thermometer is clean by cleaning with an antiseptic solution
- Keep the baby as warm as possible during the procedure (preferably in direct skin-to-skin contact with the mother). If not possible, then warmly wrap on a warm surface
- Place the baby on her/his back
- Shake the thermometer until it is below 35°C
- Place the tip of the thermometer high in the apex of the baby's axilla and hold the arm continuously against the body for at least three minutes
- Remove the thermometer and read the temperature. If the temperature is too low to be recorded by this thermometer (less than 35°C), measure rectal temperature
- Wipe the thermometer with an antiseptic solution after use.



Measuring axillary temperature

8-5-2 Measuring rectal temperature

Only measure rectal temperature if the temperature is too low to be recorded with a regular thermometer in the axilla.

- Prepare the necessary supplies
- Wash hands with soap and water or alcohol-based hand rub
- Use a thermometer that measures temperature as below 25°C
- Ensure that the thermometer is clean by cleaning with an antiseptic solution
- Keep the baby as warm as possible during the procedure (i.e., warmly wrapped or on a warm surface)

- Place the baby on her/his back or side
- Shake the thermometer until it is below 25°C
- Lubricate the thermometer using a water-based lubricant
- Gently grasp the baby's ankle and hold the legs in the knee-chest position
- Place the thermometer in the rectum to a maximum depth of 2 cm and hold it in place for at least three minutes.



Measuring rectal temperature.

Do not leave the baby alone with the thermometer in the rectum; any movement of the baby may result in the thermometer perforating the rectum.

- Remove the thermometer and read the temperature
- Wipe the thermometer with a disinfectant solution after use. Thoroughly wash your hands.

8-6 Taking Blood Samples

Determine how much blood will be needed to perform all necessary laboratory investigations (i.e., hemoglobin, blood glucose, serum bilirubin, and blood type and cross-match) and take enough blood at one time for all the tests, if possible. If only a small volume of blood is needed (i.e., for measurement of blood glucose, serum bilirubin, or hemoglobin), use a capillary blood sample (heel prick) if possible. If a larger volume of blood is needed than can be obtained from a heel prick (i.e., when more than 1 ml of blood is needed for several laboratory investigations or blood culture and sensitivity), use venipuncture.

8-6-1 Venipuncture

- Use veins in the hands and feet first. Do not use jugular or femoral veins for routine sampling
- A closed system using a butterfly set and syringe ensures a sterile blood sample to use for bacterial culture.

Supplies

- Clean examination gloves
- Swab or cotton-wool ball soaked in antiseptic solution
- Dry cotton-wool ball
- Sterile needle (21- to 23-gauge) or butterfly set (Scalp vein 23 to 25-gauge)
- Sterile syringe (of appropriate size for the amount of blood needed; a syringe is not required if only a needle is used)
- Appropriate blood collection tubes.

Procedure

- Gather necessary supplies
- Follow principles of infection prevention
- Identify the vein to be used
- Wash hands, and put on clean examination gloves
- Prepare the skin over the vein using a swab or cotton-wool ball soaked in antiseptic solution, and allow to dry
- Ensure that the blood collection tubes are within easy reach
- Have an assistant use her/his forefinger to gently encircle the limb above the site selected for puncture or use a rubber band
- Needle with a syringe or butterfly set, attach the syringe to the needle or butterfly set (scalp vein):
 - Insert the needle through the skin at an angle of about 15 degrees, with the bevel of the needle facing upward
 - Pull gently on the syringe plunger as the needle is advanced. Once blood flows easily into the syringe or the tubing of the butterfly set, do not advance the needle any further
- Take enough blood to perform all necessary laboratory investigations
- After blood is collected:
 - Have the assistant remove her/his finger from around the baby's limb or remove the rubber band
 - Withdrawal the needle from the vein, and have the assistant apply gentle pressure to the puncture site with a dry cotton wool ball for several minutes to prevent bruising

- Carefully recap the needle and remove it from the syringe before transferring the blood into the tube
- Place the used syringe, needle and butterfly set back to the safety box
- Record the volume of blood taken in the baby file
- Fill out the necessary information in the laboratory form and write down the baby's birth date (his/her mother's name) and the date on which the blood took on the blood sample tube
- Refer the blood sample to the laboratory within not later than a half-hour after collecting.

Needle without syringe

A needle can be used without a syringe; however, this can be messy and is unsterile, making this method unsuitable for culture and sensitivity. Ensure that the needle is disposed into the safety box.

- Insert through the skin at an angle of about 15 degrees, with the bevel of the needle facing upward, until blood flows out quickly:
 - If the blood comes out very slowly, gently adjust the needle slightly by putting it back or pushing it in
 - Hold the collection tubes under the needle to collect the blood, being careful not to touch the tubes or the end of the needle
- Take enough blood to perform all necessary laboratory investigations
- After blood is collected, withdraw the needle from the vein, and have the assistant apply gentle pressure to the puncture site with a dry cotton wool ball for two to three minutes to prevent bruising and put the used needle into the safety box
- Record the volume of blood taken in the baby's file
- Fill out the necessary information in the laboratory form and write down the baby's birth date (his/her mother's name) and the date on which the blood was taken on the blood sample tube
- Refer the blood sample to the laboratory within not later than a half-hour after collecting.

8-6-2 Capillary Blood Sample (Heel Prick)

Supplies

- Clean examination gloves
- Swab or cotton-wool ball soaked in an antiseptic solution
- Dry cotton-wool ball
- Sterile lancet (if a lancet is not available, use a 24-gauge needle)
- Capillary tubes or other appropriate glass collection tubes.

Procedure

- Gather the necessary supplies
- Follow principles of infection prevention
- Wash hands, and put on clean gloves
- Clean the skin of the heel using a swab or cotton-wool ball soaked in antiseptic solution, and allow to dry
- Flex the foot up towards the leg and hold it in this position with one hand
- Squeeze the heel firmly enough to make it flush red (but not so much that it turns white)
- Puncture the skin (about 1 to 2 mm deep) firmly with a lancet:
 - Aim towards the lancet or medial side of the heel
 - Avoid the heel pad because of the risk of infection
 - Avoid using previously used sites, if possible



Site for heel prick.

- Squeeze the heel gently and intermittently to enhance blood flow. Avoid excessive squeezing and rubbing of the heel, as this will cause bruising and dilution of blood with tissue fluid, giving an inaccurate result.

A too shallow jab will take longer to collect the blood and requires prolonged squeezing of the heel; in some cases, a second heel stick may be required. Excessively deep heel sticks, however, can cause cuts, infection, and scarring.

- Collect blood into the tube, taking enough blood to perform all necessary laboratory investigations
- After blood is collected, have an assistant apply gentle pressure to the puncture site with a dry cotton wool ball for two to three minutes to prevent bruising
- Record the volume of blood taken in the baby's file
- Fill out the necessary information in the laboratory form and write down the baby's birth date (his/her mother's name) and the date on which the blood was taken on the blood sample tube
- Refer the blood sample to the laboratory within not later than a half-hour after collecting.

