MATERNAL CARE PACKAGE
A GUIDE TO
FIELD HEALTHCARE WORKERS

Family Health Bureau
Ministry of Health
2011

Family Health Bureau

World Health Organization

unicef

Maternal Care Package
A Guide to
Field Healthcare Workers

Family Health Bureau

Ministry of Health

2011

1st Edition
October 2011

ISBN : 978-955-1503-07-9

Draft adaptation and writing by:
Dr. Nilmini Hemachandra
Consultant Community Physician
National Programme Manager Maternal Care
Family Health Bureau,
Ministry of Health
Sri Lanka

Printed by:
New Karunadhara Press,
97, Maligakanda Road,
Colombo 10

Published by:
Family Health Bureau,
Ministry of Health
Sri Lanka

Sponsored by:
World Health Organization
Sri Lanka

RESOURCE PERSONS

Resource Persons:

Dr.Deepthi Perera	-	Director /Family Health Bureau
Dr.C. de Silva	-	Deputy Director /Family Health Bureau
Dr.Nilmini Hemachandra	-	Consultant Community Physician / FHB
Dr.Dammica Rowel	-	Consultant Community Physician/ FHB
Dr.Kapila Jayaratne	-	Consultant Community physician/ FHB
Dr.Nethanjalee Mapitigama	-	Consultant Community physician/ FHB
Dr.Loshan Moonasinghe	-	Consultant community Physician/ FHB
Dr.Nirosha Lansakara	-	Consultant Community Physician/ FHB
Dr.Udaya Usgodaarachchi	-	Consultant Community Dental Surgeon/ FHB
Dr.Sarath Amarasekara	-	Consultant Obstetrician and Gynaecologist / SLCOG
Dr.Sarath Samarathunga	-	Consultant Obstetrician and Gynaecologist/ SLCOG
Dr.Gamini Perera	-	Consultant Obstetrician and Gynaecologist/ SLCOG
Dr.Hemantha Perera	-	Consultant Obstetrician and Gynaecologist/ SLCOG
Prof. Hemantha Senanayake	-	Prof.of Obstetrics and Gynaecology,Faculty of Medicine, Colombo
Prof.Harsha Seneviratne	-	Prof.of Obstetrics and Gynaecology,Faculty of Medicine,Colombo
Prof.Chandrika Wijeratne	-	Prof.of Reprodutive Health, Faculty of Medicine, Colombo
Dr.Lakshman Senanayake	-	Consultant Obstetrician and Gynaecologist
Dr.Athula Kaluarachchi	-	Consultant Obstetrician and Gynaecologist, Faculty of Medicine-Colombo
Dr.Sujatha Samarakoon	-	Consulatnt Venereologist, NSACP
Dr.Renuka Jayatissa	-	Nutritionist, MRI
Dr.Anoma Jayathilaka	-	National Professional Officer,World Health Organization
Dr.Deepika Attygalle	-	Nutrition Specialist, UNICEF
Dr.Nishamanie Karawita	-	National Health officer, UNICEF
Dr.Nilani Fernando	-	Deputy RDHS – Kandy
Dr.Daya Wattearachchi	-	Medical Officer /Maternal and Child Health –Rathnapura
Dr.Badrika Gunawardena	-	Medical Officer of Health- Piliyandala
Dr.Lalitha Ratnayake	-	Medical Officer of Health - Piliyandala
Dr.Sapumal Danapala	-	Consultant Community Physician - Central Province
Dr.Sarath Warusavithana	-	Medical Officer of Maternal and Child health – Matara
Dr.Priyankara Jayawardena	-	Consultant Physician – Castle Street Hospital for Women
Dr.Uditha Bulugahapitiya	-	Consultant Endocrinologist
Dr. Prasad Katulanda	-	Consultant Physician,NHSL
Dr.Rabindra Abeysinghe	-	Consultant Community Physician, Anti Malaria Campaign
Dr.Sudath Pieris	-	Consultant Epidemiologist, Epidemiology Unit, Ministry of Health
Dr. S de Alwis	-	Director, National Respiratory and Chest Disease Control Programme
Mrs. D. Ubeywarna	-	Director/Nursing (PHS)
Dr.Hasitha Aluthge	-	MOH, Deraniyagala
Dr.Dumithra Kahangamage	-	MOH ,Padukka
Dr. Shanika Senanayake	-	Medical Officer – Family Health Bureau
Mrs.K.A. Sunethra	-	PHNS ,Thihagoda MOH area
Mrs.Nalika Weeraratne	-	PHNS, Pelmadulla MOH area

Editing

Dr. Anoma Jayathilake	-	National Professional Officer, WHO
Dr. Nilmini Hemachandra	-	Consultant Community Physician, FHB
Dr. Dhammica Rowel	-	Consultant Community Physician, FHB
Dr. Shanika Senanayake	-	Medical Officer, FHB

CONTENT

PREFACE

Pregnancy is the most wonderful physiological phenomenon which is responsible for the existence of mankind within the universe, though it creates a high risk environment for a woman's life. With development of the discipline of obstetrics and the health systems, the threat to life has been minimized and the world has achieved a lot in maternal and child health.

Sri Lanka, although a developing country, has been able to achieve remarkable health indices such as low maternal mortality rate, infant mortality rate, under five mortality rate, higher level of life expectancy due to the tireless efforts of many stakeholders over the last few decades. The foundation for these achievements are the policy of free education and free health services for the entire nation, commitment by all levels of medical and other related professional personnel and the existence of a strong preventive and curative health infrastructure.

Provision of comprehensive maternal, family planning, and child care services through a well-organized structure at institutional and community level, implementation of evidence based interventions integrated as packages, use of professionally trained health personnel at the community level from the inception of the national MCH/FP programme are the major contributors for the success.

Although our targets in most aspect of the MCH has been achieved, still some gaps can be identified in certain areas such as postnatal care, quality of care and geographical disparity in some indices. Further, some indices such as IMR, MMR, Low birth weight rate have shown slow decline during the past decade.

To overcome these gaps and challenges, we need to focus more on targeted interventions, equitable service provision and quality of care. Therefore, this guide was developed by a group of experts in the relevant fields considering existing maternal care model and intervention packages, evidence based interventions, recommendations given by the external review of the Maternal and Newborn care programme (2007), National Maternal Mortality Reviews, MCH reviews and the felt need of the relevant experts for the betterment of the maternal care programme in the country.

We strongly recommend this book as a guide for the health workers who provide maternal and newborn care in the country and as a hand book for medical, nursing and midwifery students.

Dr. Ajith Mendis
Director General of Health Services
Ministry of Health
Sri Lanka.

Dr. Deepthi Perera
Director/ Maternal and Child Health
Family Health Bureau
Ministry of Health
Sri Lanka.

ACKNOWLEDGEMENT

This guide is an outcome of the efforts of many people. Dr. L. Siyambalagoda, Deputy Director General (Public Health Services), Dr. Deepthi Perera, Director/ Maternal and Child Health, Family Health Bureau and Dr. Chitramalee de Silva, Deputy Director/ Maternal and Child Health, Family Health Bureau guided us to develop this guide providing their fullest support and guidance.

Dr. Sarath Amarasekara (president /2010), Dr.Ananda Ranathunga, (President/2011), and other members of the Sri Lanka College of Obstetricians and Gynaecologists provided us with their technical expertise and cooperation during the development of this guide and pilot testing of the revised maternal care model. Our gratitude is conveyed to SLCOG.

We would like to appreciate the contribution of Consultant Community Physicians at the Family Health Bureau with their technical expertise in their fields and constructive criticism. We would acknowledge all the Medical Officers (Maternal and Child Health), Medical Officers of Health, Public Health Nursing Sisters, Supervising Public Health Midwives and Public Health Midwives who contributed for the development of this guide in various ways.

We would like to appreciate the contribution of the Public Health teams of Ratnapura and Kandy districts for the pilot testing of the maternal care package and their contribution to fine tune this. We would like to acknowledge and appreciate the contribution of Dr. Anoma Jayathilake as a public health specialist in the field of maternal care for the success of this endures.

Financial support received from UNICEF for consultative meetings during the process of development of this package is highly appreciated. Our sincere gratitude is conveyed to the World Health Organization Country Office for the guidance and financial support received, for pilot testing scaling up and printing of this document in all three languages.

Dr. Nilmini Hemachandra
National Programme manager – Maternal care
Family Health Bureau,
Ministry of Health,
Sri Lanka.

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
AMC	Anti Malaria Campaign
ANC	Antenatal Care
APH	Antepartum Haemorrhage
ART	Anti retro viral treatment
BF	Breast Feeding
BMI	Body Mass Index
BP	Blood Pressure
CEmOC	Comprehensive Emergency Obstetric Care
CHDR	Child Health Development Record
CS	Congenital Syphilis
CSB	Corn Soya Blend
DMMR	District Maternal Mortality Review
EBF	Exclusive Breast Feeding
ECCD	Early Childhood Care & Development
EDD	Expected Date of Delivery
EmOC	Emergency Obstetric Care
EPI	Expanded Programme of Immunization
FHB	Family Health Bureau
FHS	Fetal Heart Sounds
FM	Fetal Movements
GBV	Gender Based Violence
GDM	Gestational Diabetes Mellitus
Hb	Haemoglobin
HEO	Health Education Officer
HIV	Human Immunodeficiency Syndrome
IUD	Intra Uterine Device
IUGR	Intra Uterine Growth Retardation
IVF	In Vitro Fertilization
JMO	Judicial Medical Officer
JVP	Jugular Venous Pressure
KCC	Kick Count Chart
LRM	Last Regular Menstruation
LRT	Ligation and Resection of Tubes
LSCS	Lower Segment Cesarean Section
MO	Medical Officer
MO/STD	Medical Officer/STD clinic
MOH	Medical Officer of Health
MOMCH	Medical Officer-Maternal & Child Health
MSD	Medical Supplies Division
MTCT	Mother To Child Transmission
NCD	Non Communicable Disease
NICU	Neonatal Intensive Care Unit
NMMR	National Maternal Mortality Review
NSACP	National STD/AIDS Control Program
OCP	Oral contraceptive Pills
OGTT	Oral Glucose Tolerance Test
PDHS	Provincial Director of Health Services
PHI	Public Health Inspector
PHM	Public Health Midwife
PHNS	Public Health Nursing Sister
PID	Pelvic Inflammatory Disease
PIH	Pregnancy Induced Hypertension
PLHIV	People Living with HIV
PMTCT	Prevention of Mother To Child Transmission of HIV
POA	Period of Amenorrhoea
PPBS	Post Prandial Blood Sugar
PPH	Postpartum Haemorrhage
RDHS	Regional Director of Health services
SCBU	Special Baby Care Unit
SFH	Symphysio- Fundal height
SMI	School Medical Inspection
SPHM	Supervising Public Health Midwife
STD	Sexually Transmitted Diseases
TB	Tuberculosis
TT	Tetanus Toxoid
USS	Ultra Sound Scan
VDRL	Venereal Disease Reference Laboratory

Chapter 01

INTRODUCTION

Development of maternal care services in Sri Lanka

The history of health care systems in Sri Lanka is extended to king's era. The documentary evidence says that there were several hospitals for indigenous medicine and maternity homes for child birth existed during the reign of the Sinhalese kings as early as 340-368 AD. The expectant mothers were made to move into these homes in the ninth month of pregnancy and stay there till child birth. Most mothers delivered in the few maternity homes that were available or in their homes under the care of experienced birth attendants.

Around the 15th century, a systematized network of Ayurvedhic treatment centers and hospitals throughout the country was established and Ayurvedhic Physicians were trained to work in these treatment centers. This resulted in gradual diffusion of health care within the country. The documentary evidence in the history of ancient Ceylon stated that separate hospitals existed for women under the Ayurvedic System of Medicine where deliveries have been conducted.

Sri Lanka came under the colonial rule in1505 and was successively under the Dutch, Portuguese and the British till achieving independence in 1948. During this period, the Western System of medicine was introduced and hospitals were built to provide medical care. In 1859, a separate Civil Medical Department was established and public health became a function of this department.

The first organized effort towards care of the childbearing woman was made in 1879 with the opening of the De Soysa Lying- in- Home now known as the De Soysa Hospital for Women. This was built by a philanthropist (Sir Charles Henry De Soysa) to provide a home for lying-in-mothers as well as to provide out-patient care to mothers and children. This was probably the first maternity hospital to be established in Asia and soon afterwards the first training school for midwives was opened at this maternity hospital in 1881. In 1887, Legislation for registration of midwives was introduced which made it mandatory for all midwives to be registered prior to practicing midwifery. This was a great step taken towards development of maternal care services since it enhanced the quality of midwifery services provided in Sri Lanka.

In 1902, a maternal and child health department was created with in the Colombo Municipality following an investigation into the high rate of infant mortality within the Municipality. In 1906, a system of field maternal services commenced within the Colombo Municipality with the appointment of six midwives. This was followed by the appointment of two health visitors in 1913. The MCH services were thereafter gradually expanded.

The first antenatal clinic was started at the De Soysa Lying-in-home in 1921 following the commencement of Antenatal Clinics in Boston, USA in 1911, Sydney in 1912 and Edinburgh in 1915.

The need for developing the preventive and promotive services was recognized by the government as early as 1920. In the mid 1920's steps were taken to introduce a Health Unit System which could provide a comprehensive health care service (institutional and domiciliary) to mothers and children.

This scheme was to provide domiciliary as well as clinic based services to mothers during pregnancy and postpartum period and, trained assistance at delivery by encouraging mothers to deliver in medical institutions or provide trained assistance in the case of home deliveries. The first Health Unit was established in 1926 at Kalutara and trained Public Health staff (Public Health Midwives and Nurses) were appointed to provide the necessary services. This scheme was thereafter extended to other areas and by 1936, eight Health Units were established within the country.

Until 1926, the midwives functioned only in the hospitals and their training was only hospital based. With the establishment of the Health Unit System, the Midwives were given one month field training in public health midwifery and appointed to the Health Units as Public Health Midwives. After 1938, the PHM's training was more systematized with the use of appropriate circular and the field training was extended to six months.

Training of Public Health Nurses (PHNs) commenced in 1928 and consisted of six months training in midwifery and six months in public health. Since 1980, training in the public health for nurses conducted at the National Institute of Health Sciences (NIHS) was extended to one year, after which a Diploma in Public Health Nursing was awarded. This category is now designated as Public Health Nursing Sisters.

Formal training for Medical Officers of Health commenced in 1936 and is of one month's duration. This facilitated the effective implementation of the Health Unit System.

The control measures adopted following the Malaria epidemic of 1935, led to further expansion of the Health Unit System. The maternal and child health infrastructure, which originated with the Health Unit Systems, was linked to the expanding malaria control programme and the medical officers recruited for malaria control provided MCH services at the health centres in addition to their normal malaria control activities.

The Government policy in the early 1930's enunciated the need for diffusion of health services throughout the country. After the granting of Universal Franchise in 1931, there was political demand for expansion of health services in rural areas. A large number of maternity homes, rural hospitals and cottage hospitals were constructed and the staff in these medical institutions was trained in care of the mother and child. The number of Health Units, which was eight in1936, increased to ninety-one by 1950. Currently there are more than 300 Health Units in the country.

The government provided health care free of charge making health services accessible to the poorest segments of the population. The introduction of the free education system in 1941 led to an increase in literacy, which helped in increasing the level of health consciousness and greater utilization of health facilities.

The number of medical institutions with facilities for delivery increased from 141 in 1941 to 521 in 2000. Also the number of health centres increased from 600 in1948 to about 3200 in 2000.

Similarly availability of trained health man power has shown a marked increase since 1940's. Trained midwives increased from 347 in 1941 to 8741 in 2009 and the Public Health Nurses (now called Public Health Nursing Sisters) increased from 41 in 1948 to 254 in 2009.

Since independence in 1948, a more concerted effort was made to provide a comprehensive service to mothers and children throughout the country. The MCH services were extended to the rural areas in an effort to make the service availability more equitable. The second maternity hospital in Colombo (Castle Street Maternity Hospital) with accommodation for 144 patients was opened in

1950. Thereafter, an increasing number of maternity beds and specialist services were provided to the Provincial and Base Hospitals with blood transfusion facilities extended to these hospitals.

The policies of Sri Lanka in the early years after independence reflected little concern over the high growth rate (31 per 1000) that prevailed during that period. The first organized effort for introducing family planning was made in 1953 with the founding of the Family Planning Association (FPA) of Ceylon. The activities of the Association were focused on family welfare with a view to reducing maternal mortality, infant mortality and malnutrition and were mainly centered within and around Colombo. The work done by the Association was recognized when the government provided a financial grant in 1954.

Realizing the importance of family planning, in 1958 the government entered into a bilateral agreement with the Royal Government of Sweden to study community's attitude toward family planning and its acceptance by the people. Under this agreement, training programmes for doctors, nurses and midwives were started and two pilot projects were conducted in community family planning. The results of this project were encouraging. In the pilot areas, the crude birth rate showed a promising decline and an increase in positive attitudes towards family planning was seen within the community. The activities of the Swedish project during 1958 – 1965 period demonstrated that family planning can be successfully integrated into the MCH services without any great increase in personnel or expenditure.

Based on the above experiences, the government accepted family planning as national policy in 1965 and decided to integrate family planning services with the already well-established Maternal and Child Health services provided through the Ministry of Health. This procedure was adventurous since the personnel and the infrastructure of an already well- organized system could be made use of without any additional cost and also family planning could be introduced as an integral part of the maternal health package offered by the system. Considering its national importance, a separate division, 'the Family Planning Bureau' which was later re-designated as 'Maternal and Child Health Bureau' was set up in 1968 within the Ministry with an Assistant Director MCH responsible for implementation of the programme throughout the country. This Bureau was given the task to plan, operate, supervise and evaluate the family planning programme within the country.

The period 1966 to 1968 could be regarded as an introductory phase where establishment of family planning clinics, training of relevant health personnel and administrative strengthening of the Ministry of Health laid the foundation for the expected expansion and intensification of the programme.

In 1970, the government made a positive statement towards family planning. It stated that 'though family planning would not be a solution to the economic ills of the country, nevertheless family planning facilities should be made available on a more intensified scale.' In the national five year plan of 1971, family planning received due importance and a statement was made emphasizing that 'family planning should be made available to all groups and not be confined to the privileged section of society.' This provided the necessary political endorsement and support from the government for family planning, though some groups still resisted the idea.

In 1972, 100 pilot projects were started, one in each MOH area to try out a coordinated approach to maternal care, family planning, child care including nutrition and immunization, health education etc. Based on the experience gained, the MCH/FP programme received a new dimension with a more comprehensive approach towards the family. The Bureau was re-designated the 'Family Health

Bureau' in 1973 and the programme was named 'Family Health' so that this would provide a more comprehensive service to the mother and child. Thereafter maternal and child health services received greater emphasis and were given priority in the overall health development plan. This led to more concerted effort to strengthen the service infrastructure to provide an efficient family health service through out the country. The government sought the assistance of International Organization to financially support the implementation of services within the country.

The Family Health Bureau was made the central organization of the Ministry of Health responsible for planning, promoting, coordinating, monitoring and evaluating family health activities. Following a revision of the MCH information system in1985, the Family Health Bureau was entrusted the task of collecting, processing and analyzing MCH data from the Health Units

Maternal death investigations were conducted from the early 1950 s, but were actively implemented in the mid 1980's when instructions were given to investigate and report all maternal deaths occurring in the medical institutions and in the field (community) including those in the plantation sector. These were thereafter reviewed at the district and national levels by the respective health authorities. Any corrective measures needed to overcome problems and constraints were taken to prevent such deaths in the future. This system was further strengthened in 1989 when maternal deaths were made a notifiable event and clear guidelines on the procedure for investigation were issued to all hospitals and health units.

Since the International Conference on Population and Development in Cario in 1994, the concept of reproductive health has been introduced which addresses reproductive health issues of the adolescents, young adults, married couples, and women even after menopause thus providing a life cycle approach to family health care. Some of the reproductive health issues that have received emphasis in the programme are RH problems in the adolescents, early identification of reproductive health organ malignancies, prevention of reproductive tract infections including sexually transmitted diseases / HIV-AIDS, concept of women's empowerment and male involvement in RH activities.

Services in respect of sexually transmitted diseases and HIV/AIDS are provided through the National STD Control Programme (NSACP). The Family Health Bureau in collaboration with the National Cancer Control Programme (NCCP) has introduced in 1995 a screening programme for reproductive organ malignancies and certain other conditions. Under this programme 'Well Women's Clinics' have been established in all Health Unit areas conducted by trained medical officers. Women over 35 years of age could be screened for such as hypertension, diabetes, breast malignancies and cervical cancers. If any abnormality is detected clients are referred to the health care system for necessary management. The PHM of the area is responsible for follow up of cases in the field and provides necessary advice and guidance thereafter.

Tenth anniversary of Safe motherhood concept which was held in Sri Lanka in 1997 was an appraisal of maternal health program in Sri Lanka.

Institutional Framework for Providing Maternal Care

Maternal, child health and family planning services are provided through the well-developed health infrastructure of the Ministry of Health, which has grown steadily over the past few decades. The services are provided through a net of work of Medical Institutions comprising major hospitals with specialist services (Teaching, Provincial and Base hospitals), Divisional Hospitals, and central

dispensaries and Maternity homes. The institutional network is closely linked to a system of Health Units, which are primarily responsible for providing preventive and promotive health care to the community.

Since 1989, the country's administration was decentralized with devolution of administrative powers to the Provincial Councils. Each province has a Provincial Director of Health Services (PDHS) who is responsible for total health care within the province. He is supported by a Regional Director of Health Services (RDHS) who is in charge of a Health District. RDHS is supported by a team comprising a Medical Officer MCH (MO.MCH), Regional Epidemiologist (RE), Regional Supervising Public Health Nursing Officer (RSPHNO), 2-3 Health Education Officers, a Statistical Survey Officer (SSO) and a Programme Planning Officer (PPO). Each Health District is further sub-divided into Health Divisions (7-15) consisting of Health Units and a network of medical institutions of different categories.

The Health Units have a clearly defined area, which is congruent with the administrative divisions of the country. It is managed by a Medical Officer of Health (MOH). He is supported by a team of public health personnel comprising of one or two Public Health Nursing Sisters (PHNS), Supervising Public Health Inspector (SPHI), few Supervising Public Health Midwives (SPHM), 20 – 25 Public Health Midwives (PHM s) and 5-6 Public Health Inspectors (PHI).

Public Health Midwife area (PHM areas) is the smallest working unit in the government health system. The PHM is the 'front line' health worker for providing domiciliary MCH/FP services in the community. Each PHM has a well defined area consisting of a population ranging from 2000-4000.