8-7 Measuring Blood Glucose

Measure blood glucose using laboratory methods. If laboratory methods are not available, use glucose check or paper reagent strips that are made for newborn babies. Note that paper reagent strips may underestimate blood glucose by as much as 0.5 to 1.0 mmol/l.

- Gather the necessary equipment and supplies
- Read the instructions for the reagent strips
- Take the blood sample
- Transfer the required volume of blood onto the reagent strip, usually in an area at the tip of the strip
taking care to cover all the required areas with one or two drops of blood at the same time
- Leave the blood on the strip for the required length of time-usually 60 seconds
- Wipe or wash off the blood, using running water, according to the manufacturer's instructions
- Estimate the blood glucose:
 - Immediately compare the color on the strip to a color chart (usually on the container of reagent strips) to estimate blood glucose
 - Improve the accuracy of this method by using a reflectance meter (supplied by the manufacturer of the reagent strips), if available, to read the color change on the reagent strip
- If the blood glucose is less than 25 mg/dl (1.1 mmol/l), confirm by laboratory measurement, if possible.

8-8 Giving Appropriate Antibiotics for Newborn

Route of administration

- For sepsis, meningitis, tetanus, and congenital syphilis give antibiotics intravenously (IV):
 - Give the antibiotics, especially gentamicin and cefotaxime, slowly over at least three minutes
 - Monitor the baby while giving IV fluids to ensure that fluid overload does not occur (page 321)
 - If an IV line cannot be established immediately, give antibiotics intramuscularly (IM) (page 320) until an IV line is in place
 - When the baby is recovering and an IV line is no longer needed for another purpose, give the antibiotics IM to complete the course of treatment

- For most other infections, give the antibiotics (page 320). If an IV line is needed for another purpose, however, give the antibiotics IV.

Note: Giving Gentamicin, while lifesaving when used appropriately, can cause deafness and kidney damage. Health facilities without the ability to determine gentamicin blood levels should administer gentamicin.

Antibiotic	Dose in mg	
	Day 1 to 7	Day 8+
Ampicillin and Gentamicin for the first choice of treatment for infectious baby (first line AB) (For option of the detailed treatment, see the Chapter 3-5-5)	Ampicillin VI 50 mg/kg every 12 hours Gentamicin slow IV or IM Baby weights <2.500kg: 3mg/kg only one time per day. Baby weight ≥2.500kg: 5mg/kg only one time per day.	Ampicillin VI 50 mg/kg every 8 hours Gentamicin slow VI or for injecting muscle 7.5 mg/kg, only one time per day (for the baby of all weights)
Switch to the second option, if the baby's symptoms remain within 48 hours of the treatment with the first option, or the result of the sepsis culture confirms the resistance with Ampicillin or Gentamicin. The treatment with the second option (2 nd line AB) is added: Ceftriaxone IV 50 mg/kg every 12 hours		
Ampicillin for only meningitis	100 mg/kg every 12 hours	100 mg/kg every 8 hours
Benzathine penicillin G for asymptomatic baby of mother not treated for syphilis	50 000 units/kg) in a single dose for muscle injecting	50 000 units/kg) in a single dose for muscle injecting
Benzylpenicillin for tetanus	60 mg/kg (100 000 units/kg) every 12 hours	60 mg/kg (100 000 units/kg) every 12 hours
Cefotaxime for meningitis ONLY	50 mg/kg every 8 hours	50 mg/kg every 6 hours
Cefotaxime for only meningitis	50 mg/kg every 12 hours	50 mg/kg every 8 hours
Ceftriaxone	100 mg/kg in a single dose	100 mg/kg in a single dose

Antibiotic	Dose in mg	
	Day 1 to 7	Day 8+
Cloxacillin (oral administration)	Less than 2 kg:	
	50 mg/kg every 8 hours	50 mg/kg every 8 hours
	2 kg or more:	
	50 mg/kg every 8 hours	50 mg/kg every 8 hours
Cloxacillin (injection)	Less than 2 kg:	
	50 mg/kg every 8 hours	50 mg/kg every 8 hours
	2 kg or more:	
	50 mg/kg every 8 hours	50 mg/kg every 8 hours
Erythromycin	12.5 mg/kg every 6 hours	12.5 mg/kg every 6 hours
Gentamicin	Less than 2500 g:	
	3 mg/kg once daily	7.5 mg/kg once daily OR 3.5 mg/kg every 12 hours
	2 kg or more:	
	5 mg/kg once daily	7.5 mg/kg once daily OR 3.5 mg/kg every 12 hours

Weight	Ampicillin IM Dose: 50 mg per kg every 12 hours Add 2.5 ml sterile water to 500 mg vial = 200 mg/ml		Gentamicin IM Dose: 5 mg per kg every 24 hours if term; 4 mg per kg every 24 hours if preterm If using 20 mg per 2 ml vial = 10 mg/ml, draw	
800g	40mg	0.20ml	2.4mg	0.24ml
1000g	50mg	0.25ml	3.0mg	0.30ml
1200g	60mg	0.30ml	3.6mg	0.36ml
1400g	70mg	0.35ml	4.0mg	0.40ml

1600g	80mg	0.40ml	4.8mg	0.48ml
1800g	90mg	0.45ml	5.4mg	0.54ml
2000g	100mg	0.50ml	6.0mg	0.60ml
2200g	110mg	0.55ml	6.6mg	0.66ml
2400g	120mg	0.60ml	7.2mg	0.72ml
2600g	130mg	0.65ml	13.0mg	1.30ml
2800g	140mg	0.70ml	14.0mg	1.40ml
3000g	150mg	0.75ml	15.0mg	1.50ml
3200g	160mg	0.80ml	16.5mg	1.60ml
3400g	170mg	0.85ml	17.0mg	1.70ml
3600g	180mg	0.90ml	18.0mg	1.80ml
3800g	190mg	0.95ml	19.0mg	1.90ml

(From neonatal sepsis guideline of MoH 2013)

8-9 Giving injections

8-9-1 Intramuscular (IM) injections

General principles

- This site for IM injection includes the following:
 - Quadriceps muscle group of the upper, outer thigh. This site is preferred because of the small risk of giving the injection intravenously, hitting the femur with the needle, or injuring the sciatic nerve
- The following sites should be avoided:
 - Gluteus muscle group in the buttock. This muscle group is difficult to use for IM injection because of variable amounts of fat and subcutaneous tissue and the danger of injury to the sciatic nerve and major blood vessels in the region
 - Deltoid muscle group. This site can be used for giving immunization but should not be used for other injections
- Minimize pain with injection by:
 - Using a sharp needle of the smallest diameter that will allow fluid to flow freely (i.e., 22- to 24-gauge)
 - Ensure that no material for injection is in the needle at the time of insertion into the skin
 - Using minimal volume for injection (i.e., 2 ml or less at any single injection site)
 - Avoiding rapid injection of material
 - Using an alternative injection site for subsequent injections
- Potential complications of IM injection include:
 - Inadvertent intra-arterial or intravenous injection
 - Infection from contaminated injection material
 - Neural injury (typically the sciatic nerve after injections in the buttock)
 - Local tissue damage due to injection of irritants
- Avoid these complications by:
 - Selecting the safest agents for injection
 - Choosing the proper injection site
 - Establishing anatomic landmarks
 - Cleansing the skin thoroughly
 - Alternating sites for subsequent injections
 - Aspirating before injection
 - Avoiding tracking the drug into superficial tissues
 - Using a needle of adequate length to reach the intended injection site.