Though systematic home visits, the Public Health Midwife provides care to pregnant women, infants and pre-school children and family planning services to couples in the reproductive age within her area. In case of necessity, she provides trained assistance during home deliveries when called by the community. She also provides necessary education and advice to adolescents on RH where needed and educates women on the importance of screening for reproductive organ malignancies thus motivating them to attend the 'well women clinics' for necessary check up. She also assists at the area MCH/FP clinics, which are conducted fortnightly, linking the community with the institutional health system. Her activities are supported by a system of record keeping which enables her tot plan and monitor her routine activities. Her work is regularly supervised by the Supervising Public Health Midwife, Public Health Nursing sister and the MOH of the area.

Higher Level Health Institutions; Teaching Hospitals, Provincial General Hospitals, District General Hospitals and Base Hospitals provide specialized care for obstetric including Comprehensive Emergency Obstetric and Neonatal Care (CEmONC) and other specialties. Currently there are 72 hospitals within the country belonging to this category giving a ratio of 1 per 275,000 population. Almost 80 percent of institutional deliveries occur in these hospitals.

Intermediate Level Health Institutions; Divisional Hospitals manned by qualified medical graduates (MBBS) and provide a wide range of services including in-patient and out -patient care. These institutions are capable of providing basic EmONC services. Currently there are 455 Divisional Hospitals and 525 Primary care units within the country where almost 20 percent of institutional deliveries take place.

Primary Level Institutions manned by qualified medical graduates (MBBS) or Registered/ Assistant Medical Practitioners. These are the central dispensaries and Maternity Homes (CD & MH) where facilities for only uncomplicated deliveries are available.

The private sector, which includes private hospitals/nursing homes and general medical practitioners also provide maternal care services of a varying degree. Although data is not available, it is known that a considerable proportion of patients obtain maternal care from the private sector.

Service delivery and Achievements

The Government of Sri Lanka is committed to providing a comprehensive system of health care to its people. Maternal and Child health and Family Planning form an important component of the prevailing health care system and are an integral part of the Primary Health Care strategy.

Maternal care is provided free of charge to all pregnant women during antenatal, intranatal and postnatal periods through the health care system. The use of skilled attendance during pregnancy and labour has greatly increased over the past five decades.

Studies has shown that more than 99 percent of pregnancy women had received antenatal care during pregnancy and almost 99 percent received trained assistance at delivery (DHS-2006/2007).

Antenatal care is provided at MCH clinics conducted in health centers both in the field and in medical institutions. These clinics are usually conducted once a fortnight. In addition, domiciliary care is provided by Public Health Midwives through routine home visiting. Pregnant women are registered for antenatal care early and 'Pregnancy record' is maintained to facilitate proper follow up. Since the early 1990's, a home based 'Pregnancy Record' was introduced which is kept and carried by the mother so that vital information regarding the pregnancy is made available to the attending doctors and the health staff at any facility she visits. 'High risk' mothers are identified and special attention is given throughout pregnancy and delivery. An organized system of referral exists for cases that need special care and attention.

The number of mothers receiving trained care during delivery has more than doubled since 1948. Only 48 percent of mothers had received trained assistance at delivery (i.e. delivered either in an institution or under supervision of a qualified midwife) during the late 1940's. Currently almost 99 percent of deliveries receive trained assistance with approximately 99 percent taking place in medical institutions (95 percent in Government institutions and 4 percent in the private hospitals).

Of the total deliveries in the government institutions almost 80% take place in larger hospitals where Comprehensive Emergency Obstetric Care is available. This has resulted in overcrowding of maternity wards in the larger hospitals. One of the main reasons for this overcrowding is the people's preference to have their confinement in larger hospitals with better facilities rather than going to their area hospital.

Births in government medical institutions have increased steadily during the past four decades. Easy access to institutional care and regular contact with the PHM appears to have influenced their decision in favour of institutional deliveries.

After delivery the mother and child are followed at home by the area PHM with necessary post partum care (including advice and guidance) being provided during these visits. Routine statistics reveal that approximately 80 percent of women receive post natal care at least once during the first ten days after delivery (Annual Family Health Report, 2007-FHB)

Chapter 02

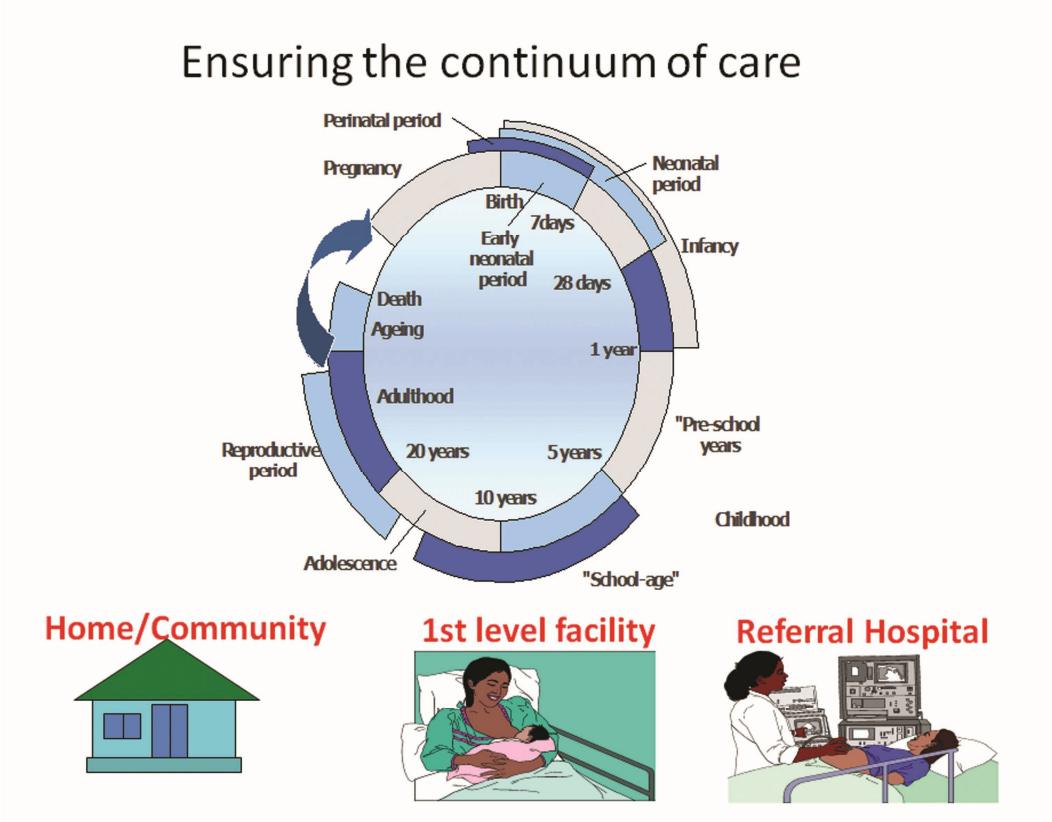
BASIC PRINCIPLES OF MATERNAL AND NEWBORN HEALTH INTERVENTIONS

Maternal and Newborn health interventions are **treatments, technologies, and key family practices** that prevent or treat Maternal and Newborn illness and reduce deaths in mothers and children (WHO 2010).

These interventions are not only reducing mortality and morbidity in the mother and newborn but also ensure quality of life. There are simple low-cost interventions for the prevention and treatment of all the most common causes of maternal and newborn, morbidity and mortality. An effective maternal and newborn health programme must focus on achieving a high level of coverage with such interventions that have the greatest potential to reduce maternal and newborn mortality and morbidity in the country.

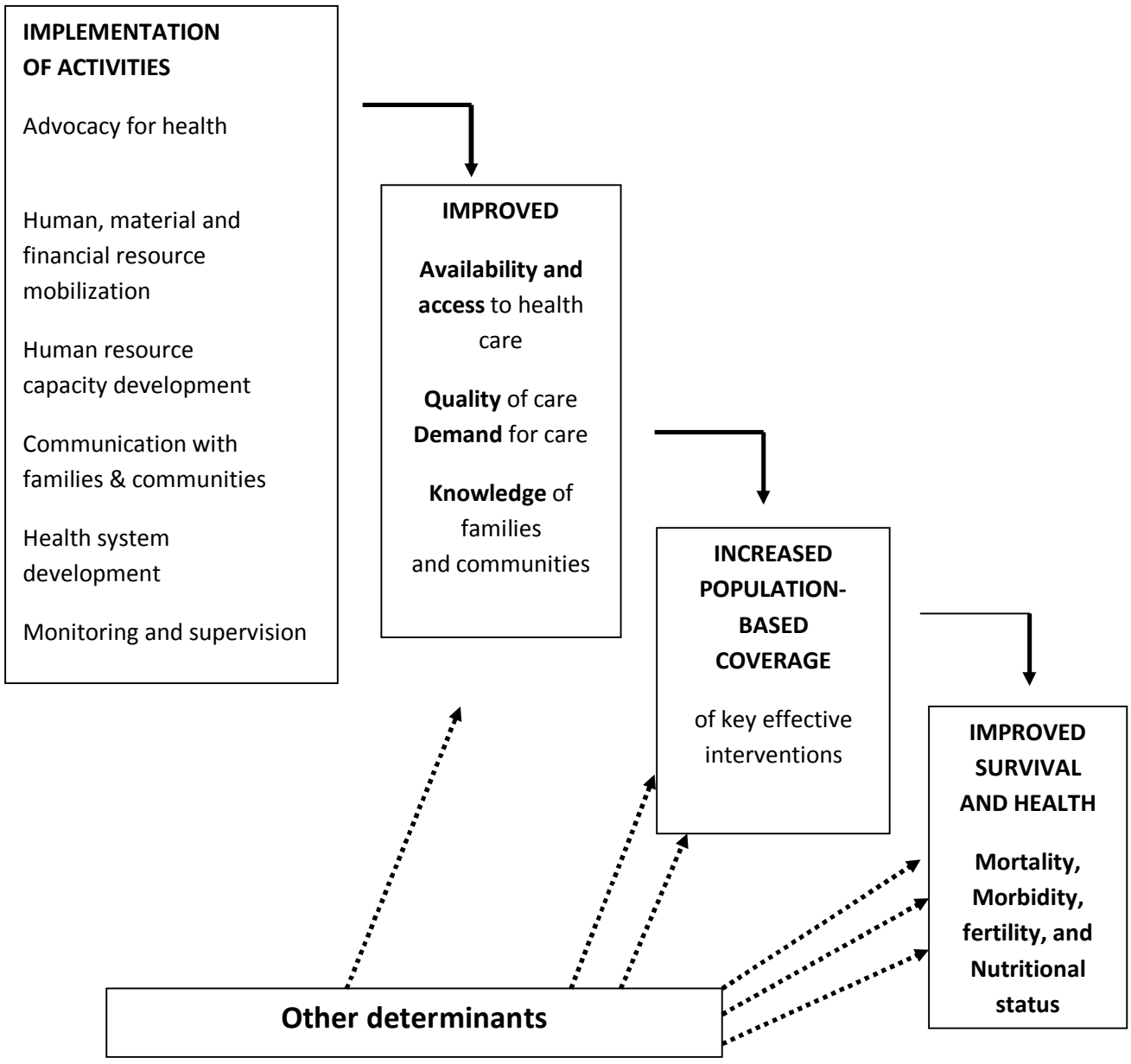
Principles of delivering interventions

The continuum of care for the mother and child includes the life stages from adolescent, pre pregnancy, pregnancy, through birth, the newborn period, infancy and childhood. Interventions should be targeted at all of these stages in order to maximize impact.



The continuum of care across the health system includes the levels at which interventions are delivered: home and community, first-level health facilities (field clinics and medical institutions up to Divisional Hospitals) and referral facilities (hospitals with specialist facilities). Interventions should be delivered at each of these levels where relevant. Facility-based interventions should be balanced with those in the home and community, since the prevention and management of maternal and newborn illness and deaths begins in the home. Continuums of care throughout the lifecycle and across the health system are a useful way of delivering an intervention.

Programmatic Pathway to improve health status



Pregnancy care

Interventions at home/ COMMUNITY level

- Information and counseling on self-care at home, nutrition, safer sex, HIV, breast feeding, family planning, healthy life style including harmful effects of smoking and alcohol use, and use of insecticide treated bed nets
- Birth planning, advice on labour, danger signs and emergency preparedness
- Support for compliance with preventive treatments
- Support for woman living with HIV/AIDS
- Assessment of signs of domestic violence and referral
- Educate and support for compliance with preventive treatment

Pregnancy care at FIRST LEVEL FACILITY

All of the above plus

- Confirmation of pregnancy
- Monitoring of progress of pregnancy and assessment of maternal and fetal well-being including nutritional status
- Detection of problems complicating pregnancy (eg: anaemia, hypertensive disorders, bleeding, mal-presentations, multiple pregnancy)
- Responds to other reported needs
- Tetanus immunization
- Anaemia prevention and control (iron and folic acid supplementation and worm treatment) and nutrition counselling
- Syphilis testing and treatment of syphilis (woman and her partner)
- Treatment of mild to moderate pregnancy complications (mild to moderate anaemia – urinary tract infection, vaginal infection)
- Post abortion care and family planning
- Pre- referral treatment of severe complications (pre-eclampsia, eclampsia, bleeding, infection and complicated abortion)
- Antibiotics for premature rupture of the membranes
- Support for women living with violence and HIV

Situational

All of the above plus

- HIV testing and counseling, prevention of mother to child transmission of HIV (PMTCT) by antiretroviral including antiretroviral therapy (ART), infant feeding counseling, mode of delivery advice
- Antimalarial intermittent preventive treatment (IPT) and promotion of insecticide treated nets (ITN)
- Deworming
- Assessment of female genital mutilation
- Treatment of mild to moderate opportunistic infections
- Treatment of simple malarial cases

Interventions at REFERRAL FACILITIES

All of the above plus

- Treatment of severe pregnancy complications (anaemia, severe pre – eclampsia, eclampsia, bleeding , infection , other medical complications)
- Treatment of abortion complications
- Management of mal- presentations, multiple pregnancy
- Corticosteroids for preterm labour

Situational

All of the above plus

- Treatment of severe HIV infection
- Treatment of complicated malaria

Child birth care

Interventions at home/ COMMUNITY level

- Companion of choice to support the woman during delivery
- Support for care for the rest of the family
- Support for transport
- Promote and support for skilled care at birth and institutional delivery

Child birth care at FIRST LEVEL FACILITY

All of the above plus

Care during labour and delivery

- Diagnosis of labour
- Monitoring progress of labour , maternal and fetal well- being with partogragh
- Companion of choice to support the woman
- Infection prevention
- Supportive care and pain relief
- Detection of problems and treatment of complications (e.g. malpresentation, prolonged and/ or obstructed labour, hypertension, bleeding and infection)
- Delivery and immediate care of the new born baby
- Active management of third stage of labour

Immediate postpartum care of mother

- Monitoring and assessment of maternal well being
- Prevention and detection of complications (e.g. hypertension , infections, bleeding, anaemia)
- Treatment of abnormalities and complications (e.g. prolonged labour, vacuum extraction, breech presentation, episiotomy, repair of genital tears, manual removal of placenta)
- Pre- referral management of serious complications(e.g. obstructed labour, fetal distress, preterm labour, severe peri- and postpartum haemorrhage)
- Counseling and Support for the family if maternal and perinatal death
- Counselling for family planning including insertion of IUDs, LRTs

Immediate newborn care

- Skin to skin care
- Thermal care
- Hygienic cord care
- Newborn resuscitation if required
- Early initiation of breast feeding
- Rooming in
- Recognition of danger signs and prompt treatment
- Identification and initial management of newborn complications and appropriate referral
- Special care for small babies including Kangaroo Mother Care
- Exclusive breast feeding
- BCG immunization
- Prevention of mother to child transmission of HIV (guidance and support for chosen infant feeding option)

Situational

All of the above plus

- Vitamin A administration for mother
- HIV testing and counseling
- Prevention of mother – to- child transmission of HIV by mode of delivery, guidance and support for chosen infant feeding option
- Care for HIV positive women/ ART

Child birth care at REFFERRAL FACILITY

All of the above plus

- Treatment of severe complications in child birth and in the immediate postpartum period, including caesarean section, blood transfusion and hysterectomy
- Induction and augmentation of labour
- Management of other obstetric complications
- Management of severe newborn complications

Postpartum care

Interventions at home/ COMMUNITY level

- Information and counseling on selfcare at home, nutrition, safer sex, breast feeding, family planning/ birth spacing, healthy lifestyle including harmful effects of smoking and alcohol use
- Support for rest and less work load
- Support for exclusive breast feeding
- Safe disposal/ washing of pads
- Assessment of maternal wellbeing including maternal nutrition
- Malaria prevention and management of malaria
- Support for complications with prevention measures and treatments (infections, bleeding, anaemia, UTI, RTI, wound infections, breast feeding problems)
- Family planning / birth spacing
- Recognition of danger signs, including blues/ depression
- Awareness of signs of domestic and sexual violence and referral
- Support for women living with HIV/ AIDS including ART
- Reporting birth and death (vital registration)
- Use of insecticide treated bed nets

Postpartum care at FIRST LEVEL FACILITY

All of the above plus

- Prevention and detection of complications (e.g. infections, bleeding, anaemia)
- Anaemia prevention and control (iron and folic acid supplementation)
- Provision of contraceptive methods
- Treatment of some problems(e.g. mild to moderate anaemia, mild puerperal depression, mastitis)
- Pre – referral treatment of severe complications (e.g. severe postpartum bleeding , puerperal sepsis)
- Vit. A mega dose suplementation
- Recording and reporting

Situational

All of the above plus

- Antiretroviral treatment (ART)
- Treatment of uncomplicated malaria

Postpartum care at REFFERRAL FACILITY

All of the above plus

Treatment of all complications

- Severe anaemia
- Severe postpartum bleeding
- Severe postpartum infections
- Severe postpartum depression

Tubal ligation and vasectomy

Situational

All of the above plus

Treatment of complicated malaria

New born care

Interventions at home/ COMMUNITY level

Promotion and support for:

- Exclusive breast feeding
- Thermal protection
- Infection prevention : general hygiene, hand washing , cord care and safe disposal of baby's faeces
- Care of a small baby without breathing and feeding problems: frequent breast feeding , skin – to skin contact
- Prevention of indoor air pollution
- New born stimulation and play
- Recognition of danger signals, problems, illness and timely care- seeking
- Support for routine care and follow up visits
- Birth registration
- Promotion, protection and support for exclusive breast feeding
- Monitoring and assessment of wellbeing and response to maternal concerns
- Care of preterm/ low birth weight without breathing problems: support for breast- milk feeding, Kangaroo mother care, skin to skin care

Situational

- Promotion and provision of insecticide treated bed nets
- Adherence to ARV for PMTCT

Interventions at FIRST LEVEL HEALTH FACILITY

All of the above plus

- Rooming in
- Eye infection prophylaxis
- Immunization
- Additional follow up for at risk babies
- Treatment of local infections (skin , cord, eye, mouth)
- Identification , initial management and referral of a new born with any sign of severe illness , injury or malformation
- Recording and reporting

Situational

All of the above plus

- ARV regimens for PMTCT including ART
- Support for safer infant feeding options

Interventions at REFFERRAL FACILITY

All of the above plus

Management of a new born with severe problems: general care of a sick newborn and specific care for:

- Preterm babies with breathing problem or unable to feed orally (includes provision of KMC)
- Severe infection
- Severe birth asphyxia
- Other: severe jaundice, malformations
- Presumptive treatment of congenital syphilis

Chapter 03

MATERNAL CARE MODEL IN SRI LANKA

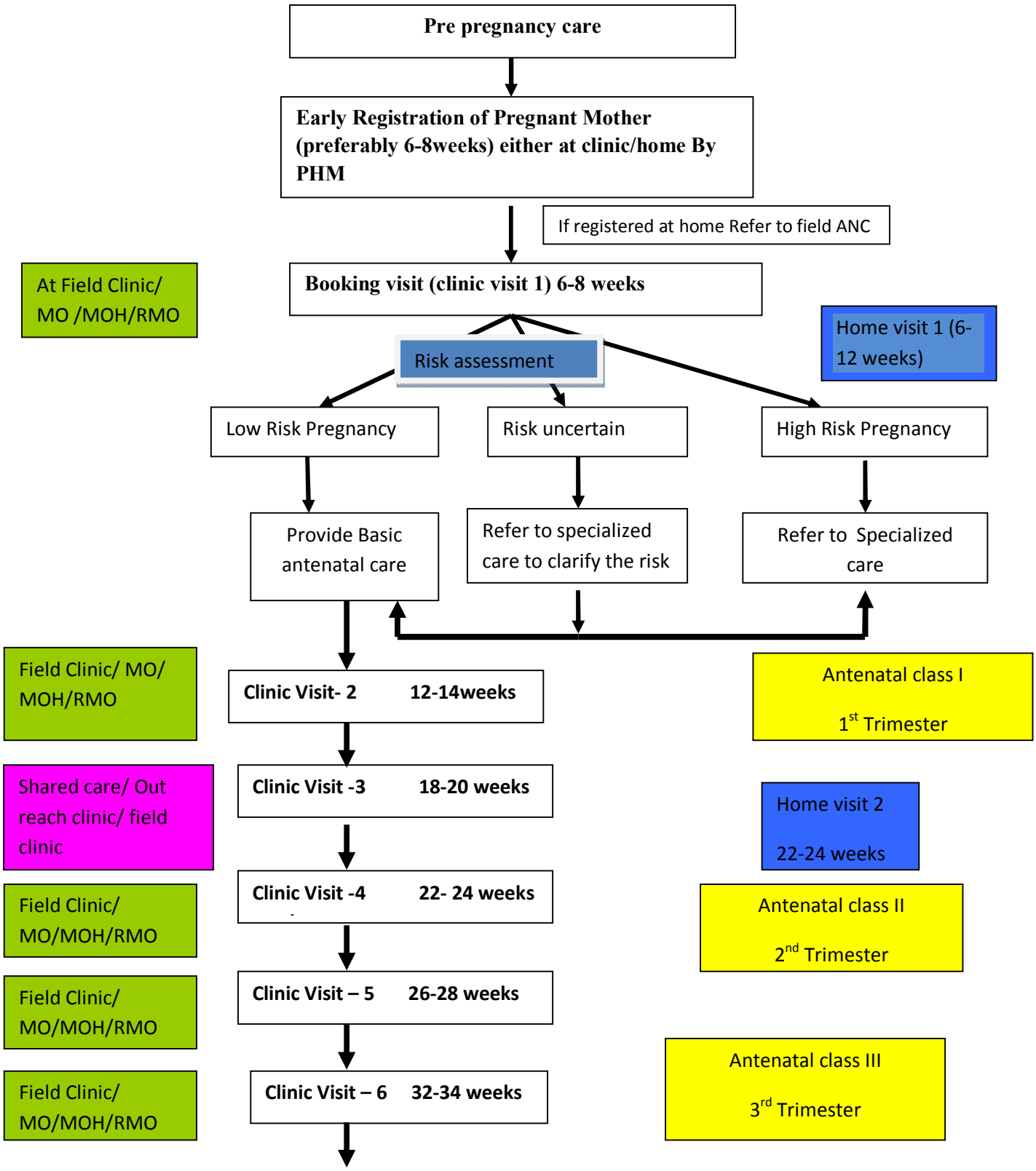
Antenatal care model currently used in Sri Lanka is the traditional multi-visit model; once a month up to 28weeks, fortnightly during 28-36weeks and weekly thereafter. The domiciliary care also follows the same model. Pregnant women are simultaneously receiving maternal care services at multiple settings eg. Field clinic, hospital clinic, specialized care unit, and some even visits to obstetricians in the private sector. Therefore, altogether pregnant woman received 12-18 clinic visits and 8-10 home visits during antenatal period as more than 90% of women registered for antenatal care before 12 weeks. Postnatal care model consists of two home visits during 1st 10 days, one visit between 11-28 days, and one visit around 42 days (altogether 4 visits). This model also includes a postnatal clinic visit at 4-6 weeks. However, in contrast to antenatal clinic and domiciliary care coverage which is almost universal, only 80% of women receive at least one postnatal home visit. Postnatal clinic care is not well established in the country.

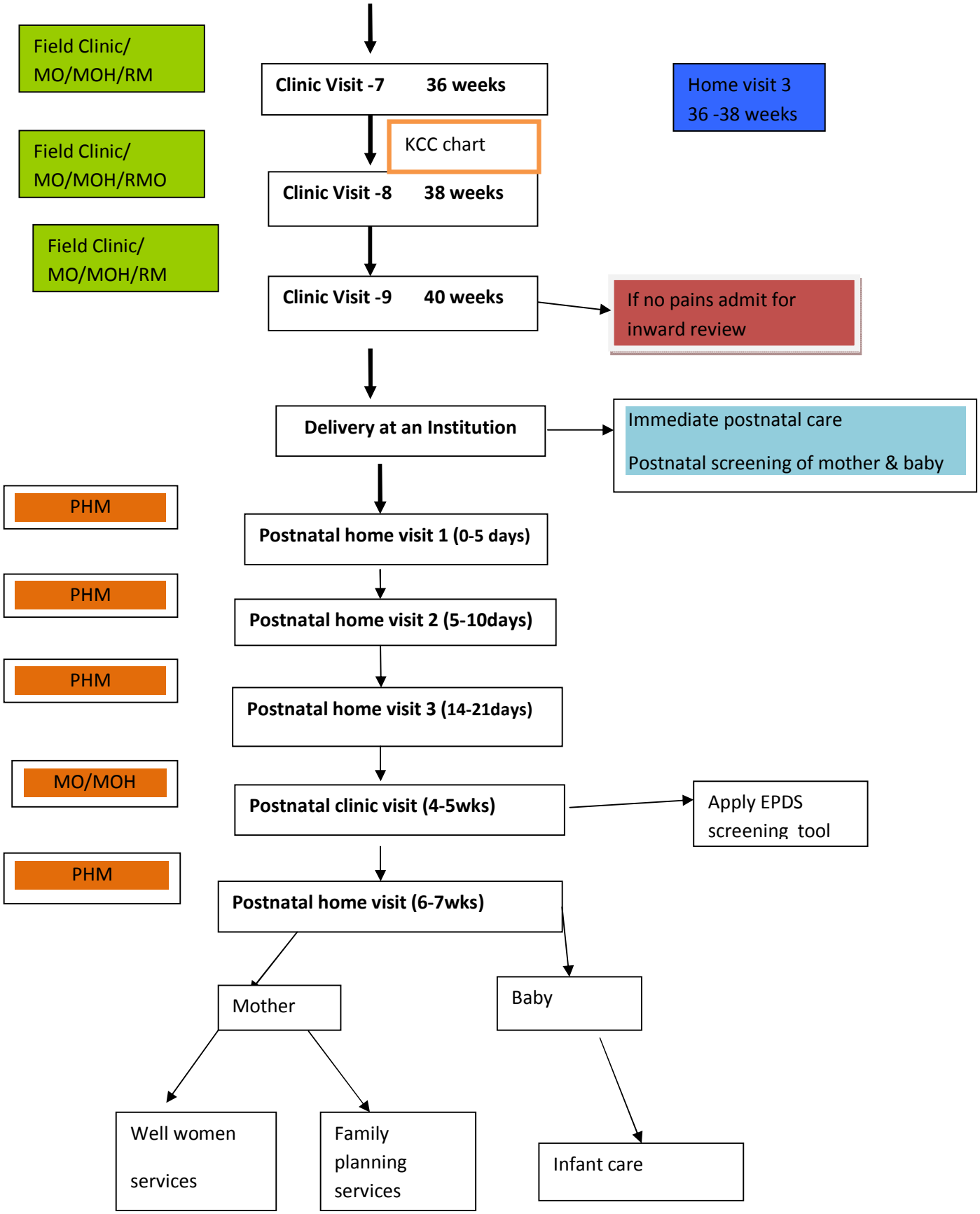
Though Sri Lanka has achieved effective service coverage in MCH/FP, the quality of service delivery needs further improvement in order to attain further reductions of maternal mortality and morbidity. Therefore, an external review of Maternal and New born Health in Sri Lanka was conducted in 2007 to identify the gaps in existing service delivery system. This review has identified the need to streamline the provision of maternal care and bring it into line with evidence based interventions with the objective of improving the quality of care and preventing the duplication of the services. Further, recommendations of National Maternal Mortality Reviews and District Maternal and Child Health Reviews also pointed out the need for revision to streamline the services and to address the gaps in service provision. Meanwhile, need of strengthening the integration of elimination of congenital syphilis (ECS) and prevention of mother to child transmission of HIV (PMTCT) programmes into maternal care programme was highlighted.

Therefore, Family Health Bureau in collaboration with Sri Lanka College of Obstetricians, and Gynecologists, WHO and UNICEF revised the existing service provision model of antenatal and postnatal care. Series of consultative meetings were held with the relevant stakeholders and reviewed available models in the world including WHO Antenatal care randomized trial and NICE guidelines. After considering the existing health policies and health care system in the country, achievements and gaps, ability of packaging evidence based interventions, client and service providers' satisfaction, development in transport and communication, cost effectiveness and expectation of the public, the following model was developed to deliver evidence based interventions to reduce maternal and child mortality and mortality.

Proposed Maternal Care Model

Domiciliary and clinic care




Field Clinic/ MO/MOH/RM
Clinic Visit -7 36 weeks
Home visit 3 36 -38 weeks
Field Clinic/ MO/MOH/RMO
KCC chart
Clinic Visit -8 38 weeks
Field Clinic/ MO/MOH/RM
Clinic Visit -9 40 weeks
If no pains admit for inward review
Delivery at an Institution
Immediate postnatal care
Postnatal screening of mother & baby
PHM
Postnatal home visit 1 (0-5 days)
PHM
Postnatal home visit 2 (5-10days)
PHM
Postnatal home visit 3 (14-21days)
MO/MOH
Postnatal clinic visit (4-5wks)
Apply EPDS screening tool
PHM
Postnatal home visit (6-7wks)
Mother
Baby
Well women services
Family planning services
Infant care

Antenatal Care

Chapter 04

ANTENATAL CARE

All eligible couples should be registered in the eligible couple register (H 526) by the area PHM. All the women who are getting pregnant are assumed to have pre-pregnancy care (Rubella immunization, preconception folic acid supplementation, screening for medical condition and nutritional assessment and if required necessary family planning services). During pre pregnant care, couples should be educated regarding pregnancy symptoms and importance of early initiation of antenatal care. They should be educated when to and how to inform PHM once they get pregnant. These services should be provided through women's health program and family planning program. In Sri Lanka, antenatal care provides through clinic care and domiciliary care.

The main objective of antenatal care is to monitor the health of the pregnant mother as well as the health and development of the fetus. Antenatal care helps to screen for possible adverse conditions during pregnancy and to predict problems with pregnancy, labour or birth. Therefore, they can be either prevented, or manage efficiently. It also helps to initiate a plan for continuing care during pregnancy and post partum period.

Antenatal care consists of:

1. Assessment: Maternal risk factors, Ongoing assessment of maternal and fetal well-being and screening for maternal complications
2. Care provision
3. Health promotion

Antenatal care at the clinic

Following the registration at the clinic or at home, pregnant mother should receive the clinic antenatal care as early as possible, preferably around 6-8 weeks of gestation. The officers who provide antenatal care should follow the General Circular No. 01-25/2004 issued by the Director General of Health Services on 14th September 2004 on antenatal care Each antenatal clinic visit should be objective. All findings of the clinic antenatal care should be entered on the Pregnancy Record (H512 A and B) by the officer who performs the examination. Designation of the officer who performs the obstetric examination should enter in the relevant cage in both H 512 A & B. The services which should be provided at each clinic visits are mentioned below.

Booking Visit 6-8 weeks

Objectives of the visit

1. To provisional establishment of pregnancy (either clinically/ with laboratory testing)
2. To assess medical and obstetric risk factors and take necessary actions
3. To assess the psychological/nutritional status and take necessary actions
4. To provide necessary care and health promotion
5. Screening for anaemia, syphilis and testing for blood group and Rh
6. Check for dental conditions and appropriate referral
7. Examination of heart to identify heart diseases

When mother is registered at the clinic, PHM should visit her home within 12 weeks of POA as described in the section on domiciliary care.

During booking Visit/First visit all pregnant mothers must be seen by a medical officer (MOH/AMOH/MO)

If MOH/MO is not available in the first visit, the closest clinic date should be given to the mother for the next visit. A medical officer should examine all the pregnant women.

a) **Obtain information on:**

Personal history

- Name
- Age (date of birth)
- Address and telephone number
- Marital status and duration
- History of consanguinity
- Educational level: primary, secondary, university
- Economic resources: employed? (Salaried work or short-term?)
- Type of occupation of mother and husband
- Substance abuse: alcohol or drugs (husband & wife)
- Domestic Violence
- Availability of a responsible person at home in an emergency
- Mode of transport in an emergency
- Closest EMOC facilities –the distance/ transport facility

Medical history (Past and present)

- Specific diseases and conditions: tuberculosis, heart disease, chronic renal/hepatic disease, epilepsy, diabetes mellitus, hypertension, psychiatric illnesses and any chronic diseases
- STIs
- HIV status, if known to be positive please follow the guidelines (page 114) without entering into the pregnancy record.
- Other specific conditions depending on prevalence in area (for example, hepatitis, malaria, Thalaseamia)
- Other diseases; past or chronic; allergy(-ies)
- Operations other than caesarean sections (heart/ lung surgeries)
- Past blood transfusions, Rhesus (D) antibodies
- Current use of medicines – specify
- Period of infertility: when? duration, cause(s), specialized treatment taken for difficulties in conceiving eg. Ovulation induction, IVF etc.

Family History

- Diabetes mellitus
- Hypertension/ PIH
- Twins
- Congenital abnormalities

History of present pregnancy

- Date of last menstrual period (LMP)
- Certainty of dates (by regularity, cycle length, accuracy of recall and other relevant information)
- Habits: smoking/chewing tobacco, alcohol, drugs (frequency and quantity)
- Any other concerns with regards to pregnancy (pain, vaginal bleeding, and excessive vomiting other: specify)
- History of malaria attacks- when was the last attack
- Any other discomforts

Contraceptive history

- Method use
- When it was started
- When it was stopped
- Method failure or not

Obstetric history (review all the available records, diagnostic cards, clinic records etc.)

- Number of previous pregnancies.
- Date (month, year) and outcome of each event (live birth, stillbirth, abortion, ectopic, hydatidiform mole). Specify (validate) preterm births and type of abortion, if applicable and possible.
- Birth weight (if known)
- Sex of the child
- Periods of exclusive breast-feeding: For how long?
- Did she have any feeding difficulties in previous pregnancies?
- Special maternal complications and events in previous pregnancies; specify which pregnancy (- ies), validate by records (if possible):

    - Recurrent early abortion, induced abortion and any associated complications
    - Thrombosis, embolus
    - Hypertension, pre-eclampsia or eclampsia
    - Gestational diabetes
    - Placenta praevia/ APH
    - Liver disease/fatty liver
    - Breech or transverse presentation
    - Obstructed labour, including dystocia
    - Third-degree tears
    - Retained placenta
    - Post partum haemorrhage
    - Puerperal sepsis
    - Anesthetic complications

Obstetrical interventions

- Cervical cerclage (Shirodkar Suturing)
- Caesarean section (indication, if known)
- Forceps or vacuum extraction

- Manual/instrumental help in vaginal breech delivery
- Manual removal of the placenta.
- Dilatation and evacuation (D&E) or dilatation and curettage (D&C)

Special perinatal (fetal, newborn) complications and events in previous pregnancies
specify which pregnancy(- ies), validate by records (if possible):

- Twins or higher order multiples
- Low birth weight: <2500 g/ 2500-2000g / 1999- 1500g/ <1500g
- Intrauterine growth retardation (if validated)
- Rhesus-antibody affection (erythroblastosis, hydrops)
- Malformed or chromosomally abnormal child
- Macrosomic (>3500g) newborn
- resuscitation or other treatment of newborn (SCBU and NICU admissions)/ ventilation
- perinatal, intrapartum, neonatal or infant death (also: later death)
- Feeding problems

b) **Perform clinical examination**

- Record weight (Kg) and height (metres) (page 71)
- Calculate BMI using BMI chart/cycle (page 71)and record it in pregnancy record
- Check for signs of severe anaemia: pale complexion, fingernails, conjunctiva, oral mucosa and shortness of breath
- Look for edema (ankles, fingers, face and abdoman)
- Do a general examination: Look for thyroid diseases, dental hygiene, deformities spinal/pelvic, icterus, cyanosis, clubbing
- Measure blood pressure and record (Page 75)
- Auscultate heart and chest: Heart sounds, murmurs and abnormal breathing sounds
- Perform obstetric examination (page 76)
- Perform breast examination if needs (lumps, nipple problems)

c) **Perform following tests**

- Urine: Check for glucose (Benedicts test) and protein (coagulation test) or if available use urine test strips for protein and sugar (page 81)
- VDRL testing as a screening test of Syphilis (page 83)
- Blood group and Rh (Should be done through government sector)
- Check Haemoglobin at first visit using colour scale/ any other method (page 84)

(Discuss with the nearest hospital with laboratory facilities to test Hb. This will be more accurate method than colour scale)

- If there are risk factors (BMI above 25kg/m2, previous baby weighing 3.5kg or above, previous gestational diabetes, first degree relative with diabetes) do PPBS, if the value is more than 120mg/dl, refer for OGTT in a specialized unit

d) **Implement the following interventions**

- If any risk is identified, act according to the guidelines (page 41)
- If woman is on treatment for diabetes, hypertension, epilepsy, psychiatric disease or any other disease refer them to the relevant clinics for continuous treatment
- Mothers without high risk conditions should be offered basic antenatal care
- Folic acid (5mg daily) supplementation
- Nutritional supplementation (2 packets of Triposha/CSB for all mothers)
- Ask to seek medical advise if having vaginal bleeding, severe vomiting or abdominal pain or any other concerns

e) **Discuss and understand**:

Give the pregnant woman an opportunity to discuss issues and ask questions: time for free communication

- On whom to communicate or where to go in case of bleeding, abdominal pain and any other emergency, or when in need of other advice (page 65)
- On issues related to sexual relationship and activities
- Nutrition during pregnancy (page 85)
- Minor ailments and their management during early pregnancy (page 91)
- Advise the woman to participate with the husband or any other care giver for antenatal classes where they can learn how to deal with a pregnancy (page)

f) **Schedule next appointment:**

Plan second clinic visit at 12-14 weeks of POA. State the date and time
Confirm the date for antenatal classes

This should be written in the pregnancy record (512A) and in the clinic's appointment book if available.

g) **Maintain complete records**

Complete clinic records.
Complete the Pregnancy record.
Give the record to mother and advice her to bring it with her to all appointments with any health services. .

Second Clinic Visit- 12-14 weeks

Objectives of the visit

1. To assess the progression of pregnancy
2. To assess the risk conditions and take necessary actions
3. To see the results of the tests and take necessary actions
4. Tetanus toxoid immunization
5. To give Antihelminthic treatment
6. To start micronutrient supplementation (Iron, folic acid, Vit C and calcium lactate)
7. To provide necessary care and health promotion
8. To discuss the birth and emergency plan

a) Obtain information on:

Personal/ social history

- Note any changes since first visit.
- Domestic difficulties: disharmony, violence etc
- Change of home environment
- Change of duty station or occupation of wife or husband

Medical history

- Review relevant issues of medical history as recorded at first visit.
- Note intercurrent diseases, injuries, or other conditions since first visit.
- Review intake of medicines, other than folic acid
- Folic acid intake: check compliance.
- Note other medical consultations, hospitalization or sick-leave since last visit.

Obstetric history

- Review relevant issues of obstetric history as recorded at first visit.

Present pregnancy

- Record symptoms and events since first visit: e.g. pain, bleeding, vaginal discharge, signs and symptoms of severe anaemia
- Other specific symptoms or events.
- Note abnormal changes in body features or physical capacity (e.g. peripheral swelling, shortness of breath with mild exertion) observed by the woman herself, by her partner, or other family members.
- Review, discuss and record the results of all screening tests undertaken

b) Perform physical examination

- Weigh the mother and plot the weight gain in the chart (page 73), Look for deviations of the expected weight gain

- Measure blood pressure and record. Respond accordingly (page 75)
- Look for other alarming signs of disease: gross oedema of feet, facial oedema, pallor, jaundice (icterus), cyanosis, shortness of breathing with mild exertion
- Perform abdominal examination- compare the fundal height with POA , look for abdominal masses (page 76)

c) Perform the following tests:

- Repeat Hb% if signs and symptoms of severe anaemia are detected on examination
- Check urine for protein using coagulation test

d) Assess for referral

- Reassess whether the woman can still follow the basic component of the antenatal care based on evidence since first visit and observations at present visit.
- Any new symptoms of recent onset: refer as required (page 41).
- If complain of bleeding per vagina: refer for evaluation

e) Implement the following interventions:

- Tetanus toxoid immunization (page 107).
- Start iron folate supplementation with Vit C and calcium supplementation (page 100) if mother does not have vomiting or loss of appetite. Advice not to take iron and calcium together (iron at night and calcium in the morning before/after meal.)
- Malaria prophylaxis to be decided by MOH according guidelines issued by AMC (page 145)
- Nutritional supplementation (Triposha/CSB 2 packets)
- Ask to seek medical advice if having vaginal bleeding or abdominal pain or any other symptom
- If risk conditions are identified, refer them to the specialized care

f) Advice, questions and answers, and scheduling the next appointment

- Create an opportunity to discuss issues and ask questions
- Offer verbal information supported by antenatal classes and written information (booklets, leaflets etc.)
- Give advice on whom to call or where to go in case of bleeding, abdominal pain or any other emergency, or when in need of other advice. This should be confirmed in writing (e.g. on the pregnancy record) as at first visit (page 65)
- Discuss and write down the birth plan
- Schedule the third visit at 18-20 weeks either at field clinic or at specialist clinic depending on the local policy.
- Advice to write down the date of quickening
- Confirm the date for antenatal class II

g) Maintain complete records

Complete clinic records and pregnancy record. Give the record to mother and advise her to bring it with her to all appointments with any health services.

Visit 3 (18-20 weeks)

This visit may be either at field clinic or at specialist clinic or at out reach clinic.

Objectives of this visit in a field clinic

1. To assess the progression of pregnancy
2. To assess the risk conditions and take necessary actions
3. For primies, to give second dose of tetanus Toxoid
4. To provide necessary care and health promotion
5. To Examine the heart to identity abnormalities

Objectives of the visit in a specialist clinic

1. To confirm dates and placental position
2. To serve as a booking visit for delivery
3. To assess the progression of pregnancy
4. To assess the risk conditions and take necessary actions

a) Obtain information on:

Personal history

- Note any changes since last visit.
- Domestic difficulties : disharmony, violence etc.

Medical history

- Review relevant issues of medical history as recorded at last visit.
- Note intercurrent diseases, injuries, or other conditions since last visit.
- Review intake of medicines, other than ironfolate and calcium
- Ironfolate, Vit C and calcium: check compliance.
- Note other medical consultations, hospitalization or sick-leave since last visit.
- Check compliance with other advice given during last visit

Obstetric history

- Review relevant issues of obstetric history as recorded at last visit.

Present pregnancy

- Record symptoms and events since last visit: e.g. pain, bleeding, vaginal discharge, signs and symptoms of severe anaemia
- Other specific symptoms or events.
- Note abnormal changes in body features or physical capacity (e.g. peripheral swelling, shortness of breath with mild exertion), observed by the woman herself, by her partner, or other family members.
- Fetal movements: whether felt or not. Note the date of first recognition in pregnancy record.
- Review, discuss and record the results of all tests undertaken.

b) Perform physical examination

- Weigh the mother and plot the weight gain in the chart – look for deviations of the expected rise (page 73)
- Measure blood pressure and record. Respond accordingly (page 75)
- Look for generalized oedema and pallor.
- Recheck heart and lungs and listen for heart sounds, murmurs and abnormal breathing sounds
- Measure SFH and record (page 76).
- Other alarming signs of disease: gross oedema of feet, facial oedema, pallor, jaundice (icterus), cyanosis, shortness of breathing with mild exertion

c) Perform the following tests:

- Repeat Hb % if signs and symptoms of anaemia are detected on examination or on treatment for anaemia
- Check urine for protein using coagulation test

d) Assess for referral

- Reassess whether the woman can still follow the basic component of the antenatal care, based on evidence since last visit and observations at present visit.
- Any new symptoms of recent onset: refer as required (page 41).
- If complain bleeding per vagina: refer for evaluation

e) Implement the following interventions:

- For primies give second dose of Tetanus toxoid immunization (page 107).
- Give malaria prophylaxis if needed (page 145)
- Continue micronutrient supplementation
- Give nutrition supplementation

f) Advice, questions and answers, and scheduling the next appointment

- Give an opportunity to discuss issues and ask questions
- Offer verbal information supported by antenatal classes and written information (booklets, leaflets etc.)
- Give advice on whom to call or where to go in case of bleeding, abdominal pain or any other emergency, or when in need of other advice. This should be confirmed in writing (e.g. on the antenatal card), as at second visit
- Discuss the birth plan and make changes if any.
- Schedule the forth visit at 22-24 weeks

g) Maintain complete records

- Complete clinic records.
- Complete Pregnancy record. Give the record to mother and advise her to bring it with her to all appointments with any health services.