Supplies

- The sterile 1-inch needle of the smallest size will allow fluid to flow freely (i.e., 22- to 24-gauge)
- The sterile syringe of the smallest size available that has adequate markings for proper dose (i.e., 1- to 3-ml)
- Dry cotton-wool ball

Procedure

- Gather the necessary supplies
- Wash hands
- Select the site for injection
- Draw the material for injection into the syringe
- Ensure that the drug and dose are correct
- Grasp the center of the target muscle between the thumb and forefinger, if possible
- Insert the needle at a 90-degree angle through the skin with a single quick motion
- Withdraw the plunger of the syringe slightly to ensure that the tip of the needle is not in a vein (i.e. no blood should enter the needle):
 - If the needle is in a vein:
 - Withdraw the needle without injecting the material
 - Apply gentle pressure to the site with a dry cotton wool ball to prevent bruising
 - Place a new, sterile needle on the syringe
 - Choose a new site for injection
 - Repeat the procedure described above
 - If the needle is in the muscle, inject the material with safety pressure for three to five seconds.



Intramuscular injection into the quadriceps muscle group

- Upon completion of the injection, withdraw the needle and apply gentle pressure with a dry cotton-wool ball
- Wash hands
- Record the site of the injection, and rotate the site of subsequent injections.

8-9-2 Intravenous (IV) Injections

This section is about giving an IV push injection to a baby with an IV line in place; these directions do not apply if the drug is mixed with IV fluid in a bag and then infused.

Supplies

- Swab or cotton-wool ball soaked in antiseptic solution
- Two sterile 1-inch needles of the smallest size that will allow fluid to flow freely (i.e., 22- to 24-gauge)
- Two sterile syringes of the smallest size available that have adequate marking for proper dose (i.e., 1- to 3-ml)
- 2 ml IV fluid.

Procedures

- Gather the necessary supplies
- Wash hands with alcohol-based rub and water and soap
- Choose the place in the IV line where an IV injection can be given closest to the insertion site of the cannula (i.e., a valve or a soft rubber connector)
- Clean the port with the swab or cotton-wool ball soaked in antiseptic solution, and allow to dry
- Draw the material for injection into the syringe
- Ensure that drug and dose are correct
- If the IV fluid was infusing without problem:
 - Stop the IV infusion
 - Insert the needle into the IV line, and inject the material slowly over two minutes, carefully observing the area around the cannula for swelling
- If there is any question as to whether the cannula is properly positioned in the vein:
 - Stop the IV infusion
 - Flush the IV line first with 2 ml of IV fluid, observing the area around the cannula for swelling that indicates that the cannula has come out of the vein
 - If the cannula is still in the vein, inject the material slowly over two minutes, carefully observing the area around the cannula for swelling
- Upon completion of the injection, withdraw the needle and restart the IV infusion
- Wash hands with alcohol-based rub and water and soap.

8-9-3 Intradermal Injections

Only use intradermal injection for the Bacillus Calmette–Guérin (BCG) and when first administering local anesthetic for draining an abscess.

Supplies

- Sterile 25- or 27-gauge, 5/8-inch needle
- Sterile 21-gauge, 1-inch needle
- Syringe for BCG injection
- Dry cotton-wool ball.

Procedure

- Gather the necessary supplies
- Select the site for injection
- Wash hands with alcohol-based rub and water and soap
- Draw the material for injection into the syringe using the 21-gauge needle
- Ensure that the correct drug and dose are given
- Replace the 21-gauge needle with a 25- or 27-gauge needle
- Hold the syringe and needle almost parallel with the skin, with the bevel of the needle facing up
- Pull the skin taut with one hand, and insert the tip of the needle barely under the skin. Advance the needle slowly until the level of the needle has fully entered the skin
- Gently point the needle upward, without repiercing the skin
- Inject the material with steady pressure for three to five seconds (there will be significant resistance) and look for a balancing of the skin. The baby will probably cry during the injection; a true intradermal injection often burns slightly and should raise a small "bleb" under the skin to pucker similar to the skin of an orange
- Upon completion of the injection, withdraw the needle and apply gentle pressure with a dry cotton-wool ball
- Wash hands with alcohol-based rub and water and soap.

8-10 Establishing an Intravenous Line

- Various sites can be used to establish an intravenous (IV) line. Common sites are:
 - Peripheral veins on the back of the hand or top of the foot (the most common and preferred sites)
 - Veins on the forearm, the front of the elbow, or around the ankle or knee (minimize the use of the veins around the knee because there is a greater risk of the needle coming in contact with the bone)
 - Scalp veins
- If a peripheral IV line cannot be established quickly in an emergency, use an umbilical vein catheter or intraosseous line.

Peripheral IV Line

Supplies

- Clean gloves
- Swab or cotton-wool ball soaked in antiseptic solution
- The sterile infusion set with IV fluid (use a microdropper if one is available)
- Sterile butterfly set or cannula (23G- to 25G-gauge; if the IV line is required for a blood transfusion, ensure that the needle is large enough [i.e., 22-gauge] so that the blood not clot in the needle during the transfusion)
- Adhesive strapping or thin paper tape
- Tincture of benzoin/alcohol
- Rubber band
- Arm board.

Procedures

- Gather the necessary supplies.
- Follow principles of infection prevention.

Prepare the solution to be infused, ensuring that the entire infusion set is filled with fluid and that there is no air in the infusion set. If a butterfly set is used, ensure that the set is filled with IV fluid.

Air embolism can occur easily in babies. It is essential to ensure that all components of the IV infusion set are filled with fluid that there are no air bubbles in the set before beginning the infusion.