Clinic Visit 4 (22-24 weeks)

Objectives of the visit

1. To assess the progression of pregnancy
2. To screen for risk factors and take necessary actions
3. To provide necessary care and health promotion

a) Obtain information on:

Personal history

- Note any changes since last visit
- Domestic difficulties : disharmony, violence etc.

Medical history

- Review relevant issues of medical history as recorded at last visit.
- Note intercurrent diseases, injuries, or other conditions since last visit.
- Review intake of medicines, other than iron folate, Vit C and calcium
- Ironfolate, Vit C and calcium: check compliance.
- Note other medical consultations, hospitalization or sick-leave since last visit.
- Check compliance with other advice given during last visit

Obstetric history

- Review relevant issues of obstetric history as recorded at last visit.

Present pregnancy

- Look for symptoms and events since last visit: e.g. pain, bleeding, vaginal discharge (amniotic fluid?), signs and symptoms of severe anaemia.
- Other specific symptoms or events.
- Note abnormal changes in body features or physical capacity (e.g. peripheral swelling, shortness of breath with mild exertion), observed by the woman herself, by her partner, or other family members.
- Review, discuss and record the results of all screening tests undertaken.

b) Perform physical examination

- Weigh the mother and plot the weight gain in the chart, look for deviations of the expected rise- consider macrosomia and IUGR, if suspect, refer (page 73)
- Measure blood pressure and record. Respond accordingly (page 75)
- Look for generalized oedema and pallor.
- Measure SFH , record, interpret and take necessary action if any deviation from expected (page 76).

- Ask about FM and listen for FHS and record.
- Other alarming signs of disease : gross oedema of feet, facial oedema, pallor, jaundice (icterus), cyanosis, shortness of breathing with mild exertion

c) Perform the following tests:

- Check urine for proteinuria
- Repeat Hb % if signs and symptoms of anaemia are detected on examination or on treatment for anaemia

d) Assess for referral

- Reassess whether the woman can still follow the basic component of the antenatal care, based on evidence since last visit and observations at present visit.
- Any new symptoms of recent onset: refer as required (page 41).
- If complain bleeding per vagina, refer for evaluation**.**
- Suspicion of fetal growth retardation (uterine height values below expected or indicative of poor growth as evidenced by the chart curve): refer
- If uterine height (SFH) is above expected: refer for evaluation.
- Suspicion of twins: Refer for confirmation and plan for delivery.

e) Implement the following interventions:

- Give malaria prophylaxis if needed (page 145)
- Continue micronutrient supplementation
- Give nutrition supplementation

f) Advice, questions and answers, and scheduling the next appointment

- Give an opportunity to discuss issues and ask questions
- Offer verbal information supported by antenatal classes and written information
- Give advice on whom to call or where to go in case of bleeding, abdominal pain or any other emergency, or when in need of other advice. This should be confirmed in writing (e.g. on the antenatal card), as at last visit (page 65).
- Discuss the birth plan and make changes if any.
- Schedule the fifth visit at 26-28 weeks

g) Maintain complete records

- Complete clinic records.
- Complete Pregnancy record. Give the record the mother and advise her to bring it with her to all appointments with any health services

Clinic Visit 5 (26-28 weeks)

Objectives of the visit

1 To assess the progression of pregnancy
2 To screen for risk factors and take necessary actions
3 To screen for gestational diabetes
4 To screen for anaemia
5 To provide necessary care and health promotion

a) Obtain information on:

Personal history

- Note any changes since last visit.
- Domestic difficulties : disharmony, violence etc.

Medical history

- Review relevant issues of medical history as recorded at last visit.
- Note intercurrent diseases, injuries, or other conditions since last visit.
- Review intake of medicines, other than iron folate, Vit C and calcium
- Ironfolate, Vit C and calcium: check compliance.
- Note other medical consultations, hospitalization or sick-leave since last visit.
- Check compliance with other advice given during last visit

Obstetric history

- Review relevant issues of obstetric history as recorded at last visit.

Present pregnancy

- Look for symptoms and events since last visit: e.g. pain, bleeding, vaginal discharge, signs and symptoms of severe anaemia.
- Other specific symptoms or events.
- Note abnormal changes in body features or physical capacity (e.g. peripheral swelling, shortness of breath with mild exertion), observed by the woman herself, by her partner, or other family members.
- Review, discuss and record the results of all screening tests undertaken.

b) Perform physical examination

- Weigh the mother and plot the weight gain in the chart, look for deviations of the expected rise- consider macrosomia and IUGR, if suspect refer (page 73)
- Measure blood pressure and record. Respond accordingly (page 75)
- Look for generalized oedema and pallor.

- Measure SFH , record, interpret and take necessary action if any deviation from expected (page 76).
- Ask about FM and listen for FHS and record.
- Other alarming signs of disease : gross oedema of feet, facial oedema, pallor, jaundice (icterus), cyanosis, shortness of breathing with mild exertion

c) Perform the following tests:

- Check urine for proteinuria all mothers
- Screen all pregnant women for anaemia
- All pregnant mothers should screen for GDM using PPBS (cut off 120mg/dl). For further details see page 110)

d) Assess for referral

- Reassess whether the woman can still follow the basic component of the antenatal care, based on evidence since last visit and observations at present visit.
- Any new symptoms of recent onset: refer as required (page 41).
- If complain bleeding per vagina : Refer for evaluation
- Suspicion of fetal growth retardation (uterine height values below expected or indicative of poor growth as evidenced by the chart curve): refer
- If SFH is above the expected: refer for evaluation
- Suspicion of twins: Refer for confirmation and plan for delivery.

e) Implement the following interventions:

- Give malaria prophylaxis if needed
- Continue micronutrient supplementation
- Give nutrition supplementation

f) Advice, questions and answers, and scheduling the next appointment

- Give an opportunity to discuss issues and ask questions
- Offer verbal information supported by antenatal classes and written information
- Give advice on whom to call or where to go in case of bleeding, abdominal pain or any other emergency, or when in need of other advice. This should be confirmed in writing (e.g. on the antenatal card), as at last visit (page 65).
- Discuss the birth plan and make changes if any.
- Schedule the sixth visit at 32 - 34 weeks
- Confirm the date for antenatal class III

g) Maintain complete records

- Complete clinic records.
- Complete Pregnancy record. Give the record the mother and advise her to bring it with her to all appointments with any health services

Clinic Visit 6 (32-34 weeks)

Objectives of the visit

1. To assess the progression of pregnancy
2. To assess the risk conditions and take necessary actions
3. Review the SFH chart and weight gain chart to ascertain the fetal growth
4. To look out for signs of PIH, IUGR, macrosomia, polyhydroamnios
5. To ascertain the lie and presentation
6. To provide necessary care and health promotion
7. To reevaluate the birth plan
8. To examine the heart to detect any abnormalities

a) Obtain information on:

Personal history

- Note any changes since last visit.
- Domestic difficulties : disharmony, violence etc.

Medical history

- Review relevant issues of medical history as recorded at last visit.
- Note intercurrent diseases, injuries, or other conditions since last visit.
- Review intake of medicines, other than ironfolate, Vit C and calcium
- Ironfolate, Vit C and calcium: check compliance.
- Note other medical consultations, hospitalization or sick-leave since last visit.
- Check compliance with other advice given during last visit

Obstetric history

- Review relevant issues of obstetric history as recorded at last visit.

Present pregnancy

- Look for symptoms and events since last visit: e.g. abdominal or back pain (preterm labour?), bleeding, vaginal discharge (amniotic fluid?), signs and symptoms of severe anaemia.
- Any other specific symptoms or events.
- Note abnormal changes in body features or physical capacity (e.g. peripheral swelling, shortness of breath with mild exertion), observed by the woman herself, by her partner, or other family members.
- Ask for fetal movements
- Review, discuss and record the results of all tests undertaken.

b) Perform physical examination

- Weigh the mother and plot the weight gain in the chart look for deviations of the expected rise- consider macrosomia and IUGR, if suspect refer (page 73)
- **Recheck heart and lungs and listen for heart sounds, murmurs and abnormal breathing sounds**
- Measure blood pressure and record. Respond accordingly (page 75)
- Look for generalized oedema and pallor.
- Measure SFH, record, interpret and take necessary action if any deviation from expected (page 76)
- Ask about FM and listen for FHS and record
- **Look for Lie and Presentation.**
- Other alarming signs of disease: gross oedema of feet, facial oedema, pallor, jaundice (icterus), cyanosis, shortness of breathing with mild exertion

c) Perform the following tests:

- Check urine for proteinuria
- Repeat Hb % if signs and symptoms of anaemia are detected on examination or on treatment for anaemia

d) Assess for referral

- Reassess whether the woman can still follow the basic component of the antenatal care, based on evidence since last visit and observations at present visit.
- Any new symptoms of recent onset: refer as required (page 41).
- If complain bleeding per vagina or vaginal discharge: refer for evaluation
- Suspicion of fetal growth retardation (uterine height values below expected or indicative of poor growth as evidenced by the chart curve): refer
- If SFH is above expected: refer for evaluation
- Suspicion of twins: Refer for confirmation and plan for delivery.
- If transverse lie or breech presentation: refer for evaluation

e) Implement the following interventions:

- Give malaria prophylaxis if needed (page145)
- Continue micronutrient supplementation
- Give nutrition supplementation

f) Advice, questions and answers, and scheduling the next appointment

- Give an opportunity to discuss issues and ask questions
- Offer verbal/ written information supported by antenatal classes
- Give advice on measures to be taken in case of pain, dribbling and bleeding (page 65)
- Reconfirm the written information on whom to call and where to go in case of emergency (page 65).

- Plans to ensure transport is available in case of an emergency (page 65).

- Discuss the birth plan and make changes if any.
- Provide recommendations on breast feeding, family planning and post partum care.
- Schedule the seventh visit at 36 weeks

g) Maintain complete records

- Complete clinic records.
- Complete Pregnancy record. Give the record the mother and advise her to bring it with her to all appointments any health services.

Clinic Visit 7 (36 weeks)

Objectives of the visit

1. To assess the progression of pregnancy
2. Review the SFH chart and weight gain chart to ascertain the fetal growth
3. To assess the risk conditions and take necessary actions
4. To ascertain the lie and presentation
5. To introduce kick count chart
6. To look out for signs of PIH, IUGR
7. To provide necessary care and health promotion
8. To reevaluate the birth plan

a) Obtain information on:

Personal history

- Note any changes since last visit.
- Domestic difficulties : disharmony, violence etc.

Medical history

- Review relevant issues of medical history as recorded at last visit.
- Note intercurrent diseases, injuries, or other conditions since last visit.
- Review medications other than ironfolate, Vit C and calcium
- Ironfolate, Vit C and calcium: check compliance.
- Note other medical consultations, hospitalization or sick-leave since last visit.
- Check compliance with other advice given during last visit

Obstetric history

- Review relevant issues of obstetric history as recorded at last visit.

Present pregnancy

- Look for symptoms and events since last visit: e.g. abdominal or back pain (preterm labour?), bleeding, vaginal discharge (amniotic fluid?), signs and symptoms of severe anaemia.
- Other specific symptoms or events.
- Note abnormal changes in body features or physical capacity (e.g. peripheral swelling, shortness of breath with mild exertion), observed by the woman herself, by her partner, or other family members.
- Ask for reduced fetal movements
- Review, discuss and record the results of all tests undertaken.

b) Perform physical examination

- Weigh the mother and plot the weight gain in the chart look for deviations of the expected rise- consider macrosomia and IUGR, if suspect refer
- Measure blood pressure and record. Respond accordingly
- Look for generalized oedema (especially facial) and pallor.
- Measure SFH , record, interpret and take necessary action if any deviation from expected.
- Ask about FM and listen for FHS and record
- **Check for presentation and fetal lie (head, breech, transverse) and record**
- Other alarming signs of disease: gross oedema of feet, facial oedema, pallor, jaundice (icterus), cyanosis,shortness of breathing with mild exertion

c) Perform the following tests:

- Check urine for proteinuria
- Repeat Hb % if signs and symptoms of anaemia are detected on examination or on treatment for anaemia

d) Assess for referral

- Reassess whether the woman can still follow the basic component of the antenatal care, based on evidence since last visit and observations at present visit.
- Any new symptoms of recent onset: refer as required .
- If complained of bleeding per vagina or vaginal discharge, refer for evaluation.
- Suspicion of fetal growth retardation (uterine height values below expected or indicative of poor growth as evidenced by the chart curve): refer
- If SFH is above the expected : refer for evaluation.
- Suspicion of breech presentation or abnormal lie: Refer for specialized care

e) Implement the following interventions:

- Give malaria prophylaxis if needed
- Continue micronutrient supplementation

- Give nutrition supplementation
- Introduce the kick count charts (KCC) and give clear guidance to maintain the chart (page 80)

f) Advice, questions and answers, and scheduling the next appointment

- Give an opportunity to discuss issues and ask questions
- Offer verbal information supported by antenatal classes and written information
- Re-emphasis the signs and symptoms of labour
- Re-confirm the written information on whom to call and where to go in case of emergency
- Plans to ensure transport is available in case of an emergency.
- Discuss the birth plan and make changes if any.
- If experience of reduced fetal movement, advice mother to get admit to the hospital immediately.
- Provide recommendations on breast feeding, family planning and postpartum care (page 172).
- Schedule the eight visit at 38 weeks

g) Maintain complete records

- Complete clinic records.
- Complete Pregnancy record. Give the record the mother and advise her to bring it with her to all appointments with any health services.

Clinic Visit 8 (38 weeks)

Objectives of the visit

1. To assess the progression of pregnancy
2. To assess the risk conditions and take necessary actions
3. Re-evaluate presentation/ lie/ PIH/ SFH/ weight chart/ KCC
4. To provide necessary care and health promotion
5. To reevaluate the birth and emergency plan

a) Obtain information on:

Personal history

- Note any changes since last visit.
- Domestic difficulties: disharmony, violence etc.

Medical history

- Review relevant issues of medical history as recorded at last visit.
- Note intercurrent diseases, injuries, or other conditions since last visit.
- Review intake of medicines, other than iron, folate , calcium
- Ironfolate, Vit C and calcium: check compliance.
- Note other medical consultations, hospitalization or sick-leave since last visit.
- Check compliance with other advice given during last visit

Obstetric history

- Review relevant issues of obstetric history as recorded at last visit.

Present pregnancy

- Look for symptoms and events since last visit: e.g. abdominal or back pain (preterm labour?), bleeding, vaginal discharge (amniotic fluid?), signs and symptoms of severe anaemia.
- Other specific symptoms or events.
- Note abnormal changes in body features or physical capacity (e.g. peripheral swelling, shortness of breath with mild exertion), observed by the woman herself, by her partner, or other family members.
- Review, discuss and record the results of all tests undertaken.

b) Perform physical examination

- Weigh the mother and plot the weight gain in the chart, look for deviations of the expected rise- consider macrosomia and IUGR, if suspect refer
- Measure blood pressure and record. Respond accordingly
- Look for generalized oedema and pallor
- Measure SFH , record, interpret and take necessary action if any deviation from expected .
- Ask about FM and listen for FHS and record
- Check for presentation and fetal lie (head, breech, transverse) and record
- Other alarming signs of disease: gross oedema of feet, facial oedema, pallor, jaundice (icterus), cyanosis,shortness of breathing with mild exertion:

c) Perform the following tests:

- Check urine for proteinuria
- Repeat Hb % if signs and symptoms of anaemia are detected on examination or on treatment for anaemia

d) Assess for referral

- Reassess whether the woman can still follow the basic component of the antenatal care, based on evidence since last visit and observations at present visit.
- Any new symptoms of recent onset: refer as required.
- Suspicion of fetal growth retardation (uterine height values below expected or indicative of poor growth as evidenced by the chart curve): refer
- If SFH above the expected ; refer for evaluation.
- Suspicion of breech presentation or abnormal lie: Refer for specialized care

e) Implement the following interventions:

- Give malaria prophylaxis if needed
- Continue micronutrient supplementation
- Give nutrition supplementation

f) Advice, questions and answers, and scheduling the next appointment

- Give an opportunity to discuss issues and ask questions
- Offer verbal information supported by antenatal classes and written information
- Explain the signs and symptoms of labour and advice to get admitted to a hospital if she experience any
- Give advice on measures to be taken in case of labour.
- If no labour pains by 40 weeks ask her to get admitted to a specialized unit for assessment.
- If experience of reduced fetal movement, advice mother to get admit to the hospital immediately
- Reconfirm the written information on whom to call and where to go in case of emergency
- Ensure the plans to ensure transport, to whom accompany with her, money and items to be taken
- Discuss the birth plan and make changes if any.
- Provide recommendations on breast feeding, family planning and postpartum care
- Schedule the eighth visit at 40 weeks and explain her delivery may occur before the next clinic visit

g) Maintain complete records

- Complete clinic records.
- Complete Pregnancy record. Give the record the mother and advise her to bring it with her to all appointments with any health services.

Clinic Visit 8 (40 weeks)

Objectives of the visit

1. To ensure that the mother reaches the place of delivery in time
2. To assess the risk conditions and take necessary actions
3. To provide necessary care and health promotion

a) Obtain information on:

Personal history

- Note any changes since last visit.

Medical history

- Review relevant issues of medical history as recorded at last visit.
- Note intercurrent diseases, injuries, or other conditions since last visit.
- Review intake of medicines, other than ironfolate Vit C and calcium
- Ironfolate, Vit C and calcium: check compliance.
- Note other medical consultations, hospitalization or sick-leave since last visit.
- Check compliance with other advice given during last visit

Obstetric history

- Review relevant issues of obstetric history as recorded at last visit.

Present pregnancy

- Record symptoms and events since last visit: e.g. abdominal or back pain, bleeding, vaginal discharge (amniotic fluid?), signs and symptoms of severe anaemia.
- Other specific symptoms or events.
- Note abnormal changes in body features or physical capacity (e.g. peripheral swelling, shortness of breath with mild exertion), observed by the woman herself, by her partner, or other family members.

b) Perform physical examination

- Weigh the mother and plot the weight gain in the chart. Check the total weight gain.
- Measure blood pressure and record .Respond accordingly
- Look for generalized oedema and pallor.
- Measure SFH and record.
- Ask about FM and listen for FHS and record
- Check for presentation and fetal lie (head, breech, transverse) and record
- Other alarming signs of disease: gross oedema of feet, facial oedema, pallor, jaundice (icterus), cyanosis,shortness of breathing with mild exertion:

c) Perform the following tests:

- Check urine for proteinuria

d) Assess for referral

Refer to the hospital where delivery is planned to be taken place for assessment.

e) Implement the following interventions:

- Give malaria prophylaxis if needed
- Continue micronutrient supplementation
- Give nutrition supplementation
- **Ask her to get admit to the hospital for an indoor assessment**

f) Advice, questions and answers, and scheduling the next appointment

- Give an opportunity to discuss issues and ask questions
- Offer verbal information supported by antenatal classes and written information
- Give advice on danger signals (reduced fetal movements, bleeding PV, headache, shortness of breathing, severe chest pain, rapture of membranes and high fever)
- Give advice on measures to be taken in case of labour
- Reconfirm the written information on whom to call and where to go in case of emergency or ant other need.
- Plans to ensure transport is available in case of an emergency.

- Provide recommendations on breast feeding, family planning and post partum care.
- Ask her to go to the nearest hospital if labour signs and symptoms occurred, or if no labour pain after 40 weeks, ask her to go to specialized care unit.
- Advice to continue iron, folic acid, Vit C and calcium lactate for 6 months after delivery.
- Emphasis on following:
  - To inform the area PHM as soon as the mother came home after delivery
  - To attend the postpartum clinic after 4 weeks of delivery
  - To continue micronutrients for 6 months after delivery

g) Maintain complete records

- Complete clinic records.
- Complete Pregnancy record. Give the record the mother and advise her to bring it with her to all appointments with any health services.

Danger signals during pregnancy

Advise to go to the hospital **immediately, day or night, without waiting** if any of the following signs:

- Vaginal bleeding
- Convulsions
- Severe headaches with blurred vision
- Fever and too weak to get out of the bed.
- Severe abdominal pain/ epigastric pain /RHC pain
- Fast or difficult breathing
- Reduced fetal movements

She should go to the hospital as soon as possible if any of the following signs:

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

Dating Scan

Confirmation of dates is essential for early identification of IUGR. USS is the most reliable method of confirmation of dates. However the parameters used are depend on the POA.

11- 14 weeks of POA– Crown rump length
16- 20 weeks of POA – Head circumference

Chapter 5

MANAGEMENT OF RISK CONDITIONS AT FIELD LEVEL

Note:

- When a high risk pregnant woman receives her antenatal care from a specialized unit in a hospital, she should receive domiciliary care from the PHM. If she wish she can attend to the field clinics also.
- When pregnant women are not receiving micronutrients or food supplementations from the hospital clinic, they should be supplied from the field clinic.
- If high risk mothers are not receiving the specialized care, they should receive adequate care from the field clinic.
- If pregnant women have any problem they can attend to the field clinic disregarding the clinic appointment or risk condition
- All the high risk pregnant women should attend to the antenatal classes with their husbands

Risk Condition	Action to be taken
Past Obstetric History	
Previous stillbirth (antenatal or intrapartum) or neonatal loss or malformed babies	Refer at first visit Act according to the consultant Obstetricians instructions. Arrange targeted home visits by PHM Pay special attention for kick count chart after 36 weeks.
History of 2 or more consecutive first trimester miscarriages	Refer at first visit. Depending on the cause, MOH/ consultant Obstetricians can decide whether to continue as a risk mother or not Need to do a proper screening including genetic screening, thrombophilic screening at the specialized care unit
History of preterm delivery before 37weeks, or second trimester miscarriage	Refer at first visit. Act according to the Consultant Obstetricians instructions. Arrange targeted home visits by PHM

History of PIH, eclampsia/ pre-eclampsia	Refer at first visit. If there is a history of PIH only, no need to refer special care. Closely monitor the BP If there is H/O of pre eclampsia/Eclampsia, refer at the 1st visit for specialized care. Need close/ regular monitoring of BP If abnormally detected in BP, refer immediately
History of APH	If it is due to placenta previa, refer to specialized care at 18-20wks for scan to ascertain the position of the placenta as there is a risk of recurrence. Placental abruption: there is a possibility of recurrence. Refer at 1st visit. Correct the anaemia if detected. Ascertain blood group and Rh.
History of retained placenta	Correct aneamia if detected Check Blood group and Rh. Refer to consultant Obstetricians at 36 weeks for assessment. Plan for delivery in a CEmOC facility
History of postpartum haemorrhage	Correct aneamia if detected Check Blood group and Rh. Refer to consultant Obstetricians at 36 weeks for assessment. Plan for delivery in a CEmOC facility
History of cesarean section/ Myomectomy	All the women with history of LSCS or myomectomy should have a scan at 18-20 weeks to detect placental localization. Refer to specialized unit for this and to get specialized advice regarding delivery. Need to be admit to an institution with CEmOC facilities by 38weeks If she gets pain need to admit to the hospital in fasting state
History of surgery on reproductive tract (removal of septum, cone biopsy, large loop excision of transformational zones (LLETZ),	Refer for specialist care at first visit for a scan. Act according to the consultant obstetrician's instructions
History of a birth with birth weight < 2500g	Refer for specialist care at first visit.
History of a birth with weight > 3500g	Do a PBBS and if the result is > 120mg/dl refer to specialist clinic for OGTT.

	Act according to the consultant Obstetricians instructions.
History of IUGR	Refer for specialist care at first visit. They will need accurate dating scan before 14 weeks and regular USS with growth charts. Act according to the consultant Obstetricians instructions.
History of Feeding difficulties/ breast surgery	MOH should identify reasons and plan for appropriate interventions at last trimester
Present pregnancy	
Age less than 20yrs	If less than 18 years refer to specialized care. 18-20yrs MOH / MO who provide antenatal care should monitor closely.
Advanced maternal age (Age >35yrs)	Need more close monitoring by MOH as more prone to Hypertension, Diabetes Mellitus etc Refer necessary cases such as sub fertile mothers, elderly primies, NCD complicating pregnancies to specialized care
Height < 145cm	Refer to a specialist unit at last trimester for an assessment. To be delivered in a CEmOC facility
BMI < 18.5kg/m^2	MOH should manage according to the given guidelines. MOH should monitor the intra uterine growth of the fetus using SFH and maternal weight gain
BMI 25 -29.9kg/ m^2	MOH should monitor the intra uterine growth of the fetus using SFH and maternal weight gain.
BMI ≥30kg/ m^2	MOH should thoroughly screen for Hypertension, PIH, Diabetes mellitus. Refer to specialist unit for OGTT. Closely monitor the weight gain and SFH to detect Macrosomia and polyhydroamnios Ascertain the lie after 36weeks Manage according to instruction given.
Primigravida	MOH should manage her at his field clinic if there are no other risk factors. During third trimester look for lie, presentation and head engagement.

Parity (5 or more)	Refer to specialist care at first visit. Correct anaeamia if her Hb level is < 11g/dl. Need special counseling for Family Planning. Try to identify social problems if any Plan delivery at CEmOC facility
Multiple pregnancy	If suspected, refer as early as possible to specialized care
Diastolic blood pressure more than 90mmHg	Admit to a nearest hospital for monitoring for 24 hours, if BP persists above 90mm Hg, transfer to CEMOC facility (refer management guidelines of PIH in the field).
Diastolic > 110mmHg or systolic 160 mmHg or more	admit urgently to the nearest hospital manage according to guidelines and transfer immediately to a CEmOC facility
Vaginal bleeding (any time)	Admit to the nearest hospital for assessment and management If need, refer to a specialist unit
Maternal jaundice	Admit to the nearest hospital to transfer specialized unit immediately.
Severe maternal anaemia (Hb% <7g/dl)	Need to admit to a specialized care unit for investigation and correction.
Maternal malaria	Admit to nearest hospital medical unit (manage according to AMC guideline)
Maternal Syphilis	Refer to STD clinic, as early as possible, Confidentiality should be strictly assured.
Maternal HIV	Refer to STD clinic, as early as possible, Confidentiality should be strictly assured.
Uncertain dates/ irregular periods	Need to refer specialized unit to ascertain the dates before 20 weeks. (USS is accurate for dating only before 20 weeks.)
Intra Uterine Growth Retardation (IUGR)	Refer to specialized care. They will need accurate dating and regular USS with growth charts. Need to plan for delivery at a CEmOC facility. POA of delivery also need to decide based on the specialist opinion

Mal-presentations and abnormal lie after 34 weeks	Refer to a specialized unit.
Other risk conditions	
Diabetes Mellitus/ Liver disease and renal diseases	Refer to a consultant Obstetrician. He/she will manage the pregnant woman with other relevant specialists.
Rheumatic and congenital heart disease	If there is a suspicion of having a murmur, refer to cardiologist for confirmation and diagnosis. After that refer to a consultant Obstetrician. He/she will manage the case with other relevant specialists. Diagnosed cases need to refer to consultant Obstetrician for combined care with a cardiologist.
Epilepsy	Refer to a consultant Obstetrician. He/she will manage the case with other relevant specialists (neurologist/ physician)
Mental disorders	Refer to a consultant Obstetrician. He/she will manage the case with other relevant specialists (psychiatrist/ MO mental health)
Asthma	Refer to a consultant Obstetrician. He/she will manage the case with other relevant specialists (general or chest physician)
Rh Negative mother	Refer to a consultant Obstetrician. Send a blood sample to the blood bank with special referral form for screening antibodies.
Sub fertility (inability to conceive irrespective of regular unprotected intercourse for 2 or more years)	Refer for specialized care
Social problems	
Unmarried mothers/ widows (single mothers), geographically marginalized and other social factors	Ensure social support (MOH/PHM) Social service officer, Grama Niladhari, Samurdhi officer etc. Targeted and more frequent home visits by PHM Link with social security programs

Chapter 06

DOMICILIARY CARE FOR LOW RISK PREGNANCIES

Domiciliary care for pregnant women is provided by the area PHM. At the time of registration as an eligible couple, PHM should give the screening questionnaire for newly married couples and help them to fill it. Then she should go through the questionnaire and with further clarifications try to identify the risk conditions if available. After that she should refer the couple to MOH clinic for further screening by a medical officer and should give the dates for sensitization classes. PHM should make aware the couple regarding the importance of early commencement of antenatal care and pre pregnancy folic acid supplementation. She also should inform them how to inform PHM once the wife gets pregnant.

When a woman gets pregnant, PHM should register her ideally by 6-8 weeks. PHM should make aware the community regarding the importance of early registration as a pregnant woman and the means of communicating with her. PHM can register the pregnant women either at home or in the clinic. It is better to register at home as PHM gets an opportunity to assess the socioeconomic condition, home environment and to meet the other members of the family during early pregnancy. This is an opportunity to educate the family members regarding pregnancy and other relevant topics.

Home visit 1 (6 -12 weeks)

Objectives:

1. To assess the condition of the pregnant woman including socio- economic status
2. To develop a rapport and linkage with the pregnant woman and the family
3. To educate the pregnant woman and the family regarding the maternal care

When the pregnant woman is registered at the home, that visit can be considered as the first home visit. When the pregnant woman is registered at the clinic, PHM should visit her before 12 weeks of POA. During this visit PHM should:

a) Assess the condition of the pregnant woman (physical, mental, social and environmental)

Obtain information on:

Personal history :

- Name
- Age /date of birth
- Address and telephone number
- Marital status- duration and history of subfertility
- History of consanguinity
- Pre pregnancy care: Eligible couple registration

- Rubella Immunization
- Intake of folic acid
- Attend to a pre pregnancy care programme/not
- Thalasseamia test if relevant
- Planned/ unplanned pregnancy

Socio- economic status:

- Housing: type, size, number of occupants
- Sanitary conditions: type of toilet, source of water
- Lighting: Electricity or other sources of lighting
- Cooking facilities- gas, electricity, firewood
- Tobacco use (smoking or chewing habit) or use of other harmful substances
- Alcohol use
- Gender Based Violence
- Environment: Prone to dengue and accidents, cleanliness etc
- Domestic air pollution: smoke inhalation (tobacco smoking, smoke from the hearth, mosquito coils etc.)
- Educational level: primary, secondary, university or higher education
- Economic resources: employed (salaried work or short-term)
- Type of work and position: both pregnant woman and husband
- Occupation: distance to travel, harmful occupational exposures, maternity benefits, work load
- Nuclear or extended family
- Relationship with in-laws
- Family support and social support
- Availability of a responsible person at home
- Mode of transport at an emergency
- Closest EMOC facilities: distance / transport facilities
- Home gardening, iodized salt, eating habits, Myths, House hold food security
- Leisure activities
- Religious activities

Medical history

- Specific diseases and conditions: tuberculosis, heart disease, chronic renal disease, epilepsy, diabetes mellitus, hypertension, asthma, psychiatric illness
- STIs/ HIV status: if known
- Other specific conditions depending on prevalence in the area: hepatitis, malaria, thalaseamia
- Allergies: food or drug
- Operations other than caesarean sections: heart surgeries, surgeries for gynaecolgical conditions
- Blood transfusions: Rhesus (D) antibodies
- Current use of medicines: specify
- Period(s) of infertility: Duration, cause(s) treatments etc

History of present pregnancy

- Date of commencement of last menstrual period (LMP)
- Certainty of dates: by regularity, accuracy of recall and other relevant information
- Any unexpected event: pain, vaginal bleeding, other- specify
- History of malaria attacks
- Contraceptive history: method used, when it was started, when it was stopped, method failure or not

Family history (blood relatives)

- Diabetes Mellitus, Hypertension, Twins, Congenital abnormalities

Obstetric history
Previous pregnancies (Review all the available records, diagnosis cards, clinic records)

- Number of previous pregnancies
- Date (month, year), place of delivery and outcome of each event (live birth, stillbirth, abortion, ectopic, hydatidiform mole) - Specify and validate with available documents
- Preterm births and types of abortion: If applicable and possible
- Birth weight (if known)
- Sex and age of the living children

Special maternal complications and events in previous pregnancies (specify which pregnancy/ ies validate by records (if possible):

- Recurrent early abortion
- Induced abortion and any associated complications
- Gestational diabetes
- Hypertension, pre-eclampsia or eclampsia
- Placental abruption
- Placenta praevia
- Breech or transverse presentation
- Obstructed labour, including dystocia
- Third-degree tears
- Excessive bleeding (antepartum or postpartum)
- Puerperal sepsis

Obstetrical interventions:

- Caesarean section (indication, if known)
- Forceps or vacuum extraction
- Manual/instrumental help in vaginal breech delivery
- Manual removal of the placenta

Special perinatal (fetal, newborn) complications and events in previous pregnancies
specify which pregnancy/- ies, validate by records (if possible):

- Twins
- Higher order multiples
- Low birth weight: <2500 g
- Malformed or chromosomally abnormal child
- Macrosomic (>3500g) newborn
- Resuscitation or other treatment of newborn
- Perinatal, neonatal or infant death (also: later death)
- IUGR
- Rhesus antibody affection (Erythro blastosis, hydrops fetalis)
- SCBU or NICU admissions

b) Perform physical examination)

- Assess the personnel hygiene
- Check for signs of severe anaemia: pale complexion in fingernails, conjunctiva, oral mucosa, tip of tongue and shortness of breath.
- Look for oedema- ankles, fingers, face, and abdomen
- Do a general examination: Look for thyroid diseases, dental hygiene, deformities (spine, pelvic and limbs), icterus, clubbing, cyanosis
- Breast examination: masses, changes in the skin, nipple
- Abdominal examination – masses, tenderness, palpable uterus (compare with the POA)

c) Investigations

- Check urine for glucose and/or proteins if indicated (PIH, hypertension, renal disease, diabetes)

d) Referral for antenatal care

- Determine the expected date of delivery based on LMP and all other relevant information. Use 280-day rule (LRMP + 280 days). Some women will refer to the date of the first missed period when asked about LMP, which may lead to miscalculation of term by four weeks.
  Eg. Last LRMP: 23rd March 2010 EDD 30th December 2010
- Give an appointment for antenatal clinic care

f) Advice, questions and answers, and scheduling the next appointment

- If new risk factors identified refer to ANC as early as possible (when 1st home visit after first clinic visit).
- Give advice on safe sex. Emphasize the risk of acquiring or transmitting HIV or STIs.

- Advise women to stop the use of tobacco (both smoking and chewing), alcohol and other harmful substances. Advice to avoid passive smoking.
- Advice on management of abdominal pain, urinary tract infections and minor discomforts during pregnancy, personal hygiene, physical and mental rest and sleep.
- Advice on how to prevent infectious diseases. (use cool boiled water, hard washing etc).
- Advice all the family members on family support needed during pregnancy.
- Advice to increase fluid intake, how to prepare a balanced nutritious diet.
- Explain the signs and symptoms and actions to be taken in the case of ectopic pregnancy or an abortion.
- Give advice on whom to call or where to go in case of bleeding, abdominal pain and any other emergency, or when in need of other advice.
- Emphasis the need of continuation of treatment for medical conditions.
- Give advice on how to contact PHM in an emergency (mobile numbers, place of the office and residence).
- Request the woman to record when she notes the first fetal movement.
- Discuss with the woman and the family regarding the importance of maintaining the good mental status during pregnancy.
- Discuss with the woman and the husband (or a family member) on the importance of attending antenatal clinics and antenatal classes. So that they can be involved in the activities and can learn how to support the woman through her pregnancy.
- Introduce the relevant reading material (guide to pregnant mothers, five booklets on breast feeding, booklets on ECCD) to the pregnant woman and the family.

Schedule next appointment:

- Give them a date for first antenatal class
- Make arrangements for the second home visit, at (or close to) 22 -24 weeks: state date and hour. This should be written in the pregnancy record (H512) A and B.
- Give a date for the first antenatal clinic visit if she has not gone yet.
- Ask her to come to the clinic or inform PHM if there is any problem.
- Inform her the dates of the clinic sessions and the dates and place of weighing (children) in the village where she can meet the PHM.

h) Maintain complete records

- Complete 512 A, B and the diary
- Issue properly filled a H512 (pregnancy record) to the mother and explain her and family importance of it and how to self assess the weight gain using weight gain chart and growth of the fetus using SFH chart
- Advise her to bring pregnancy record with her to all appointments she may have with any health services

Home visit 2 (22 -24 weeks)

Objectives:

1. To access the progression of the pregnancy
2. To help the pregnant woman and the family to deal with the pregnancy
3. To advice the family regarding birth plan and emergency plan
4. To help the family to prepare for the delivery and newborn

Ask:

- For any complains
- Whether she feels fetal movements, if she feels, record first date of quickening and see whether it is compatible with her POA
- About her mental wellbeing (happiness, support from the family members)
- About the diet, intake of vitamins, worm treatment and immunization (Tetanus toxoid)
- About the rest, sleep, daily activities done at home
- For any physical discomforts: Headache, dysuria, vaginal discharges, any discharges from the nipples, breast pain, vomiting and morning sickness
- About the family support (from the husband and other family members)
- About sexual activities
- About the plans for delivery and emergency (hospital/ transport/ money/arrangements to care for the home and other children if any)
- Whether all the investigations are done (Grouping and Rh, Hb, VDRL, PPBS)
- Whether she has attended for the referrals

Examination:

- Assess the personnel hygiene
- Observe any behavioural changes
- Check for signs of severe anaemia: pale complexion in fingernails, conjunctiva, oral mucosa, tip of tongue and shortness of breath
- Look for thyroid diseases, Dental hygiene, icterus, clubbing, cyanosis
- Look for oedema: ankles, fingers, face, abdomen
- Abdominal examination : feel for fundus , fundal height, fetal movements, fetal heart sounds
- Check urine for sugar and protein: If needed (women with renal disease, hypertension, diabetes)

Interventions and actions:

- Educate mother and care givers regarding danger signals during pregnancy (antepartum haemorrhage, severe abdominal pain, severe headache), importance of clinic visits, proper nutrition, monitoring of weight gain, working and mental well-being during pregnancy, items to be taken to the hospital for the delivery, ECCD, rest and sleeping

- Referrals should be done if needed- anaemia, severe headache, difficulty in breathing, other difficulties
- Emphasis the need of continuation of treatment for medical conditions
- Check for compliance on taking micronutrients, food supplementation and medical advice given in the clinic
- Discuss with the family: place of delivery, actions to be taken in an emergency, arrangement for transport
- Give an opportunity to discuss issues and ask questions
- Give a date for third home visit
- Confirm the attendance for antenatal class II
- Give date and place for third antenatal class
- Make records in 512 A, B , and in the diary

Home visit 3 (34- 36 weeks)

Objectives

1. To ensure the birth plan and preparedness for the hospitalization and delivery
2. To help the family to welcome the new member
3. To ensure breast feeding, ECCD activities and family planning

Ask:

- For any complains, physical discomforts
- Whether she feels fetal movements, and teach her how to maintain a kick count chart
- About the support from the family
- Check the compliance on taking micronutrients, food supplementation and medical advice given in the clinic
- Advice and check to prepare the essential items for both mother and baby during hospitalization including transport
- Ask about the present illnesses, changes in the vulva, oedema and headache, varicose veins, dysuria, difficulty in breathing
- Ask about the advices given in the clinics and see whether she is complying

Examination:

- Assess personnel hygiene
- Observe for any behavioural changes
- Check for signs of severe anaemia: pale complexion in fingernails, conjunctiva, oral mucosa, tip of tongue and shortness of breath.
- Look for oedema: ankles, fingers, face, abdomen
- Examine abdomen and assess the fundal height compare with POA, check the lie and presentation
- Listen to fetal heart sounds
- Check urine for sugar and protein- If needed (women with renal disease, hypertension, diabetes)

Interventions and actions:

- Educate and reconfirm what mother and care givers knew regarding signs of labour
- Ensure that all the items need for delivery and hospitalization are ready
- Aware the mother regarding vaginal examination, lithotomy position, pain management, delivery on to abdomen (skin to skin contact with the baby), importance of cooperation at the labour room, breathing exercises
- Educate mother and the family members about the labour, breast feeding, family planning, early childhood care development, obstetric emergencies: reduced fetal movements, antepartum haemorrhage, dribbling, severe headache, abdominal pain, and actions to be taken if she experience any of those, new born care, post partum micronutrient supplementation, EDD and signs of labour
- Discuss with the family: actions to be taken during an emergency, transport arrangements in an emergency, care for other children while mother is in hospital, family and social support after delivery
- Discuss the breast feeding: including first feed, exclusive breast feeding, attachment, positioning etc. and ensure that she has read the booklets on breast feeding
- Infection control: importance of limiting visitors, handling of baby, hand washing
- Advice to prepare the home environment to welcome the newborn
- Services from the hospital: start breast feeding within the first hour of delivery and exclusive breast feeding, BCG immunization, Vit. A mega dose, birth registration, pregnancy record to be returned, CHDR, neonatal examination by a MO
- Method to inform the PHM after delivery: telephone, messenger
- Refer to an appropriate health facility if needed
- Give an opportunity to discuss issues and ask questions
- Record the findings in the 512 A,B and complete the diary
- If needed, complete LRT consent form
- If they change the residence after delivery, ask them to inform the area PHM in the new residence for postnatal care

Chapter 7

DOMICILIARY CARE FOR HIGH RISK PREGNANCIES

Please note all the high risk pregnant women should receive the routine domiciliary care described in the previous chapter.				
Risk condition	**Frequency of home visits**	**Ask**	**Examine**	**Remarks**
Past Obstetric History				
Previous still birth (antenatal or intrapartum) or neonatal loss or congenitally malformed babies	After 28 weeks PHM should provide domiciliary care every 4 weeks	Ask about fetal movement Inquire about the other risk conditions eg. GDM, PIH	Routine examination and focus more on FHS from 20 weeks	Make aware on conditions which can cause still births E.g. Gestational DM, Placenta abruption , cord round the neck etc Ascertain that blood sugar levels checked. Educate on danger signals Ask pregnant woman: to be more vigilant about fetal movements to pay special attention to KCC after 36 weeks to get admit as early as possible if she experience reduced fetal movements to get admit to hospital as early as possible if she gets a severe abdominal pain, bleeding per vagina. Reassure that it will not happened in consequent pregnancies Plan for delivery and emergency Refer to post-partum clinic for neonatal examination after delivery

History of 2 or more consecutive first trimester abortions	During first trimester, provide domiciliary care in every 4 weeks. After that if no risk conditions identified, routine antenatal domiciliary care	Inquire about vaginal bleeding , abdominal pain If the reasons for the abortions are other medical condition, act according to the advice given.	Routine examination	Ask her to get admit as early as possible if she experience abdominal pain or bleeding per vagina See the compliance of medication and instructions given by antenatal clinic/ specialized care units
History of preterm delivery before 37 weeks, or second trimester miscarriage	After 28 weeks PHM should provide domiciliary care once in 4 weeks	Inquire about lower abdominal pain or vaginal bleeding	Routine examination and focus more on FHS from 28 weeks	Ask her to avoid heavy work and get adequate rest Ensure the family support for domestic work Ask her to get admit as early as possible if she gets lower abdominal pain or blood stained vaginal discharge or per vaginal bleeding Ask to prepare all the things need for the delivery See the compliance of medication and instructions given by antenatal clinic/ specialized care units
History of PHI eclampsia/ preeclampsia	If high blood pressure is not detected in this pregnancy, Routine three home visits are adequate.	Ask about headache, visual disturbances, chest pain , shortness of breath and epigastric pain	Measure BP if possible Check urine for albumin during home visits.	Educate family members on signs and symptoms pre eclampsia Ask her to get admit if she experience any of those symptoms Ask her to check blood pressure at least once a month and maintain the records. Refer to a doctor if BP is high or if albumin is present in urine or any sign of pre eclampsia

History of APH	Routine three home visits are adequate.	Ask about vaginal bleeding and abdominal pain Ask about shortness of breath while moderate exercise (features of anaemia)	See whether USS has done to confirm the placental site See whether the reports of blood grouping and Rh and Hb are available Examine for signs of aneamia	Educate her to take nutritious iron rich diet. Ask her to get admit as early as possible in case of vaginal bleeding or abdominal pain. If anaemic, act according to the guidelines given. See the compliance on ironfolate and nutrition advice.
History of retained placenta or history of postpartum haemorrhage	Routine three home visits are adequate.	Ask for symptoms of anaemia	Look for signs of anaemia See whether the reports of blood grouping and Rh and Hb are available	Help her and the family to decide on place of delivery (place with CEMOC facilities) If anaemic, act according to the guidelines given. See the compliance on ironfolate and nutrition advice
History of caesarean section/ myomectomy	After 28 weeks, domiciliary care should be given every 4 weeks	Ask for abdominal pain, vaginal bleeding, pain in the scar	Examine for scar tenderness See whether the USS is done to confirm the placental site Look whether the Hb and blood grouping and Rh reports are available	Ask her to get admit if she experience abdominal pain, vaginal bleeding and scar tenderness If so ask her to go to the hospital fasting due to possibility of emergency section Help her and family to decide on place of delivery (place with CEmOC facilities) If anaemic, act according to the guidelines given. See the compliance on ironfolate and nutrition advice
History of surgery on reproductive tract (removal of septum, cone biopsy, large loop excision of transformational zones)	Monthly home visits from the registration	Ask for abdominal pain or vaginal bleeding	Examine for tenderness in the abdomen See whether intrauterine pregnancy is confirmed	Ask mother to get admit as early as possible if she experience severe abdominal pain during first trimester Advice to get a scan done to confirm intrauterine pregnancy Check the compliance on medical advice given in the specialized care unit