- Wash hands, and put on clean examination gloves.
- Clean the skin over the vein using a swab or cotton-wool ball soaked in antiseptic solution, and allow to dry.
- Have an assistant press on the skin near the vein to act as a tourniquet:
 - If using a vein on the hand, foot, arm, or leg, have the assistant use her/his forefinger and thumb to gently encircle the limb above the chosen site of insertion
 - If using a scalp vein, have an assistant press over the vein below the chosen site of insertion, or place a rubber band (as a tourniquet) around the baby's head
- Insert the needle at a 15-degree angle through the skin, with the bevel of the needle facing upward:
 - If using a butterfly set, a small amount of blood with a flush back into the tubing when the vein is punctured. Do not push the needle in any further
 - If using a cannula:

- Once the blood fills the hub of the cannula, withdraw the needle partially while continuing to push the cannula in
 - When the hub of the cannula reaches the skin at the puncture site, withdraw the needle completely
 - Dispose of the needle according to recommended infection prevention procedure
- Have the assistant remove her/his finger or the rubber band
- Connect the infusion set to the cannula or butterfly set:
 - Ensure that there are no air bubbles in the infusion set
 - Infuse fluid into the vein for a few seconds to make sure that the vein has been successfully cannulated. The fluid should run freely, and there should be no swelling around the site of the cannula
 - If swelling develops around the site of infusion, withdraw the needle from the vein and repeat the procedure using a different vein
- If using a vein in the hand, arm, foot, or leg, immobilize the limb (i.e., using an arm board [or splint] and adhesive or thin paper tape) to minimize movement
- Secure the cannula or butterfly set in position using strips of adhesive strapping. If tincture of benzoin is available, apply this to the skin before applying the adhesive strapping
- Inspect the infusion site every hour:
 - Look for redness and swelling around the insertion site of the cannula, which indicates that the cannula is not in the vein and fluid is leaking into the subcutaneous tissue. If redness or swelling is seen at any time, stop the infusion, remove the needle, and establish a new IV line in a different vein
 - Check the volume of fluid infused and compare it to the prescribed volume
 - Record the findings.

A solution containing glucose can cause the tissue to die and should not be allowed to leak into subcutaneous tissue.

- Change the IV infusion set and fluid bag every 24 hours, even if the bag still contains IV fluid (this can be a major source of infection).

8-11 Administration of Intravenous Fluid

- Use an infusion set with a microdropper (where 1ml=60 microdrops). Microdroppers allow slow administration of fluid and ensure that babies receive the volume of fluid they need. Using a standard infusion set (where 1ml=20 drops) can cause dangerous fluid overload.

- Before infusing IV fluid, check:
 - The expiry date of the fluid
 - That the seal of the infusion bottle or bag is not broken
 - That the fluid is clear and free from visible particles
- Calculate the rate of administration, and ensure that the microdropper delivers the fluid at the required rate
- Change the IV infusion set and fluid bag every 24 hours, even if the bag still contains IV fluid (they can be a major source of infection).

Volumes of fluid and feeds during the first days of life: Determine the required volume of fluid according to the baby's age (table below).

- Subtract the volume of feeds the baby is receiving from the total daily volume required to determine the necessary volume of IV fluid
- Adjust the volume of feeds and/or fluid if for other interventions being done (i.e., if the baby is placed under a radiant warmer or is receiving phototherapy, increase the volume of feeds and/or fluid by 10% of the total daily volume per day because of increased loss of water from the skin)
- Convert the total volume into ml per hour or drops per minute.

Total daily feed and fluid volumes for babies from birth

Day of life	1	2	3	4	5	6	7+
ml/kg body weight of feeds and/or fluid	60	80	100	120	140	150	160+

Feed and Fluids Volumes for Small Babies

Small babies (low weight) require different feed and fluid volumes based on their condition and weight. Review the categories below to determine the appropriate total daily fluid and feed volumes for the baby.

Babies without major illness

- Weighing from 1750g to 2500 g, allow the baby to begin breastfeeding. If the baby cannot be breastfed, give expressed breast milk using an alternative feeding method. Use the table above to determine the required volume of milk for the feed based on the baby's age.
- Weighing from 1500g to 1749g, give expressed breast milk using an alternative feeding method every three hours according to the table below until the baby can breastfeed.

Volumes of breast milk for a baby weighing 1500g to 1749g without major illness

	Day of Life						
	1	2	3	4	5	6	7
Feed volume every three hours (ml/feed)	12	18	22	26	30	33	35

Weighing from 1250g to 1499 g

- Give expressed breast milk by gastric tube every three hours according to the table below.
- Progress to feeding by cup/spoon as soon as the baby can swallow without coughing or spitting.

Volumes of breast milk for a baby weighing 1250g to 1499g without major illness

	Day of life						
	1	2	3	4	5	6	7
Feed volume every three hours (ml/feed)	10	15	18	22	26	28	30

Babies weighing less than 1250g

- Establish an IV line, and give only IV fluid for the first 48 hours.
- Give expressed breast milk by gastric tube every two hours starting on day 3, or later.

If the baby's condition is not yet stable, and slowly decrease the volume of IV fluid while increasing the volume of oral feeds according to the table below.

Volumes of IV fluid and breast milk for all babies weighing less than 1250 kg

	Day of life						
	1	2	3	4	5	6	7
IV fluid rate (ml/hour or micro drops/minute)	4	4	3	3	2	2	0
Feed volume every three hours (ml/feed)	0	0	3	5	8	11	15

Sick babies

Weighing from 1750g to 2500g

- If the baby does not initially require IV fluid, allow the baby to begin breastfeeding. If the baby cannot be breastfed, give expressed breast milk using an alternative feeding method. Determine the required volume of milk for the feed based on the baby's age.

- If the baby requires IV fluid:
 - Establish an IV line (page 319), and give only IV fluid for the first 24 hours (see table below)
 - Give expressed breast milk using an alternative feeding method every three hours starting on day 2, or later if the baby's condition is not yet stable, and slowly decrease the volume of IV fluid while increasing the volume of oral feeds according to table xx below.

Table: Volumes of IV fluid and breast milk for a sick baby weighing 1750g to 2500 kg

	Day of life						
	1	2	3	4	5	6	7
IV fluid rate (ml/hour or micro drops/minute)	5	4	3	2	0	0	0
Feed volume every three hours (ml/feed)	0	6	14	22	30	35	38

Weighing 1500 to 1749 kg

- Establish an IV line (page 319), and give only IV fluid for the first 24 hours (see table below)
- Give expressed breast milk by gastric tube (page 305) every three hours starting on day 2, or later if the baby's condition is not yet stable, and slowly decrease the volume of IV fluid while increasing the volume of oral feeds according to table xx below
- Progress to feeding by cup/spoon as soon as the baby can swallow without coughing or spitting.

Table: Volumes of IV fluid and breast milk for a sick baby weighing 1500 kg to 1749 g.