Birth with birth weight <2500g	Monthly home visits		Measure SFH Check maternal weight gain Check for FHS	Ask her to take balanced nutritious diet Advise on adequate rest. Ensure the family support on domestic work Refer to the clinic if SFH is less than POA
Birth weight > 3500g	Routine home visits are adequate, if there is no additional complication	Inquire about the Gestational DM	Measure SFH Check maternal weight gain Check for FHS Check urine for glucose during home visit	Refer to the clinic if SFH is more than POA for USS Check whether screening for GDM has done Help mother to decide on place of delivery(with CEMOC facilities) Kick count chart after 36 weeks
History of IUGR	Monthly home visits	Ask for fetal movements Ask for other risk conditions (PIH) Ask for chronic diseases and frequently occurring conditions	Measure SFH Measure BP if possible Check maternal weight gain Check for FHS	Reassure mother Identify nutritional problems and intervene Ensure family support and adequate rest at home Inquire about the type of household work engaged in Refer to the clinic if SFH is less than POA
Feeding difficulties/ history of breast surgery	Monthly visits during last trimester			Advice on breast feeding technique , how to express breast milk and importance of breast feeding

Present pregnancy				
Age less than 20 years	If she is less than 18 years monthly home visits	See whether she has gone to a specialized unit		Ensure the antenatal clinic care Ensure the help from the family or neighbours Discuss the care during postnatal period Discus about postpartum family planning Discuss about Breast Feeding
Advanced maternal age (Age> 35 years)	If mother is more than 40 years and a primi need monthly home visits. For others routine three visits are adequate	Ask for risk conditions (hypertension, diabetes Mellitus) Ask for fetal movements	Measure BP if possible Check for SFH, FHS Check whether screening for GDM has done	Explain her about the risk of chromosomal abnormalities, first trimester miscarriages associate with the age Ask her to be more vigilant on fetal movements after 36 weeks Ask her to admit as early as possible if she experience reduced fetal movements Help her to decide on place of delivery with CEmOC facilities
Height< 145cm	Routine three visits are adequate		See whether she has gone for pelvic assessment to a specialized unit during the third trimester	Explain her and family members about the process of labour Help her to decide the place of delivery with CEmOC facilities.
BMI <18.5kg/m2	Monthly home visits until the weight gain is adequate according to BMI		Check whether mother is taking balanced nutritious diet	Ask her to take a balanced nutritious diet Assess the level of physical activity and if she is carrying out heavy work, discuss with her how to reduce that kind of work. Ensure the help of the family and adequate rest

BMI > 30kg/m2	Monthly home visits	Ask for other risk conditions such as Hypertension, PIH, GDM	Check whether screening for GDM has done Measure BP if possible Measure SFH Look for lie and presentation after 36 weeks	Refer to the clinic if SFH>POA Advice on dietary habits- low fat/ carbohydrates Explain the risks of obesity/ overweight Ask her to check blood pressure regularly
Primigravida	Routine three visits are adequate		Check for lie presentation and head engagement after 32 weeks	Educate on labour , labour pains, environment of the labour room Ensure the family support Advise on the items to be taken to the hospital. Educate on breast feeding and BF techniques
Parity (5 or more)	Monthly visits	Ask about the social problems (GBV, poverty, low educational level) Ask about the symptoms of anaemia	Check whether the Hb report is available	Ask her to get admit as soon as possible even with slight lower abdominal pain closer to delivery Help the her decide the place of delivery with EMOC facilities Discuss about the family planning method Ensure the family support and arrangements for other children
Multiple pregnancy	Monthly up to second trimester and two weekly during third trimester	Ask about the vomiting and other symptoms of pregnancy during first trimester Ask about the	Check whether the Hb report is available Check whether mother has gone to a specialized unit Measure BP if possible	Explain her about risk of having preterm labour and ask to get admit as early as possible if she experiences any lower abdominal pain close to term. Explain her about risk of PIH associated with multiple pregnancies and asked to BP checked regularly Ask her to go to a specialized unit in case of an

		symptoms of anaemia Ask about other risk conditions (PIH)		emergency Advice on technique of breast feeding both babies simultaneously Advice on family planning methods Advice on how to care twins Emphasis on family support which is very much needed after delivery
Diastolic BP more than 90mmhg	Every two weeks after detecting high blood pressure	Ask about severe headache , visual disturbances, chest pain and shortness of breath Ask about fetal movements	Measure BP if possible Check urine for albumin Check the compliance on antihypertensives and the advice given at the clinic Check FHS	Refer to a medical officer if BP is high or if urine for albumin is positive Ask her to be fasting while getting admit to hospital in case of emergency Help her to decide on place of delivery with C EmOC facilities Educate the family members regarding danger signals and the actions to be taken in an emergency
Uncertain dates / irregular periods	Once the dates are corrected, routine three home visits are adequate	Ask about previously used family planning method method used, when did it stop, how long she has used it,)	Check whether she has gone for dating scan	Refer for a dating scan before 20 weeks of POA Ask mother to be more vigilant on date of quickening
Intra uterine growth retardation	Home visits should be done every two weeks once IUGR is detected	Ask for fetal movements	Check whether dating scan is done Measure SFH Check FHS Check the maternal weight gain	Refer to specialized clinic for accurate dating and regular USS with growth charts Ask mother to be more vigilant on fetal movements Ensure the adequate rest Ensure that the advice given by the clinics is followed.

Mal-presentation and abnormal lie after 34 weeks	Home visits every 2 weeks			Reassure mother Refer to specialized unit
Vaginal bleeding (any time)				Ask mother to get admit to hospital as early as possible
Maternal jaundice				Ask mother to get admit to hospital as early as possible
Maternal anaemia (Hb 7- 11g/dl)	Monthly home visits until the Hb level is normal	Ask about the symptoms of anaemia	Check whether warm treatment are taken Check the compliance of iron therapy	Ask mother to get Hb checked until the levels normal Educate on taking iron rich diet Educate on side effects of iron therapy Give advice on micronutrients and diet
Severe maternal anaemia (Hb < 7 g/dl)	Two weekly home visits until the Hb levels normal	Ask about the symptoms of anaemia	Check the compliance on advice given	Refer to a specialized unit for correction Give advice on micronutrients and diet
Maternal malaria	Two weekly home visits until the condition resolved		Check the use of bed nets/ insecticide impregnated bed nets Check the compliance on malaria prophylaxis treatment	Refer to nearest hospital medical unit Advise to use insecticide impregnated bed nets Ensure the malaria prophylaxis treatment
Maternal syphilis	Monthly home visits	Ask about symptoms of other STIs (vaginal discharge, itching of vulva)	Check the compliance on the drugs given	Refer to the STD clinic as early as possible Check the compliance on advice given Educate on safe sex practices Advice to get her partner screened for syphilis Ensure the confidentiality of the information.

Maternal HIV	Monthly home visits	Ask about symptoms of other STIs(vaginal discharge, itching of vulva)	Check the compliance of drugs given.	Refer to the STD clinic Advice to get her partner screened Check the compliance on advice and treatment given Explain the mother the risk of transmitting the HIV infection to the baby is very low when mother is on treatment for HIV Discuss on Breast feeding Refer to the MOH for further information
Other risk conditions				
Diabetes Mellitus	Home visits in every two weeks	Ask for fetal movements	Check urine for sugar Check for FHS Monitor maternal weight gain Measure SFH Check the compliance with medical advice	Manage as decided by VOG and relevant specialists Educate mother and family members on diet Ask mother to mark kick count chart after 36 weeks Ask mother to get admit as early as possible if she experience reduced fetal movements Educate mother and family members on co- infections eg:UTI, fungal infections Help to plan the delivery in a CEmOC facility
Liver disease and renal disease	Home visits in every two weeks		Look for oedema (facial, finger, and abdomen) Look for jaundice, itching, clubbing etc. Check urine for proteins Measure BP if possible Monitor maternal weight gain	Manage as decided by VOG and relevant specialists Educate mother and family members on diet Delivery in a CEmOC facility

Rheumatic and congenital heart diseases	Home visits in every two weeks	Ask for shortness of breath with exertion eg. Climbing stairs Ask for dyspnoea on lying down Ask whether she need two or more pillows for sleeping	Look for features of heart disease(ankle odema, elevated JVP)	Advice to restrict work as advised by cardiologist/ VOG Discuss about Family Planning Delivery in a CEmOC facility
Epilepsy	Monthly home visits	Ask for the details of last attack	Look for drug compliance and places that can endanger life in the home environment eg: unprotected wells , floor level fire places	Advice family members on what to do during an epileptic attack, to take necessary precautions Explain the family members on importance of compliance on drugs
Mental disorders	Monthly home visits		Check compliance of drugs	Educate on family members on the disease and advice on family support Ask family members to seek medical advice in case of a behavioural change of the mother Explain that drugs can be used even during breast feeding and not harmful for the baby Explain family members that mental disorders can be aggravated during post-partum period and to be more cautious Educate family members on postpartum psychological disorders

Asthma	Monthly home visits	Ask for shortness of breath	Check respiratory rate Examine breathing sounds if possible Check the compliance of drugs/ inhalers	Educate family members on importance of drug compliance
Rh negative mother	Routine three home visits are adequate	Ask for fetal movements	Check whether the screening for Rh antibodies is done	Educate mother on RhOGUM after delivery
Subfertility (Failure of a couple to conceive with one year of regular intercourse)	Monthly home visits	Ask for any abdominal pain , per vaginal bleeding Ask for fetal movements	Check for SFH, FHS	Ask mother to get admit as early as possible to a hospital with EMOC facilities in case of an emergency. Ask mother to be more vigilant on fetal movements
Social problems				
Unmarried/ widows/ separated (single mother)	Monthly	Ask for social problems		Help them to face the social stigma Ensure the proper antenatal care Introduce a postpartum family planning method
Extreme poverty/ geographical difficulties, gender based violence, alcoholic partner etc.	Monthly	Ask whether she is getting any government allowances (samurdhi)		Help them to get social support and support from special programs with GramaNiladari and other relevant officials Introduce a postpartum family planning method

Chapter 08

DEVELOPING A BIRTH AND EMERGENCY PLAN

Explain why birth in a facility is recommended

- Any complication can develop during delivery and they are not predictable.
- A facility has staff, equipment, supplies and drugs to provide best care if needed, and a referral system.
- If HIV- positive she will need appropriate ARV treatment, for herself and her baby during childbirth. Complications are more common in HIV-positive women and her newborns. HIV-positive women should deliver in s facility.

Advice how to prepare

Review the arrangements for delivery:

- Where will she go to get treatment for an emergency or delivery?
- How will she get there?
- How much will it cost to go to the facility? How will she pay for transport ?
- Can she start saving straight away?
- Who will go with her to the hospital?
- Who will help while she is away to care for her home and other children?
- Who to inform in an emergency?

Advise when to go

- If the mother lives near the facility, she should go at the first signs of labour.or dange signal
- If living far from the facility, she should go 2-3 weeks before baby due date and stay either at the maternity waiting home or with family or friends near the facility.
- Advise to ask for help from the community, if needed.

Advise what to bring

- Pregnancy record.
- Clean clothes for drying and wrapping the baby.
- Adequate amount of sanitary pads after birth.
- Cloths for mother and baby.
- Food and water for mother and support person.

Home delivery in an emergency or due to unavoidable circumstances

Reinforce the importance of delivery in a health institution.

Instruct mother and family on clean and safer delivery at home

If the mother has to deliver at home due to emergency or unavoidable circumstances, review these simple instructions with the woman and family members.

Tell her / them to try their best to get down a skilled birth attendant (institutional midwife/ PHM/midwifery qualified nurse or a medical officer)

- To ensure a clean delivery surface for the birth.
- To ensure that the birth attendant should wash her hands with clean water and soap before/after touching mother / baby. She should also keep her nails clean.
- To place the baby on the mother's chest with skin-to skin contact and wipe the baby's eyes using a clean cloth for each eye, after delivery,
- To cover the mother and the baby with a clean cloth.
- To use boiled new blade and a boiled cord to tie and cut the cord. The cord is cut when it stops pulsating.
- To dry the baby after cutting the cord. To wipe clean but not bathe the baby until after 6 hours.
- To wait for the placenta to deliver on its own.
- To start breastfeeding when the baby shows signs of readiness, within the first hour after birth.
- To NOT leave the mother alone for the first 24 hours.
- To keep the mother and baby warm. To dress or wrap the baby, including baby's head.
- To dispose of the placenta in a correct, safe and culturally appropriate manner (burn or burry).

Advise to avoid harmful practices

For example:
NOT to use local medications to hasten labour.
NOT to wait for waters to stop before going to health facility.
NOT to insert any substances into the vagina during labour or after delivery.
NOT to push on the abdomen during labour or delivery.
NOT to pull on the cord to deliver the placenta.
NOT to put ashes, cow dung or other substances on umbilical cord /stump.

Advise on danger signs

If the mother or baby has any of these signs, she/they must go to the hospital **immediately, day or night, WITHOUT waiting**

Mother

- Waters break and not in labour after 6 hours.
- Labour pains / contractions continue for more than 12 hours.
- Heavy bleeding after delivery (pad/cloth soaked in less than 5 minutes).
- Bleeding increases.
- Placenta not expelled 1 hour after birth of the baby.

Baby

- Very small
- Difficulty in breathing
- Fits
- Fever
- Feels cold
- Bleeding
- Not able to feed

Chapter 09

ANTENATAL CLASSES

In this maternal care model, health promotion and education of pregnant women regarding pregnancy and related topics is carried out during clinic sessions as group education, opportunistic education during clinic visits and home visits and in the antenatal classes for couples.

Objectives of the antental classes:

1. To educate the pregnant women and their husbands/families on topics related to pregnancy, child birth, postnatal care and childcare
2. To improve the male participation in maternal care
3. To give an opportunity to alleviate the doubts on pregnancy related issues
4. To improve the community participation in maternal care
5. To change the parenting behavior to fulfill the needs of the child

Guideline for conducting antenatal classes

1. All pregnant women should be participated in three antenatal classes during pregnancy (one per each trimester) with her husband.
2. All the women participating in a class should be in a same trimester eg. All are in first trimester or all are in second trimester.
   Antenatal class 1 – for pregnant women in first trimester
   Antenatal class 2 – for pregnant women in second trimester
   Antenatal class 3 – for pregnant women in third trimester
3. The topics/ issues discussed in each class should be related to the trimester of the pregnancy of the participants.
4. PHM should be kept notes in the relevant cage in the pregnancy record regarding the participation.
5. Antenatal classes should be conducted once a month at the level of PHI area or 3-4 PHM areas together (depending on the number of pregnant mothers in a PHM area).
6. A class for a trimester can be organized once in three months to cover all the mothers.
   Eg. January – Antenatal class 1
   February- Antenatal class 2
   March - Antenatal class 3
   April - Antenatal class 1 ……so on

January	Feb	March	April	May	June	July	August
Class1	Class 2	Class 3	Class 1	Class 2	Class3	Class1	Class 2

7. For couples who are unable to attend to classes, arrangement should be made to attend to the classes at the nearest area.
8. The annual plan for antenatal classes should be display in the clinic centres with the venue, date and time.
9. The annual plan for the MOH should be displayed with the annual clinic plan.
10. Relevant area PHMM should be organized the classes with the help of the area PHI.
11. The lectures and the other activities should be carried out by the PHI and PHMM according to the guide given. MOMCH, MOH, PHNS, SPHM, HEO or other relevant officers can be used as special resource persons.
12. MOH, PHNS and SPHM should be supervised the sessions and should be guided them to improve the quality of the classes.
13. All mothers should get breast feeding booklets, guide for pregnant mothers and ECCD booklets to read.
14. Develop a small questionnaire and give it to the couples at the end of the session to assess the output.
15. The places to conduct the classes should be selected from the area eg. Clninic centres, temples, community centres etc. The recourses to treat the participants should be organized with the community participation.
16. Other than the above mentioned facts, there is an enough room for your innovative ideas to improve the quality of the antenatal classes.

Proposed topics for antenatal classes

Antenatal class I:

1. Objectives of the antenatal classes
2. Activity to identify the participants
3. Development of the feotus
4. Antenatal care
5. Risk conditions and danger signals during first and second trimesters and emergency preparedness
6. Nutrition of the pregnant woman
7. Minor discomforts during first and second trimesters and management of them at home
8. Prevention of mother to child transmission of HIV and other sexually transmitted diseases
9. Importance of good oral hygiene during pregnancy
10. General wellbeing during pregnancy
11. Introduction to the hand book on maternal care (Nirogimath daruparapurak udesa…..)

Antenatal class II:

1. Nutrition during pregnancy II
2. Risk conditions and danger signals during second and third trimesters and emergency preparedness
3. Minor discomforts during second and third trimesters and management of them at home
4. Introduction to breast feeding (importance)
5. Early Childhood Development and Care (ECCD)
6. Maintenance of correct posture during pregnancy
7. Preparation for delivery and newborn
8. Any other topic relevant to the area eg. Prevention of alcoholism, gender based violence, money and time management

Antenatal class III:

1. Nutrition during lactation
2. Labour signs and symptoms
3. Risk conditions and danger signals during third trimester and postpartum period and emergency preparedness
4. Minor discomforts during third trimester and postpartum period and management of them at home
5. Breast feeding (technique and support from the family)
6. Early Childhood Development and Care (ECCD)
7. Maintenance of correct posture during pregnancy and postpartum period
8. Postpartum Family Planning
9. Care for the newborn baby

Chapter 10

CLINICAL PROCEDURES FOR ANTENATAL CARE

10.1 Anthropometric assessment of pregnant women

Measuring weight at the clinic setting

The weighing scale should be placed on a smooth, leveled surface.

Before weighing, the person should be asked to remove slippers, heavy clothes, handbags and any other heavy item (keys, coins etc.) with them.

The reading of the scale should be checked and it was adjusted to '0'.

Then the person should be asked to step onto the scale. It should be made sure that:

- Person stands upright, with her arms hanging loosely at sides.
- Person looked straight ahead and not moving

Reading of the scale display should be noted down to the nearest 0.1kg when it stopped changing.

Measuring height at the clinic setting

Microtoise tape should be used to measure the height.

Microtoise should be set up against a wall in full length.

Ask the mother to remove slippers and stand against the wall as straight as she can.

Look at the person from the front and made sure that she is under the Microtoise meter and keeping the feet slightly apart.

Look at the person from the side and make sure that her back of the head, shoulders, buttocks and her heels are touching the wall.

Lower the head piece of Microtoise until it hits firmly on the top of the head and made sure that it touched the head and not the hair.

The reading should be taken to the nearest 0.5cm.

Calculation of the Body Mass Index (BMI)

$$BMI = \frac{\text{Weight (Kg)}}{\text{Height } (m^2)}$$

Instead of calculating BMI, field health care workers can use the BMI chart or BMI wheel, which gives BMI comparing weight and height. For pregnant mothers BMI should be calculated before 12 weeks, ideally at the booking visit around 6-8 weeks.

Interpretation of BMI

<18.5 kg/m^2	Under nutrition
18.5 – 24.9 kg/m^2	Normal
25 – 29.9 kg/m^2	Over weight
≥ 30 kg/m^2	Obese

Monitoring of weight gain during pregnancy

Monitoring of the weight gain during pregnancy depend on the BMI during the booking visit/ first trimester. Expected weight gains according to the BMI as follows:

BMI (kg/m^2)	**Expected Weight Gain in kg**
<18.5 (underweight)	12.5-18
18.5-24.9 kg/m^2 (Normal)	11.5-16
25-29.9 kg/m^2 (over weight)	7.0-11.5
>/= 30 kg/m^2 (Obese)	≤ 6.8

Maternal weight gain should be recorded on the weight gain chart in the pregnancy record.

Instructions to maintain weight gain chart and graph

1. Fill in the following information regarding the mother at the first clinic visit (before 12 weeks) in the box located in the left upper corner of the graph:
    - Height
    - Weight at the first clinic visit (before 12 weeks)
    - BMI at the first clinic visit (before 12 weeks)

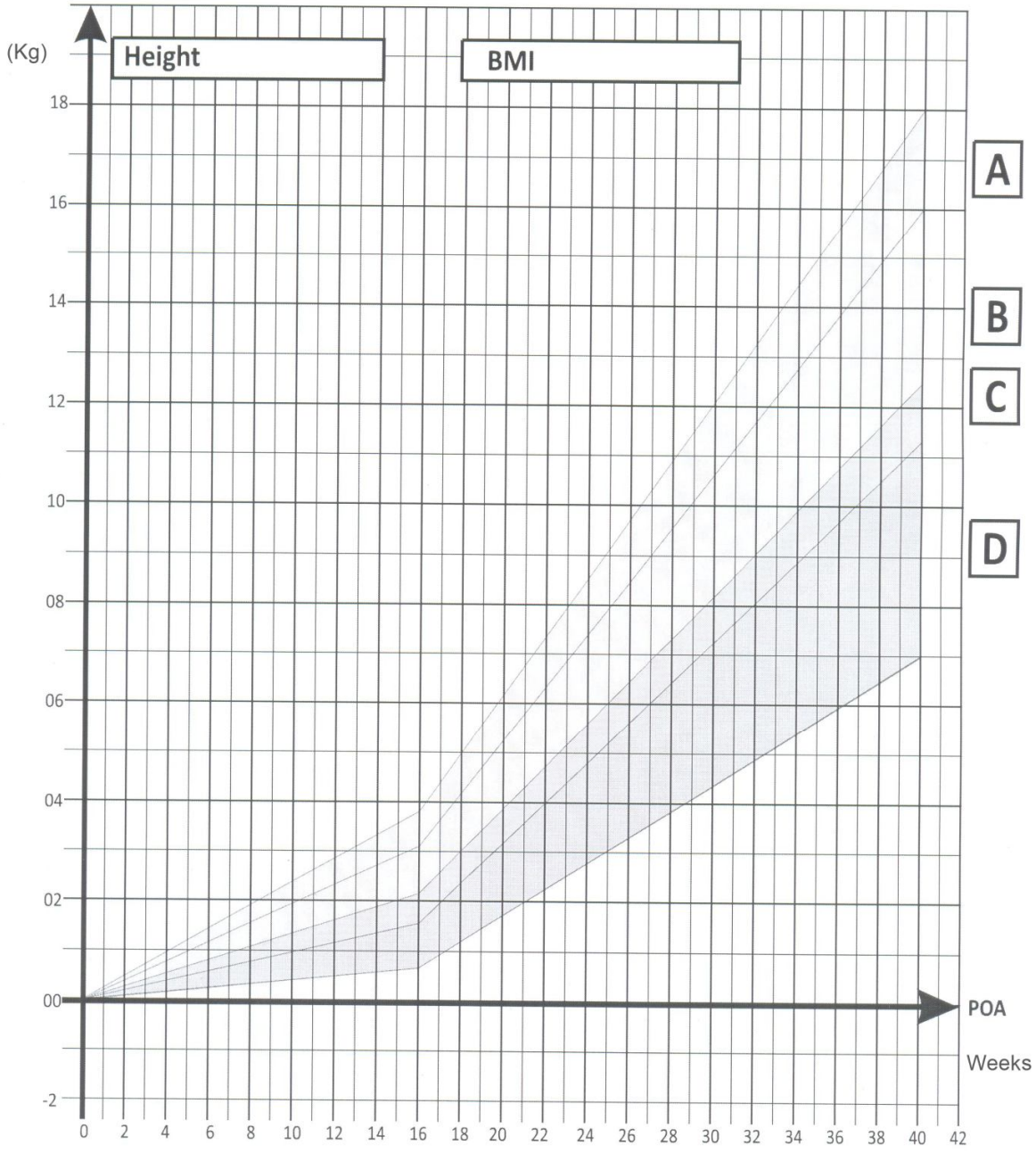
   During the first visit no data to plot on the graph.

2. During subsequent clinic visits POA and weight should be recorded on the table and weight gain should be calculated (by deducting the mother's weight at the first clinic visit from weight at the current clinic visit). Then the weight gain should be plotted on the graph according to the POA.
3. Poor weight gain as well as the excessive weight gain should be identified timely and relevant interventions should be carried out.
4. Recommended weight gain
    - It is assumed that woman's pre pregnancy BMI is more or less equal to the BMI at her first clinic (before 12 weeks)
    - For a woman with BMI less than 18.5kg/m^2 during first 12 weeks, recommended weight gain range is 12.5 – 18 kg. Her weight gain should be within the areas shown as A & B in the weight gain chart.
    - For a woman with normal BMI (18.5 - 24.9kg/m^2), recommended weight gain range is 11.5 – 16 kg. Her weight gain should be within the areas shown as B&C in the weight gain chart.
    - For women who are overweight (BMI 25-29.9 kg/m^2), recommended weight gain range is 7 – 11.5 kg (area C & D) while obese women (BMI $\geq$30kg/m^2) should gain weight less than 6.8 g (below area D).
5. Once the infant is born fill the birth weight in the box shown in the right lower corner of the weight gain graph.

බරවැඩිවීමේ සටහන

POA									
Weight (Kg)									
Weight gain (Kg)									

Weight gain



10.2 Measuring blood pressure at the clinic setting

Standard mercury sphygmomanometer should be used with an adult cuff. An extra-large cuff should be available for obese women.

The following procedure should be followed to measure blood pressure accurately.

1. Mothers should be asked to sit at a table quietly with both feet flat on the floor and with the back supported. The bladder should be empty. The room should be comfortable and with minimal noise.
2. The bare right arm should be placed on the table (at heart level) slightly flexed, with the palm upward. The examiner should be in a position to see the manometer at eye level.
3. Arm circumference should be assessed. An appropriate cuff should be selected and wrapped around the upper arm. The lower edge of the cuff should be 2.5 cm above the elbow joint.
4. Wait 5 minutes.
5. Palpate the radial pulse and inflate to 30mm Hg above the level where radial pulse disappeared (Peak inflation level). Deflate the cuff.
6. Wait 30 seconds before re- inflating.
7. Inflate to peak inflation level.
8. Deflate at 2 mm Hg per second.
9. Record the systolic BP (first of at least two regular consecutive sounds). Record to the nearest even number.
10. Record diastolic BP (the end of the last sound heard). Record to the nearest even number.

10.3 Obstetric examination

The abdominal examination

Always make sure that the pregnant woman looks comfortable, is laying semi recumbent and has a sheet covering her waist and legs, which may be bare. You must examine from the woman's right side. Remember this order for examining the abdomen: Inspection, palpation and auscultation.

Inspection:

- Assess shape and size of the uterus, and any obvious asymmetry of the abdomen; fetal movements.
- Look for surgical scars: loins (kidney transplants); supra pubically (Caesarean sections, ectopic pregnancy); grid-iron (appendix); umbilicus (laparoscopy);midline(bowel or ovarian operations)
- Striae gravidarum (stretch marks) and linea nigra (pigmented vertical line running from umbilicus to symphisis pubis) are always commented.

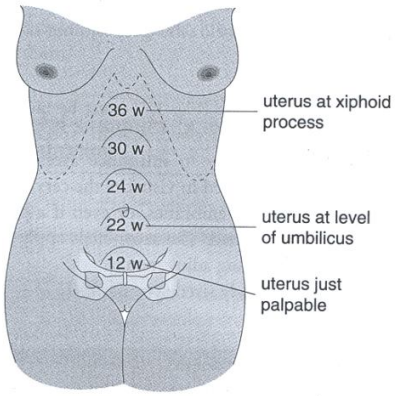
Palpation:

Measuring SFH

Firstly measure the fundal height by placing the ulnar border of the left hand gently at the fundus of the uterus, and measuring with the tape in centimeters to the pubic symphysis (keep to 0 cm end at the pubic sympysis). The measurement in cm should give an estimation of gestational age in weeks, i.e. +/- 2 cm from 20 – 38 weeks. Plot the SFH in cm on the SFH chart in the pregnancy record according to the POA.

Then palpate fetal poles to determine presentation and lie (Fig.1.3b, c and d). When establishing head engagement in the third trimester, it is better to gently palpate with two hands pacing down over the abdomen as pictured (Fig.1.3b) than to prod around with Paulik's grip (Fig. 1.5), which in non-experienced hands is painful.

To establish the lie of the fetus, palpate gently using both hands as shown in figures 1.3c and 1.6.



Measuring symphysis — fundal height

1 palpate for pubic symphysis
2 apply tape measure
3 stretch tape to fundus
4 turn tape measure over to read cms

Figure 1.4 Measuring symphysis–fundal height.

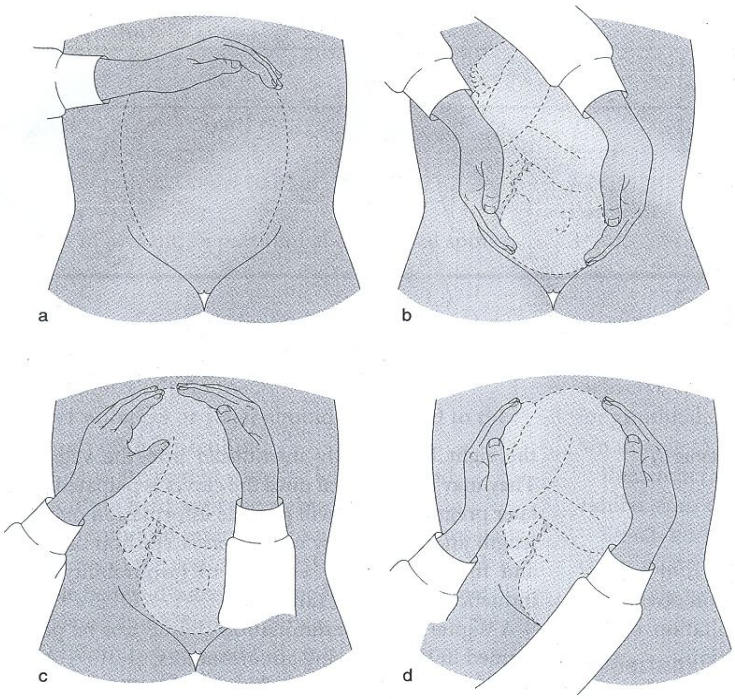


Figure 1.3 a–d Engagement of the fetal head in the maternal pelvic brim assessed. (a) Palpating the uterine fundus. (b) Assessing engagement of the fetal head. (c) and (d) Palpating fetal poles.

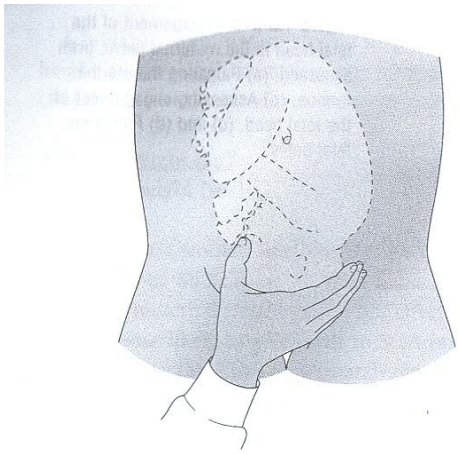


Figure 1.5 Palpation of the lower pole of the uterus by Paulik's method.

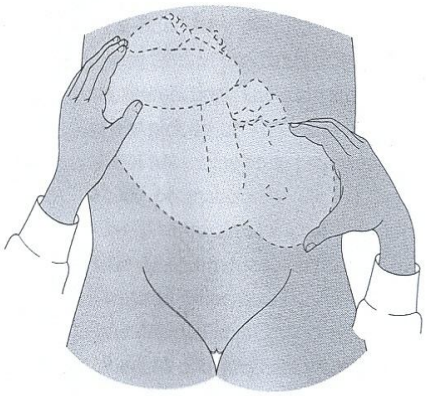


Figure 1.6 Abdominal palpation of fetus lying transversely.

It is important to make eye contact with the woman while you are examining as you may be hurting her by palpating too firmly.

After you have finished the uterus, gently palpate for kidney tenderness and liver and spleen enlargement.

Auscultation:

For a fetus with cephalic presentation, it is relatively easy to palpate the anterior shoulder and listen for the fetal heart at this point. You will obviously have to modify the position for auscultation if the fetus is in the transverse or breech positions.

Internal examination:

A pelvic (vaginal examination) is not routinely performed unless specially indicated.

To perform a digital examination, commonly called vaginal examination (VE), or a speculum examination, ask your patient to lie comfortably on her back, usually with a slight tilt and the knees drawn up with the ankles together. You should have asked her to remove her underwear, and a sheet may be placed covering her abdomen and genitalia. The procedure should be performed in the presence of a female third party. Both hands should be gloved.

For a digital examination, the labia are gently parted with the left hand, and index and forefinger of the right hand gently introduced in to the vagina. They may be advanced until the cervix is palpated. In later pregnancy, this will provide information on the length and consistency of the cervix and this allows an assessment of favourability for induction of labour.

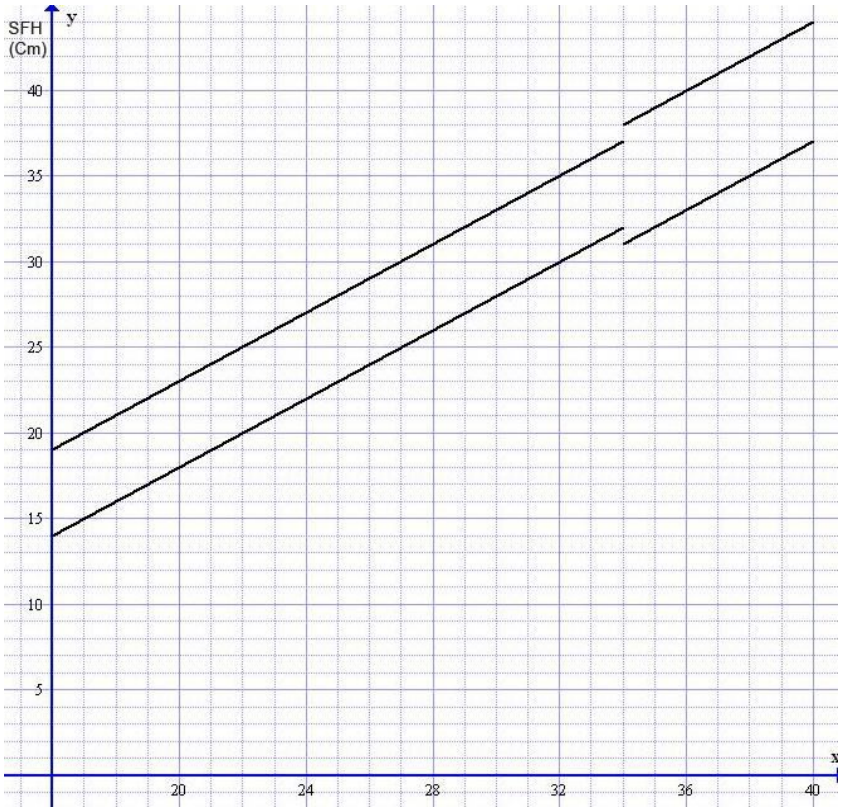
A digital vaginal examination should not be performed in the following circumstances;

- with suspected placenta previa (risk of precipitated haemorrhage)
- When there is prelabour rapture of membranes (risk of introducing infection)
- When consent is withheld

A gentle speculum examination is less likely to introduce ascending infection, and may be used to visualize the cervix in prelabour rupture of membranes, or even if a placenta previa is suspected. The same steps apply as above with the following adjustments:

- Select an appropriate sized speculum;
- The speculum should be pre-warmed to avoid the discomfort of cold metal;
- Lubricating gel or water should be applied to the mouth of the speculum;
- The labia are parted with the left hand, and speculum held with the right;
- The speculum is inserted through the introitus with the jaws in the vertical plain; it is gently rotated while being advanced into the horizontal plane;
- The speculum's jaws are slowly opened once the speculum is advanced fully into the vagina;
- At this point, the ratchet nut can be tightened;
- A light source should be at hand to enable easy visualization of the cervix and vaginal walls;
- On removing the speculum, close the jaws gently and slowly to avoid catching vaginal epithelium in them

Symphysio-Fundal Height Chart



POA

10. 4 Fetal Movement Chart or Kick count Chart

What is a kick count chart?

During the 1970's, it was thought that the number of times a baby kicked each day would indicate the baby's wellness after birth. Thus, many women began to use a 'kick chart' or 'kick count chart'. This is a simple chart that on which record the number and/ or intensity of kicks or other movement that the baby makes. Kick chart try to provide guideline for how active a baby should be.

A kick count chart may be reassuring to a mother. Others may find kick charts time consuming, bothersome and stressful, particularly if their baby doesn't move much during the time they are trying to do the chart.

One of the most common types of kick charts is called The 'Cardiff count to ten' method. With this method, mother should use an 8 to 12 hour period to record at least 10 of her baby's movements. Mother should choose a time when she thinks her baby is most active. If baby has at least 10 movements within this 12 hour period they are thought to be well. If mother use this method she should start timing at same time each day. Record the first time and should write it down on the graph. Count every movement or kick until the baby has moved 10 times. Write down the time after feeling the tenth movement. If mother feels more kicks at one moment consider it as a one kick

Start marking the kick count chart every day morning around 6.00am-8.00am

- Write the time started clearly in the relevant place
- Mark and pierce each box for each movement that baby makes
- Write the time clearly after finishing of marking 10 boxes.
- Contact a Medical Officer, Public Health Mid Wife or Nursing Officer if the baby is not moved for 10 times during 12 hours.
- 10 movements for a day is enough for the day.
- The time period between 2 kicks should less than 3 hours

Fetal movement chart

Name: Age:

No. of pregnancy:

Weeks	36							37							38							39						
Date																												
Time started																												
1																												
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
Time finished																												

10.5 Urine testing at the clinic setting

Urine analysis using two para reagent strip

Reagent strip is a dip and read test strip and intended for use as an in vitro diagnostic aid using urine specimens. The strip contains solid phase reagent areas affixed to a plastic support and is provided in a dry reagent format. The strip provides qualitative and semi quantitative test for glucose and protein by the visual comparison with colour charts of each concentration range.

Specimen collection

Specimens were collected at the clinic. A clean, dry vessel was provided to collect the urine. Tests were done as soon as possible after collection.

Procedure

1. Confirmed that the product was within the expiration date shown on the label
2. The strip was removed from the bottle and the cap was replaced immediately.
3. The strip was inspected for dis-colouration or darkening of reagent areas. Changes may indicate deterioration. Such strips did not use.
4. The test strip was dipped completely for no more than 1 second in fresh, well mixed and un-centrifuged urine specimen. The excessive urine was removed by touching the plastic film on the rim of the vessel.
5. The test results were compared carefully with the colour chart on the bottle label in good light.
6. Proper reading time (30-60) seconds is critical for optimal results.
7. While comparing, to strip was kept in horizontal position to avoid possible interactions of chemicals by excessive urine. Changes in colour that appeared only along the edges of the test areas or after more than two minutes were of no diagnostic significance.

Coagulation test for protein

Necessary equipment: Clean bottle, two test tubs, Spirit Lamp, Test tube holder, Acetic acid, Pipette

Procedure

Collect urine into a clean bottle and fill 2/3 of the test tube with collected urine

Heat the upper part of the tube till urine gets boiled

If the heated part gets cloudy, add 4 – 5 drops of acetic acid

Heat again. If the cloudiness disappears it is due to urinary phosphates and it is not significant.

If the cloudiness continues it is due to urinary albumin.

Results should be as follows.

Negative

Trace

Positives + 1 to + 4

Normal result should be negative.

Benedict's test for urine sugar

Necessary equipment: as for the heat test and Benedict's reagent

Procedure:

Put 2.5 ml of Benedict's solution to a test tube.

Add 8 drops of urine. Heat this mixture for 2 minutes.

Put the tube in the test tube holder till the tube gets cooled.

The colour of urine will change from green to brick red depending on the amount of sugar in urine.

The results should be as follows.

Negative – clear blue

If present – Green , Yellow, Orange, Brick red

10.6 Antenatal screening for syphilis: Guidelines for sample collection, storage and transportation

Screen all pregnant women for syphilis at the first antenatal visit preferably 6-8 weeks to prevent congenital infection. For high risk mothers, re- testing should be offered in the third trimester.

Record POA of screening, place of testing, testing results and treatment in the pregnancy record (H512 A&B)

Laboratory testing facilities should be arranged in the nearest STD clinic/ government institution with the help of RDHS/MOMCH.

Educate all mothers and their partners of the importance of screening for syphilis during pregnancy to avoid adverse pregnancy outcomes.

VDRL test is the screening test use to screen for syphilis in the maternal care programme in Sri Lanka. It is carrying out as a joint activity with National STD AIDS control programme.

Sample collection, storage and transportation

1. Blood drawing should be done by MOH, MO, RMO/AMO, PHNS or Nurse. If it is a field clinic, either MOH or PHNS should draw blood. When STD clinic team visit ANCs for blood drawing either MO/STD, nurse or MLT may draw blood.

2. Disposable syringes should be used to draw blood and 5cc blood should be taken in to a tube or a plane bottle. Label the sample with reference number date and time of collection. It should be kept in room temperature for at least 2 hours.
3. If it is sent within 12 hours to the laboratory no need to keep in the refrigerator or no need to use special carriers for transportation. If not, keep the collected samples in the main compartment of the refrigerator and sent to the laboratory in a vaccine carrier within three days. Given specimen forms should be used. There should be prior arrangement before sending samples to STD lab. There should be a separate carrier for sample transportation.

4. In the STD laboratory if the test is not done on the same day serum should be separated and can be kept maximally one month in the main compartment of the refrigerator. (Not in the freezer compartment)

5. Transport method will be either MOH vehicle or STD vehicle depending on the availability and feasibility or else through a messenger.

6. Result of the screening test will be conveyed to PHM through the MOH and positive cases will be referred to STD clinic and confirmatory test will be done there. Results of the confirmatory test will be conveyed to MOH and Syphillis confirmed mothers will be followed up by MO/STD.

7. MOMCH and MO/STD should meet quarterly and discuss the matters related to antenatal syphillis screening.

8. VDRL test will be the first choice for syphilis screening and in areas where facilities not available rapid test can be recommended by FHB and NSACP.

Mothers whose screening test is positive should be contacted and sent to STD clinic with a properly written referral letter. Confidentiality has to be maintained. When the mother is seen in the STD clinic a second sample will be collected for re-confirmation after counselling. If the second sample is positive, the mother will be counseled and treated appropriately.

If the woman was not tested during pregnancy, syphilis screening should be offered after delivery (preferably using a rapid test).

10.7 Estimating Haemoglobin levels using a colour scale

1. Use only approved test strips for the colour scale.

2. Add a drop of blood to one end of a test strip just enough to cover completely an aperture in the colour scale.

3. Wait about 30 seconds; then read immediately by comparing the blood stain with the Colour Scale to find the best colour match.

    - Keep the test strip close to the back of the Colour Scale
    - Avoid direct sunlight
    - Avoid marked shade
    - Avoid your own shadow or any other shadow

4. If the blood stain matches one of the shades of red exactly, record the haemoglobin value. If the colour lies between two shades, record the mid- value. If in doubt between two shades, record the lower value.

5. Discard the test strip after use. Wipe the back surface of the Scale at the end of each session or if it became soiled during the use.

Chapter 11

NUTRITION DURING PREGNANCY AND LACTATION

Nutrition during the preconception period as well as throughout the pregnancy has a profound influence on the course and outcome of the pregnancy as well as mother's performance during lactation. The association between pre pregnancy weight and BMI, total weight gain and the rate of weight gain in pregnancy and the pregnancy outcome is significant. Weight gain in the second half (after 20 weeks) of pregnancy has more pronounced effect on the growth and the birth weight of the baby. Poor weight gain especially in the third trimester is associated with low birth weight of the baby.

Low birth weight is associated with a higher incidence of infant mortality and morbidity, poor cognitive development and learning disabilities. They are also at a higher risk of been subjected to the non-communicable disease such as heart disease, hypertension and diabetes mellitus in later life. Thus , it appears future health of mankind depends to a greater extent on the nutritional foundation laid during the prenatal life. Therefore, nutrition of the pre pregnant women as well as the pregnant mothers should receive utmost attention in order to have a baby with a good birth weight.

Nutrition and care during Pre pregnancy

Pre pregnancy weight and BMI are strongly linked with the pregnancy outcome. Therefore, nutrition and care of the pre pregnant woman is an essential component in the strategy for low birth weight reduction. The existing health care system offers following services to improve the nutritional and health status of the pre pregnant woman.

- Early identification of couples getting married and provision health services and health education
- Registration of all eligible couples by PHM and provision of necessary services.
- Nutritional assessment and take necessary actions:
    - Check Body Mass Index (BMI) do necessary interventions according to the BMI
    - Do Haemoglobin estimations and if anaemic, take necessary actions

The women who intend to become pregnant should be advised that their nutritional status should be optimal at the time of conception for a successful pregnancy.

Provide Folic acid 5mg daily, for women who expecting a pregnancy.