	Day of life						
	1	2	3	4	5	6	7
IV fluid rate (ml/hour or micro drops/minute)	4	4	3	2	2	0	0
Feed volume every three hours (ml/feed)	0	6	13	20	24	33	35

Weighing 1250g to 1499 g

- Establish an IV line (page 319), and give only IV fluid for the first 24 hours (see table below)
- Give expressed breast milk by gastric tube (page 305) every three hours starting on day 2, or later if the baby's condition is not yet stable, and slowly decrease the volume of IV fluid while increasing the volume of oral feeds according to table below
- Progress to feeding by cup/spoon as soon as the baby can swallow without coughing or spitting.

Volumes of IV fluid and breast milk for a sick baby weighing 1250g to 1499g.

	Day of life						
	1	2	3	4	5	6	7
IV fluid rate (ml/hour or micro drops/minute)	3	3	3	2	2	0	0
Feed volume every three hours (ml/feed)	0	6	9	16	20	28	30

➤ **Weighing Less than 1250g**

Give feed and fluid as described for a well-baby less than 1250g.

8-12 Transfusing Blood

Monitoring the transfused baby

- For each transfusion, monitor the baby at the following stages:
 - Before starting the transfusion
 - At the onset of the transfusion
 - Every five minutes for the first 15 minutes after starting the transfusion
 - At least every hour during the transfusion
 - Every four hours for 24 hours after completing the transfusion.

Closely monitor the baby during the first 15 minutes of the transfusion and regularly thereafter to detect early signs of a transfusion reaction.

- At each of these stages, record the following information on the baby's chat:
 - General appearance
 - Temperature
 - Heart rate
 - Respiratory rate
 - Fluid balance (i.e. oral and IV fluid intake and urine output)
- In addition, record:

- The time the transfusion is started and completed
- The volume and type of all blood transfused
- The unique donation numbers of all blood transfused
- Any adverse effects.

Transfusing blood

- Review the general principles of the clinical use of blood
- If an IV line is not yet in place, establish an IV
- Before beginning the transfusion, check (there should be a second staff member, if possible) to ensure that the:
 - Blood is the correct type for the baby, the baby's information is clearly marked, and the blood has matched against the blood of the mother and the baby. In an emergency situation, use type O, Rh-negative blood
 - Blood transfusion bag has not been opened and does not leak
 - Blood pack has not been out of the refrigerator for more than two hours, the plasma is not pink, the red cells do not look purple or black, and the blood is not clotted
 - IV line is patent and the needle used is large enough (i.e., 22-gauge) so that the blood does not clot in the needle during the transfusion
- Record the baby's temperature and heart and respiratory rates
- Remove the protective cover from the blood bag or bottle without touching the opening, and attach a blood infusion set
- Detach the tubing at the infusion site and immediately attach the tubing from the blood transfusion set
- Transfuse whole blood at the rate of 20 ml/kg weight
- Monitor the baby's temperature and heart and respiratory rates, and slow the infusion to half the rate when the baby's signs begin to improve.

Do not leave a unit of blood hanging for more than four hours.
Number of blood drop per 1 minute = total blood volume 4 x T
(T in an hour)

- Use an infusion device to control the rate of transfusion, if available
- Ensure that the blood is flowing at the correct rate
- Upon completion of the transfusion, reassess the baby. If another transfusion is required, transfuse blood at the same rate and volume.

8-13 Performing a Lumbar Puncture

Lumbar puncture is used to confirm the diagnosis when the baby has signs suggestive of meningitis. Do not perform a lumbar puncture if the baby has spina bifida/meningomyelocele.

Supplies:

- Clean examination gloves
- Sterile gloves
- Sterile drapes
- Swabs or cotton-wool ball soaked in antiseptic solution
- Spinal needle or intravenous needle (22-to 24- gauge)
- Appropriate collection of tubes
- Dry cotton-wool ball
- Adhesive bandage.

Procedure:

- Be prepared to resuscitate the baby using a bag and mask, if necessary (see page 99)
- Place necessary supplies next to the body
- Place the baby under a radiant warmer, if possible, and undress the baby only when ready to perform the procedure
- Follow principles of infection prevention and aseptic technique
- Position the baby:
 - Have an assistant hold the baby in a sitting position:
 - Position the baby so that the baby's legs are straight and the back is arched
 - Ensure that the baby's neck is partially extended and not flexed towards the chest, which could obstruct the baby's airway



Sitting position for lumbar puncture

- Lying position:
 - Place the baby on her/his side facing the assistant mostly on her/his right side
 - Position the baby so that the baby's back is closest to the side of the table from which the lumbar puncture will be performed.

- Have the assistant place one hand behind the baby's head and neck, and place the other hand behind the baby's thighs to hold the spine in a flexed position
- Ensure that the baby's neck is partially extended and not flexed towards the chest, which could obstruct the baby's airway



Lying position for lumbar puncture.

- Wash hands and put on clean examination gloves.
- Prepare the skin over the area of the lumbar spine and, mark it then wash from the inside to outside with a swab or cotton-wool ball soaked in disinfection solution. Repeat this procedure, using a new swab or cotton-wool ball each time, and allow it to dry
- Identify the site of the puncture between the third and fourth lumbar processes (i.e. on a line joining the iliac crests, see figure)



Site of lumbar puncture

- Remove examination gloves and put sterile gloves
- Place sterile drapes over the baby's body so that only the puncture site is exposed
- Insert the needle in the midline of the vertebrae, angled towards the baby's umbilicus
- Slowly advance the needle to a depth of about 1 cm or less if the baby is small; less than 2500 g at birth or born before 37 weeks gestation). A slight "pop" may be felt as the needle enters the subarachnoid space
- If using a spinal needle, remove the stylet

- If the bone is encountered, the needle cannot be redirected. Pull the needle back to just beneath the skin and reinsert the needle, directing it slightly upward while aiming for the baby's umbilicus
- Collect the cerebrospinal fluid (CSF):
 - Collect about 0.5 to 1 ml (about 6 to 10 drops) of CSF in each collection tube
 - If CSF does not come out, rotate the needle slightly
 - If CSF still does not come out, remove the needle and reinsert it between the fourth and fifth lumbar processes
 - If blood is seen in the CSF, the needle probably went through the spinal canal and caused bleeding. If the CSF does not clear, collect enough CSF for culture and sensitivity only
 - After CSF is collected, remove the needle
 - Have an assistant apply gentle pressure to the puncture site with a cotton-wool ball until bleeding or leakage of fluid stops
 - Apply an adhesive bandage to the site.

Section 9: Newborn and Children Physical Screening

9.1 Newborn physical screening (0 to 28 days of age)

9.1.1 Description

Birth defects as well as any defects due to other problems are the abnormal functions that are harmful to the babies' health, so each baby screening is helpful to look for detect in a timely manner. The on-time intervention will provide the babies with better results. Physical Screening tools are helpful to determine defects/defects by checking the function of the organs of the babies from the age of 0 to 28 days. It is recommended that the babies should be checked before they are discharged from the health center. It is preferred to be conducted after the first delivery.

If you detect any babies who are over 28-day old but have not been screened, then you should screen their bodies, if possible.

9.1.2 General measure

Before getting started screening, the consent of babies' parents shall be granted and that they understand why you check their babies' bodies. They shall be provided with information that this is a part of the regular evaluation to confirm the baby health, conducting checking babies' body systematically from the top of their head to the tip of the toes (head, eyes, mouth, ears, neck, chest, abdomen, rectum, reproductive organs, hips, limbs, and spine) to check for any signs of diseases or birth defects by checking and touching.

9.1.3 Referral

The Physical Screening cannot provide diagnostics or determine any particular needs for interventions for the babies, but it indicates simple signs that the babies with problems require further checking by the specialized physicians. Babies' parents shall be provided with an explanation about the required interventions for the babies with defects. found on time. The family shall be provided with clear information such as contact details of the health facilities to which the babies will be referred, working hours, service provision and service charges, etc.

9.2 Physical screening for a baby aged from 1 month to 5 years

9.2.1 Description

Birth defects as well as any defects due to other problems are the abnormal organs or functions which are harmful to the babies' health. Each baby screening is helpful to look for defects in a timely manner. On-time intervention will provide the babies with better results.

Physical Screening tools for babies aged from 1 month to 5 years are helpful to determine defects/defects by checking the function of several organs of the babies. It is recommended that babies should be checked in a timely manner. And if you detect any babies who have not ever been checked before, then you should check their bodies, if possible.

9.2.2 Measure

9.2.2.1 Defect screening

Before getting started screening, the consent of babies' parents shall be granted and that they understand why you check their babies' bodies. They shall be provided with information that this is a part of the regular evaluation to confirm the baby health. Conducting Physical Screening systematically from the top of their head to the tip of the toes (head, eyes, mouth, ears, neck, chest, abdomen, rectum, reproductive organs, hips, limbs, and spine) to check for any signs of diseases or birth defects by checking and touching.

In the case that any defects or conditions detected by the checking, the babies should be referred to the hospital to be comprehensively checked by and diagnosed by the physician.

9.2.2.2 Referral

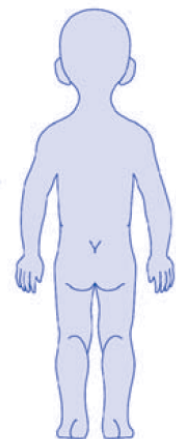
Physical Screening cannot provide diagnostics or determine any particular needs for interventions for the babies, but it indicates simple signs that the babies with problems require further checking by the specialized physicians. Babies' parents shall be provided with an explanation about the required interventions for the babies with defects found on time. The family shall be provided with clear information such as contact details of the health facilities to which the babies will be referred, working hours, service provision and service charges, etc.

Physical screening tools for babies and children

1. Physical screening tools for babies (0-28 days of age)


General information:		
Children's name:, sex:, weight:, the birth of date: / /, age:, height:		
Guardian's name:, village, commune, district, province, tel., another phone number.		
Disease history: Please check the box if the information applies to the children.		
<input type="checkbox"/> Mother's body temperature was high when giving birth	<input type="checkbox"/> Low birth weight (<2500g)	<input type="checkbox"/> Premature birth (<37 weeks)
<input type="checkbox"/> Birth giving took a long time	<input type="checkbox"/> Breech Delivery	APGAR score <3 severe breathing obstruction <7 mild breathing obstruction ≥ 7 Normal <input type="checkbox"/> APGAR (1 minute) ____ <input type="checkbox"/> APGAR (5 minute) ____ <input type="checkbox"/> APGAR (10 minutes) ____
<input type="checkbox"/> Convulsions	<input type="checkbox"/> Problem with eating or drinking	<input type="checkbox"/> No meconium within 24 hours after birth
Front side	Symptoms: Please check the box if you encounter the following points Please take off the clothes and check the front part from the top of the head to the tip of the toes.	Please mark the point at which the symptoms detect
Head	<input type="checkbox"/> Bighead, with the circumference >38 cm during birth (skip if the baby <2500g) <input type="checkbox"/> Small head, with the circumference <30 cm during birth (skip if the baby <2500g)	<input type="checkbox"/> Abnormal fontanelle, closed/bulged; indrawing/closed) <input type="checkbox"/> Swollen skull
Eyes	<input type="checkbox"/> Eyes do not blink when the light enters into them	<input type="checkbox"/> Eyes turn red with pus/
Ears	<input type="checkbox"/> Is not shocked by the loud noise (Testing with clapping)	<input type="checkbox"/> Distorted ears without/ears
Mouth	<input type="checkbox"/> Cleft Lip, <input type="checkbox"/> Cleft Palate	<input type="checkbox"/> Tongue Tie

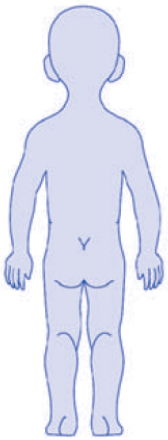


Neck and chest	<input type="checkbox"/> Neck with torticollis	<input type="checkbox"/> Deformed chest	
Hands	<input type="checkbox"/> Abnormal deformed hands/ (Specify _____)	<input type="checkbox"/> Level or unparallel movement with the other side of hand	
Abdomen	<input type="checkbox"/> Umbilical bleeding <input type="checkbox"/> Swollen umbilical or intestines extend outside of the abdomen	<input type="checkbox"/> Swollen abdomen	
Sex organ	<input type="checkbox"/> Baby boy: Without scrotum <input type="checkbox"/> Baby boy: Hydrocele <input type="checkbox"/> Baby boy: dislocation of the urethra	<input type="checkbox"/> Baby girl: Without vaginal vestibule <input type="checkbox"/> Baby girl: hernia at the groin (baby boy and girl)	
Hips and foots	<input type="checkbox"/> Deformed feet or toes. (Specify _____)	<input type="checkbox"/> Clubfoot <input type="checkbox"/> Skinfold between groin and lap cannot extend equally	
Backside	Screening from the top of the head to the tip of the toes		
Spin	<input type="checkbox"/> There are soft spinal tumors along with the spin	<input type="checkbox"/> Kyphoscoliosis or hunchback	
Anus	<input type="checkbox"/> Without anus	<input type="checkbox"/> Dislocation of the anus	
Other observation	<input type="checkbox"/> Indication of their impairments (Specify _____)		
Reflex	<input type="checkbox"/> Suckling reflex	<input type="checkbox"/> Without finger grab reflex	

Screening result	<input type="checkbox"/> Sign condition/Not detected <input type="checkbox"/> Sign condition detected <input type="checkbox"/> Emergency referral	Hospital/health center/ _____ Checking date ____/____/____ Checker _____ Checker's phone number _____ Checker's signature _____
	<input type="checkbox"/> No referral needed	<input type="checkbox"/> Number of days for return _____ (days)
	<input type="checkbox"/> Comments for referral _____	

2. Physical screening tools for children from 1 month to 5 years

General information:		
Children's name: , sex: , weight: , birth of date: / / , age: , height:		
Guardian's name: , village, commune, district, province, tel. , other phone number.		
Disease history based on the observation of the mother/father		
<input type="checkbox"/> Has your child ever had a critical health issue? Specify _____	<input type="checkbox"/> Low birth weight (<2500g)?	<input type="checkbox"/> Difficult delivery?
	<input type="checkbox"/> Have a problem with drinking and eating?	<input type="checkbox"/> Convulsions?
<input type="checkbox"/> Cannot talk like other children of the same age	<input type="checkbox"/> Cannot enjoy playing like other children of the same age	<input type="checkbox"/> Does not know how to urinate as other children of the same age
Screening	Symptoms (please check the box)	Mark the detected area
Head	Head circumference ____ / Please check against the children growth standard as follows:	
	<input type="checkbox"/> Bighead <input type="checkbox"/> Small head	
Eyes	<input type="checkbox"/> Eyes do not blink when the light enters into them <input type="checkbox"/> fallen eyelid <input type="checkbox"/> Eyes with pus/turn red <input type="checkbox"/> Strabismus/ squint (eyes turn inward or outward) <input type="checkbox"/> Eyelash growth inward <input type="checkbox"/> Abnormal glancing and staring	
	<input type="checkbox"/> Is not shocked by the loud noise (testing with clapping for <3 years old) <input type="checkbox"/> Without or distorted ears <input type="checkbox"/> Whispering test, abnormal (≥ 3 years old) <input type="checkbox"/> Eyes with pus or lymph	
Mouth	<input type="checkbox"/> Cleft Lip, <input type="checkbox"/> Tongue Tie <input type="checkbox"/> Cleft Palate	
Neck and chest	<input type="checkbox"/> Neck with torticollis <input type="checkbox"/> Tumor, flow lymph <input type="checkbox"/> Deformed chest	

Hands	<input type="checkbox"/> Abnormal deformed hands/ (Specify _____)	<input type="checkbox"/> Level or unparallel movement with the other side of hand	
Abdomen	<input type="checkbox"/> Swollen abdomen <input type="checkbox"/> There is a tumor that can tell by touching <input type="checkbox"/> Umbilical hernia of the abdomen		
Sex organ	<input type="checkbox"/> Hernia at the groin Ask parents if they have noticed any abnormality of their child's sex organ before? <input type="checkbox"/> Yes/No (If Yes/No, in the room with the presences of the parents)		
	<input type="checkbox"/> Baby boy: Without scrotum <input type="checkbox"/> Baby boy: Hydrocele	<input type="checkbox"/> Baby boy: abnormal location of the urethra <input type="checkbox"/> Baby girl: Without vaginal vestibule	
Hips and foots	<input type="checkbox"/> Clubfoot <input type="checkbox"/> Unequal lap extension	<input type="checkbox"/> Unequal standing heigh, unequal knees (<2 years old) <input type="checkbox"/> Indication of leg length discrepancy when walking (≥ 2 years old)	
	<input type="checkbox"/> Deformed foots or toes (Specify _____)		
Spin	<input type="checkbox"/> There are soft spinal tumors along with the spin	<input type="checkbox"/> Kyphoscoliosis or hunchback	
Other observation	<input type="checkbox"/> Indication of other impairments (Specify _____)		

Screening results	<input type="checkbox"/> With impairment or detected symptoms	Hospital health center/ _____
	<input type="checkbox"/> With impairment or detected symptoms	Checking date ____/____/____
	<input type="checkbox"/> Emergency referral	Checker _____
	<input type="checkbox"/> No referral needed	Checker's phone number _____
		Checker's signature _____
		<input type="checkbox"/> Returning date ____/____/____
	<input type="checkbox"/> Refer to _____	
	<input type="checkbox"/> Comments on the provided treatment/ _____	

Head circumference by age of boys and girls	1-3 months	4-7 months	8-12 months	1-2 years	2-3 years	3-5 years
	32-45 cm	-48 cm	39-50 cm	40-53 cm	43-54 cm	44-55 cm

HI/GIZ (2015): Inclusive Health Care Product. Physical Screening Manual (Birth to 6 Years) Cambodia

Provisional translation

Appendix

1- Equipment and Supplies for Pregnancy, Childbirth, Postpartum and Newborn Care

Warm and Clean Room
Delivery bed(s) Clean bed linen Curtains if more than one bed Clean surface (for the alternative delivery position) Worksurface for the resuscitation of newborn near the delivery bed(s)/bed warmer Light source Heat source Room thermometer
Hand Washing
Clean water supply Antibacterial hand washing soap Nail brush or stick Clean towels
Waste
A puncture-resistant container for sharps disposal Receptacle for soiled linen Bucket for soiled pads and swabs Bowl and a plastic bag for the placenta Thick gloves
Sterilization
Instrument sterilizer Jar for forceps Forceps Intermediary Tap test/scot test Clean clothes
Miscellaneous

Wall clock
Torch and extra batteries Refrigerator
Logbooks Records Registers Partograph
Yellow cards
Cards for family planning services

Equipment

Blood pressure machine and stethoscope Fetal stethoscope
Doppler Thermometer Baby scale
Self-inflating bag and masks (adult)
Self-inflating bag and masks (newborn sizes 0 and 1)
Mucous extractor with suction tubes
Vacuum extractor
MVA syringe and cannulae
Bed pan
Emergency box
Ambu bag and masks (newborn sizes 0 and 1)
Mucous extractor with suction tubes/Suction bulb
Cord clamp or tie
Sterile scissors to cut the cord.
Trays
Kidney Basin
Large and small bowls
Intermediary Forceps
Narrow Forceps
Sponge Forceps
Ring Forceps
Tenaculum
Uterine sound

Delivery Instruments (Sterile)

Scissors
Needle holder
Artery forceps or clamp
Dissecting forceps
Sponge forceps
Vaginal speculum

Supplies
<p>Gloves:</p> <p>Utility Sterile</p> <p>Long sterile for manual removal of placenta</p> <p>Long plastic apron</p> <p>Waterproof foot ware</p> <p>Plastic eye shield</p> <p>Urinary catheters</p> <p>Urinary bag</p> <p>Nasogastric tube</p> <p>Rectal tube</p> <p>Catheter IV</p> <p>Scalp Vein</p> <p>Tape measure for measuring abdomen</p> <p>Adhesive tape</p> <p>Gauze Pipettes</p> <p>Cotton balls,</p>
<p>Cotton tipped stick</p> <p>Syringes and needles</p> <p>IV tubing</p> <p>IV solutions (Ringers lactate, normal saline, glucose 5% and 10%)</p> <p>Suture material for repair of tears or episiotomy</p> <p>Antiseptic solution (iodophors or chlorhexidine)</p> <p>Spirit (70% alcohol)</p> <p>Swabs</p> <p>Bleach (chlorine-based compound)</p> <p>Clean plastic sheet to place under mother</p> <p>Sanitary pads</p> <p>Clean towels/cloths for drying and wrapping the baby (4 pieces)</p> <p>Cord ties/clamp</p> <p>Impregnated bednets</p> <p>Urine dipstix</p>
Test Kits
<p>Syphilis (rapid test)</p> <p>HIV (rapid test)</p> <p>Hemoglobin Pregnancy test (?)</p> <p>Proteinuria test</p> <p>Malaria test (ROT)</p>
Contraceptives
<p>Male and female condoms</p> <p>Progesterone-only oral contraceptives</p>

Progesterone-only injectables
Combined oral contraceptives
Emergency Contraceptive pills(EC)
Implants
IUDs
Combine injectables

2: Drugs for Pregnancy, Childbirth, Postpartum and Newborn Care

Drugs

Benzathine Oxytocin
Ergometrine
Magnesium sulfate
Calcium gluconate
Diazepam
Hydralazine
Ampicillin
Gentamycin
Penicillin
Metronidazole
penicillin
Cloxicillin
Amoxicillin Ceftriaxone
Trimethoprim + sulphamethoxazole
Clotrimazole vaginal pessaries
Erythromycin
Ciprofloxacin
Tetracycline or doxycycline
Metoclopramide
Arthemeter
Artesunate
Mefloquine
Dihydroartemisinin
Piperaquine
Quinine
Chloriquine tablets
Lignocaine
Adrenaline
Paracetamol
Gentian violet
Iron/folic acid tablets

Mebendazole Sulphadoxine-pyrimethamine Water for injection Tetracycline 1% eye ointment Vitamin K1 (vial 1ml = 10mg) Nevirapine (adult, infant) Zidovudine (AZT) (adult, infant) Lamivudine (3TC)
Vaccine
Tetanus toxoid BCG OPV Hepatitis B
Specification of drug preparation
Ampoules, 10 IU Ampoules, 1 mg Ampoules 50%, 10ml=5g MgSO ₄

3: Emergency obstetric surgery, anesthesia, blood transfusion

Basic Equipment
Sphygmomanometer (aneroid) and stethoscope (binaural) Self-inflating bag and face masks (adult size) Self-inflating bag and face masks (newborn sizes 0 and 1) Adult and infant laryngoscope with spare bulb and batteries Adult and infant laryngoscope tubes Absorbable, nonreactive sutures (i.e., polyglycolic, chromic catgut) and suture needles Urinary catheters and closed bag or container for catheter drainage Tourniquet 16- to 18-gauge IV cannulas Dextrose solution (5%) Ringer's lactate or normal saline IV administration sets Adhesive tape Oxygen tubing, nasal cannula, and face masks Suction tubing and catheters Surgical scrub brushes
Obstetric Laparotomy and/or Caesarean Section
Stainless steel instrument tray with cover Towel clips (5) Sponge forceps, 22.5 cm (6) Straight artery forceps, 16 cm (4) Uterine hemostasis forceps, 20 cm (8) Hysterectomy forceps, straight, 22.5 cm (4) Mosquito forceps, 12.5 (6) Tissue forceps, 19 cm (6) Needle holder, straight, 17.5 cm (1) Surgical knife handle, No. 3 (1), No. 4 (1) Surgical knife blades (4) Triangular point suture needles, 7.3 cm, size 6 (2) Round-bodied needles No. 12, size 6 (2) Abdominal retractors, double-ended (Richardson) (2) Curved operating scissors, blunt pointed (Mayo), 17 cm (1) Straight operating scissors, blunt pointed (Mayo), 17 cm (1)
Anesthesia
Anesthetic face masks
Oropharyngeal airways Endotracheal tubes with cuffs (8 mm and 10 mm)

Intubating forceps (Magill)

Endotracheal tube connectors, 15mm plastic (3 for each tube size)

Spinal needles (range of sizes, 18-gauge to 25-gauge)

Blood Transfusion (cross-matching, collection of donor blood, transfusion)

8.5 g/I sodium chloride solution 20%

Bovine albumin

Centrifuge

37 cc water bath (or incubator)

Pipettes Volumetric (1 ml, 2 ml, 3 ml, 5 ml, 10 ml, 20 ml)

Test tubes (small and medium-size)

Sphygmomanometer cuff

Airway needle for collecting blood

Artery forceps and scissors

Pilot bottles (containing 1 ml ACD solution)

Compound microscope and slides

Microscope illuminator

Blood giving sets

Provisional translation

References:

- Ministry of Health, National Maternal Child Health Centre. Safe Motherhood Clinical Management Protocols, Referral Hospital. (2013)
- Ministry of Health, National Maternal Child Health Centre. Safe Motherhood Clinical Management Protocols, Health Centre. (2016).
- Guide for practice on the package of service during Antenatal, Delivery and Postpartum care (1,000days package of service). (2019)
- Ministry of Health, National Centre for Parasitology, Entomology and Malaria Control. National Treatment Guideline for Malaria. November 2014.
- National Strategic Plan for Prevention of Mother-to-Child Transmission of HIV, Syphilis and Hepatitis B 2016 - 2020. (2017)
- Standard operation procedure for antenatal care integrated services and prevention of mother to child transmission of HIV and syphilis (2017) .
- World Health Organization. Pregnancy, Childbirth, Postpartum and Newborn Care: A guide for essential practice. Geneva 2015.
- World Health Organization. Managing Newborn Problems: A guide for doctors, nurses, and midwives. Geneva 2017.
- World Health Organization. Regional framework for The Triple Elimination of Mother-to-Child Transmission of HIV, Hepatitis B and Syphilis in Asia and the Pacific, 2018-2030.
- WHO Recommendations on Maternal Health: Guidelines approved by the WHO guidelines review committee (updated May 2017).
- WHO Recommendations on Newborn Health: Guidelines approved by the WHO guidelines review committee (updated May 2017).
- WHO Recommendations on interventions to improve preterm birth outcomes (2015)
- WHO recommendation on Calcium supplementation before pregnancy for the prevention of pre- eclampsia and its complications (2020)
- WHO recommendations on antenatal care for a positive pregnancy experience (2016)
- WHO recommendations intrapartum care for a positive childbirth experience (2018)
- WHO clinical management of COVID-19 (Interim guidance 27 May 2020)
- WHO Managing Complication in Pregnancy and Childbirth. A guide for midwives and doctors (second edition 2017).

The background is a solid teal color. A large, light teal circle is positioned on the right side, partially overlapping the teal background. The circle's edge is smooth and curves from the top right towards the bottom right.

Sponsored by the World Health Organization