Ascertain that they have protected with Rubella immunization.

Management of pre-pregnant women with a BMI less than 18.5kg/m^2

- Take 24 hour dietary recall and assess adequacy of diet (calorie, protein and micronutrient)
- Nutrition counseling on appropriate diet.

  -Help to modify diet by increasing amount of starch based foods such as rice, manioc, other cereals, flour based foods at each meal

  -Consuming 1-2 extra meals than other days

  -Using 1-2 table spoonful of oil

  -Including fish/dried fish/egg, pulses, vegetables and green leaves to daily diet

- Asses dietary habbits, food taboos, misconceptions and correct if there are any negative one
- Excessive work load may have an influence on the weight gain. Therefore, assess the workload and act accordingly
- Screen for the presence of any illnesses by referring to the MOH
- Follow up and monitor weight gain monthly
- If weight gain is inadequate after 6 months refer to MOH for further advice.

Management of pre- pregnant women with BMI more than 24.9 kg/m^2

- Take 24 hour dietary recall and assess adequacy / excessive consumption of diet (calorie, protein and micronutrient)
- Nutrition counseling on appropriate diet. (to reduce starch, fats, & sugar)
- Emphasize the importance of regular exercise
- Assess dietary habits, food taboos, myths and misconceptions and correct if there are any negative ones.
- Should be screened for Diabetes Mellitus, Hypertension, Hypercholesteraemia by referring to the MOH.
- Follow up and monitor weight gain monthly
- If weight reduction is inadequate after 6 months refer to MOH for further advice.

Nutritional requirements and advice during pregnancy

Pregnant women should be advice to consume variety of locally available healthy foods containing adequate amounts of cereals, yams, animal foods, pulses, vegetables, green leaves, fruits and milk to meet increasing nutritional demands in pregnancy. Mothers should be encouraged to consume 3 nutritious main meals supplemented by one or two additional small meals. They should be advised to consume **additional** ½ a spoonful (spoon made of coconut shell) of rice at each meal with additional amounts vegetables green leaves, pulses and cereals.

The amount of food a woman should consume during pregnancy varies according to her level of physical activity and her BMI at the start of pregnancy. The calorie and other nutritional requirement during pregnancy is stated in the table. The daily menus should be planned to in-cooperate all the essential nutrients using locally available food items.

	Age of woman		**Additions for**	
	16-17yrs	**18-30yrs**	**Pregnancy**	**Lactation**
Energy, kcals	2150	1750	360	700
Protein, g	44	44	7+	19+
Vitamin A, µg	750	750	-	450
Vitamin D, µg	2.5	2.5	7.5	7.5
Thiamin, mg	0.9	0.8	0.14	0.30
Riboflavin, mg	1.3	1.3	0.21	0.45
Niacin, mg	14.2	13.2	2.31	4.95
Folic Acid, µg	200	200	200	100
Vitamin B_{12}, µg	2.0	2.0	1.0	0.5
Ascorbic acid, mg	30	30	20	20
Calcium, mg	600	500	600	600
Iron, mg	28	28	60	60
Zinc, mg	22	22	5	22

The recommended daily dietary allowances during pregnancy

Mothers who need close monitoring and evaluation

- Low pre pregnancy BMI (< 18.5kg/m^2)
- Higher pre pregnancy BMI (≥25kg/m^2)
- Multiple pregnancies
- Anaemic pregnant women
- Short interval pregnancies
- Teenage pregnancies
- Pregnant while lactation
- Pregnant women with various social problems such as economically deprived, single, unmarried, subject to domestic violence, displaced.
- Pregnant women with infections such as malaria, TB, intestinal infections, STD, HIV
- Pregnant women with medical disorders like Type I & II Diabetes, gestational diabetes, PIH, Thalassemia.
- Weight gain of < 1 kg/ month for women with normal BMI <0.5 Kg for women who are overweight.
- Gain of more than 3 Kg per month for any pregnant women

Management of a pregnant woman with a BMI less than 18.5kg/m^2 at first trimester or inadequate weight gain

- Measurement error has to be eliminated as a cause for inappropriate weight gain
- Take 24 hour dietary recall and assess adequacy of diet (calorie, protein and micronutrient)
- Assess dietary habits, food taboos, misconceptions and correct if there are any negative ones
- Nutrition counseling on appropriate diet:

  Help to modify diet by increasing amount of starch based foods such as rice, manioc, string hoppers etc at each meal
  Consuming 1-2 extra meals than other days
  Using 1-2 table spoonful of oil
  Including fish/dried fish/egg, pulses, vegetables and green leaves to daily diet

- Thriposha 2 packets monthly (to eat 50grams a day mixed with two teaspoons each of sugar and coconut). Assess the compliance
- Prevent anaemia (Refer the Genral circular No. 1945 on prevention of maternal anaemia page 100)
- Micronutrients (Iron folate, vitamin C and Calcium) daily after the 1st trimester.
- Give worm treatment.
- Assess the compliance of micronutrients and worm treatment.

- Assess and educate on factors other than dietary which could affect the maternal weight gain
    - Assess the help to reduce the house hold work load and heavy manual work. Educate the husband and the family.
    - Assess the mental support she possess and educate regarding the association between maternal mental relaxation and fetal well being
    - Assess the exposure to house hold smoke and passive tobacco smoke
    - Look for any other illnesses from which the mother suffers: eg; Urinary tract infections, parasitic infections, medical illnesses (Hypertension, DM). Refer to MOH where necessary.
    - Improve the quality of antenatal care received by the mother.
- Follow up monthly
- If weight gain is inadequate, refer to MOH

Assessment and management of the nutritional status of overweight or obese pregnant women

1. Assess to modify dietary habit;

- Take 24 hour dietary recall and give necessary advice accordingly (to reduce starch, fats, & sugar).
- Assess dietary habits, myths and misconceptions. Correct if there are any.
- Educate regarding the expected weight gain.
- Follow the different dietary menus provided
- Attain high coverage of micronutrients

2. They should be explained the importance of regular exercise in weight management.

3. Following advantages of weight management should be explained to them.
    - Reduces the risk of hypertension, preeclampsia, gestational diabetes,
    - Reduces the risk of obstetric complications such as prolonged labour, and postpartum haemorrhage.

4. Over nourished mothers should be screened for gestational diabetes, pregnancy induced hypertension and fetal wellbeing.

Nutrition and care of the lactating mother

Nutrition during postpartum period is extremely important due to following reasons:

i. To replenish the lost nutrients during pregnancy and labour
ii. Mothers should exclusively breast feed the child till 6/12.
iii. As the principle care taker of the infant, mother needs additional calories for her day to
day activities geared towards survival, growth and psychosocial development of the child.
iv. To ensure health & nutrition throughout the life time.

Lactating mothers should be:

- Provided with postpartum Vitamin A megadose 200,000 IU supplementation within 4 weeks of delivery
- Educated on diet
    - Extra serving of starch based foods at each meal
    - Consume extra piece of fish/egg/dried fish, extra serving of pulses, vegetables and green leaves daily
    - Fat (oil, butter, margarine) 1 tea spoonful
    - Fruits : ½ riped bananna / any fruit like wood apple, Nellie, mangoes that is locally available
- Give Ironfolate/ iron+ folic acid, Vitamin C and Calcium for a period of six months
- Provide Thriposha 2 packets
- Educate on importance of attending postpartum clinics
- Asses and support breast feeding
- Special follow up of children born with Low Birth Weight
  (Refer the section on nutrition in the postpartum guide)

Chapter 12

COMMON DISCOMFORTS DURING PREGNANCY

Nausea and morning sickness

Nausea is very common in early weeks of pregnancy. Advice women:

- If you feel sick first thing in the morning, give yourself time to get up slowly. If possible, eat something like dry toast or a plain biscuit before you get up. Then drink a tea without milk.
- Get plenty of rest and sleep whenever you can. Feeling tired can make the sickness worse.
- Drink plenty of fluids. Take small amount at a time. Eat sugar less biscuits
- Ask those close to you for extra support.
- Distract yourself as much as you can. Often the nausea gets worse the more you think about it.
- Avoid the foods and smells that make you feel worse. It helps if someone else can cook.
- Remedies containing ginger may be helpful.
- Wear comfortable clothes. Tight waist bands can make you feel worse

Back ache

During pregnancy ligaments become softer and stretch to prepare for labour. This can put a strain on the joints of the lower back and pelvis which can cause backache. As the baby grows, the hollow in the lower back may increase and this may also cause backache.
Advice:

To avoid backache;

- Avoid heavy lifting
- Bend your knees and back straight when lifting or picking up something from the floor.
- If you do have to carry something heavy, hold it close to your body.
- Move your feet when turning round to avoid twisting your spine
- Wear flat shoes as these allow your weight to be evenly distributed
- Work at a surface high enough to prevent you stooping
- Try to balance the weight between two baskets if you are carrying shopping.
- Sit with your back straight and well supported.

A firm mattress can help to prevent and relieve back ache. If the mattress is too soft, a piece of hardboard under its length will make it firmer. Massage also can help. If the backache is very painful meet a doctor.

Pelvic pain

Pelvic pain especially if lateral and referring to the upper thighs are usually due to ligamentous stretch. They require reassurance only. Pain is reproduced by gentle sideways traction on an otherwise non-tender and soft womb. Low back pain is common due to altered posture; but also to the effects of the hormone relaxing on ligaments, allowing excessive movement of sacro-illiac and apophyseal joints. A regular exercise program, preferably swimming, with physiotherapy as required, complements postural back care. Some women develop symphysis-pubis pain, especially. If coexistent scoliosis, and may a s-p corset, obtainable through physiotherapy departments.

Urinary Frequency

It is an early sign of pregnancy. Sometimes it continues right throughout the pregnancy. Urinary frequency is common but should be investigated as 8% of pregnant women will have otherwise asymptomatic UTIs. In later pregnancy it's the result of the baby's head pressing on the bladder.

- Try cutting out drinks in the late night but make sure that plenty drinks during daytime
- Later in pregnancy, rock backwards and forwards while they are on the toilet. This lessen the pressure of the womb on the bladder

Dysuria

If a pregnant woman has any pain while passing urine or pass any blood, she may have a urine infection which will need treatment. Ask her to drink plenty of water to dilute the urine and reduce irritation and refer her to a doctor immediately.

Incontinence

Sometimes pregnant women are unable to prevent a sudden spurt of urine or a small leak when moving suddenly or just getting up from a sitting position. This may be temporary because the pelvic floor muscles relax slightly to prepare for the baby's delivery. Pelvic floor exercises will improve the condition.

Swollen ankles, feet and fingers

Ankles, feet and fingers often swell a little in pregnancy because the body holds more water than usual. Ankle oedema may relate to compression of inferior vena cava and to vasodilatation due to increased hormones. Towards the end of the day, especially if the weather is hot or if standing for a long time, the extra water tends to gather in the lower parts of the body. If no associated proteinuria or hypertension, it is best treated by

- Try to avoid standing for long periods
- Wear comfortable shoes
- Put your feet up as much as you can – try to rest for an hour a day with your feet higher than your heart

- Try to do foot exercise
- Take celery – natural diuretic or vitamin B6
- Confirm the number of fetuses

Varicose veins

Varicosities occur due to compression of inferior vena cava and vasodilatation due to increased hormones. The veins in the legs are most commonly affected. Some may get varicose veins in the vulva. They usually relieve after confinements.

- The early use of support stockings is wise; wear stockings before getting down from the bed, the short term use of pelvic elevation and ice packs can ease the symptoms of vulvar varicosities.
- Try to avoid standing for long periods of time
- Try not to sit with legs crossed
- Try not to put on too much weight as this increases the pressure
- Try to sleep with your legs higher than the rest of your body- use pillow under your ankles or put bricks or books under the foot of your bed
- Do foot exercise

Heartburn and indigestion

Heartburn and indigestion is partly due to hormonal changes and later due to gastro-oesophageal reflux combined with increased abdominal pressure. Postural and dietary advice with the use of antacids settles most, but occasionally H2 antagonists are required.

To avoid indigestion:

- Try eating smaller meals more often
- Sit up straight when you are eating as this takes the pressure off your stomach
- Avoid particular foods which cause trouble, for example fried or highly spiced ones, but make sure you are still eating well

To avoid heart burn:

- Sleep well propped up – try raising the head of your bed with bricks or have plenty of pillows
- Try drinking a glass of milk – have one by your bed in case you wake with heartburn in the night
- Avoiding eating or drinking for a few hours before you go to bed

Constipation

Constipation can occur early so at least in part is due to hormones, but is aggravated by enlarging pelvic contents. With the vasodilatation and compression of pelvic veins this may result in haemorrhoids.

- Make sure you include plenty of fibre in your diet through eating foods like whole meal breads, whole grain cereals, fruit and vegetables, and pulses such as beans and lentils.
- Exercise regularly to keep your muscles toned up
- Make sure you drink plenty of water
- If laxatives are needed they should be of the fibre based type eg. Fybogel

Dental decay and periodontal disease

Dental decay and periodontal disease accelerate in pregnancy and should be reviewed by a dentist as early as possible. To keep your teeth and gums healthy, you should:

- Pay special attention to cleaning your teeth.
- Avoid having sugary drinks and foods too often. Try to keep them only to meal times.

Skin changes

Hormonal changes taking place in pregnancy make the nipples and the areola darker. The skin colour may also darken a little, either in patches or all over. Birth marks, moles and freckles may also darken. Some women develop a dark line down the middle of the abdomen (Linea Nigra). These changes will gradually fade after the delivery. Skin changes such as chloasma and spider naevi, also disappear after the pregnancy.

Stretch Marks

These are pink or purplish lines which usually occur on the abdomen or sometimes on the upper thighs or breasts. Some women get them, some don't. It depends on the skin type. Women with more elastic skins don't get them. Women with more than average weight gain, more prone to get them. It is very doubtful whether oils or creams help to prevent stretch marks. After delivery the marks should gradually pale and become less noticeable.

Hair Changes

Hair growth is also likely to increase in pregnancy. The hair may also ne greasier. After the delivery it may seem that a woman is losing a lot of hair. In fact she is simply losing the increase that occurred during pregnancy.

Itching

Itching occurs in 17% gravid women. Interestingly, 50% women with atopic dermatitis improve during pregnancy. If no rash, consider iron deficiency, or the potentially more serious cholestatsis of pregnancy. Antihistamines may be helpful.

Stretch marks may occur when growth has been rapid. The dryness and irritation may be erased by vegetable oil or Vitamin E cream and soap avoidance.

Cramps

Cramp is Sudden, sharp pain, usually in your calf muscles or feet. It is most common at night. It usually helps if you pull your toes hard up towards your ankle or rub the muscle hard. Regular, gentle exercise in pregnancy, particularly ankle and leg movements, will improve your circulation and may help to prevent cramp occurring.

Tiredness

In the early months of pregnancy, a woman may feel tired or even desperately exhausted. The only answer is to try to rest as much as possible. Make time to sit with feet up during the day and accept any offers of help from colleagues and family. Towards the end of pregnancy, she may feel tired because of the extra weight carrying. Make sure that she gets a plenty of rest.

Faintness:

Pregnant women often feel faint. This happens when not enough blood is getting to the brain. If the oxygen level gets too low, she may actually faint. It's more common in pregnancy because of hormonal changes taking place in her body. She is most likely to feel faint if she stand still for too long or get up too quickly from a chair.

- Try to get up slowly after sitting or lying down
- If feel faint when standing still, find a seat quickly and the faintness will pass. If it doesn't lie down on side.
- If feel faint while lying on her back, turn on side. It's better not to lie flat on back in later pregnancy or during labour.

Headaches

Some pregnant women get lots of headaches. A brisk walks may be all they need as well as a little more regular rest and relaxation. Although it is wise to avoid drugs in pregnancy, an occasional paracetamol tablets is generally considered safe. If she often has bad headaches meet a doctor. It may be a sign of hypertension.

Feeling hot in pregnancy:

During pregnancy you are likely to feel warmer than normal. This is due to hormonal changes and to increase in blood supply to the skin.

- Wear loose clothing made out of natural fibres, as these are more absorbent and breathe more than synthetic fibres.

- Keep your room cool
- Wash frequently to stay fresh

Vaginal discharge

Almost all women have more vaginal discharge in pregnancy. It should be clear and white and it should not smell unpleasant. If the discharge is colored, or smells strange, or if feel itchy or sore, it may be a vaginal infection. Refer her to a doctor. Ask her to wear loose cotton underwear.

Sleeplessness

Late in pregnancy it can be very difficult to get a good night's sleep. She is uncomfortable lying down or just when she is beginning to comfortable, she may have to get up to go to the toilet. Some women have strange dreams or nightmares about the baby and about the birth. Talking with them can help to alleviate their fears. The relaxation and breathing exercises which are taught in parent crafting classes might be helpful.

If you are not sleeping well:

- Try not to let it bother you. Don't worry that it will harm your baby- it won't
- It might be more comfortable to lie on one side with a pillow under your tummy and other between your knees.
- Relaxation technique may help.
- A warm milky drink, a warm bath, some gentle exercise or some restful music before bedtime may help
- A rest during the day can help you to feel less tired.
- Talk to your partner or family or midwife.

Respond to observed signs or volunteered problems

If no fetal movements

Ask, check & record	Look, listen, feel	Signs	Classify	Treat and advice
When did the baby last move? If no movement felt, ask woman to move around for some time, reassess fetal movements	Feel for fetal movements Listen for fetal heart after 6 months of pregnancy If no heartbeat, repeat after 1 hour	No fetal movement No fetal heart beat	**Probably dead baby**	Inform the mother and the partner about the possibility of dead baby. Refer to hospital.
		No fetal movements but fetal heart beat present	**Well baby**	Inform the mother that baby is fine and likely to be well but to return if problem persists.

If ruptured membranes and no labour

Ask, check & record	Look, listen, feel	Signs	Classify	Treat and advice
When did the membranes rupture? When is your baby due?	Look at pad or under wear for evidence of: amniotic fluid, Foul-smelling vaginal discharge If no evidence, ask her to wear a pad. Check again in 1 hour. Measure temperature.	Fever 38^0C Foul smelling vaginal discharge	**Uterine and fetal infection**	Give appropriate IM/IV antibiotics Refer urgently to hospital
		Rupture of membranes at < 8 months of pregnancy	**Risk of uterine and fetal infection**	Give appropriate IM/IV antibiotics Refer urgently to hospital.
		Rupture of membranes at > 8 months of pregnancy	**Rupture of membranes**	Manage as woman in childbirth.

If fever or burning on urination

Ask, check & record	Look, listen, feel	Signs	Classify	Treat and advice
Have you had fever? Do you have burning on urination?	If history of fever or feels hot: - Measure axillary temperature - Look or feel for stiff neck - Look for lethargy Percuss flanks for tenderness	Fever >38^0C and any of: - very fast breathing or - Stiff neck - Lethargy - Very weak/not able to stand	**Very severe febrile disease**	Insert IV line and give fluids slowly Give appropriate IM/IV antibiotics Give quinine IM Give glucose Refer urgently to hospital
		Fever >38^0C and any of: - Flank pain - Burning on urination	**Upper Urinary Tract Infection**	Give appropriate IM/IV antibiotics Refer urgently to hospital
		Burning on urination	**Lower Urinary tract Infection**	Give appropriate oral antibiotics Encourage her to drink more fluids In no improvement in 2 days or condition is worse, refer to hospital

If cough or breathing difficulty

Ask, check & record	Look, listen, feel	Signs	Classify	Treat and advice
How long have you been coughing? How long have you had difficulty in breathing? Do you have chest pain? Do you have any blood in sputum? Does your husband smoke?	Look for breathlessness. Listen for wheezing. Measure temperature.	At least 2 of the following signs: -Fever >38^0 C. -Breathlessness. -Chest pain	**Possible Pneumonia**	Give first dose of appropriate IM/IV antibiotics Refer urgently to hospital.
		At least 1 of the following signs: - Cough or breathing difficulty for > 3 weeks - Blood in sputum. - Wheezing	**Possible Chronic Lung Disease**	Refer to hospital for assessment. If severe wheezing, refer urgently to hospital.
		Fever >38^0 C, and Cough < 3 weeks	**Upper Respiratory Tract Infection**	Advise safe, soothing remedy. Advice to avoid passive smoking.

Chapter 13

NATIONAL GUIDELINES FOR PREVENTION AND CONTROL OF MATERNAL ANAEMIA

1. Advice pregnant women to add food items abundant with iron for their meals.

Women should be encouraged to consume not only animal foods rich in iron such as meat and fish, but also green leafy vegetables and lentils such as green grams, dhal and chick pea. They should be encouraged to consume foods which are enhanced the absorption of iron, such as citrus fruits and animal foods with plant foods. They should be discouraged to consume foods such as milk and tea which inhibit the absorption of iron from plant sources during meals or within one hour of meal.

2. Supplementation of iron-folate during pregnancy and lactation

All pregnant women should receive iron and folic acid with Vitamin C after POA of 12 weeks for 6 months during pregnancy and 6 months after delivery. A pregnant/lactating woman needs a 60mg of elementary iron and 400µg of folic acid per day. This can be given as follows:

- **i.** Give one tablet of iron-folate (60mg iron + 400µg of folic acid) per day. (This tablet is distributed by FHB.)
- **ii.** When iron-folate tablets are not available, give 200mg of ferrous sulphate (1 tablet) and 5mg of Folic acid (1 tablet) per day. (These tablets are available in MSD).
- **iii.** Give 50mg of Vitamin C with iron folate/ ferrous sulphate which enhance the iron absorption. Calcium tablets, foods containing calcium or tea or milk which inhibits iron absorption should not be taken within 1 hour of taking iron tablets.
- **iv.** During first trimester, all pregnant women should be taken one tablet of folic acid (5mg). Ideally folic acid should be started at the time, the couple decided to have a child (pre-conception folic acid supplementation). Mothers, who have a history of having children with neural tube defects, should take folic acid till next pregnancy.

Mother should be informed about possible side effects of iron intake such as vomiting, nausea, loss of appetite before prescribing iron tablets. As these tablets contains very low dose of iron, side effects may be mild. However, mothers should be informed how to reduce side effects, if they occurred.

All mothers should receive required number of micronutrient tablets till next clinic visit at once.

Next clinic visit	**No. of iron folate / iron/ folic acid tablets**	**No.of Vit C.(50mg) tablets**
After 1 month	30	30
After 2 weeks	14	14
After 1 week	07	07

Iron tablets should be stored in dark colored air tight bottles to prevent oxidation. All the women should be advised to bring a dry container to carry micronutrients.

Women should be made aware on enhances and inhibitors of iron absorption.

Compliance of taking micronutrients should be assessed during each clinic visit and home visits. If there is any problem with compliance, act accordingly.

3. Detection of anaemia during pregnancy

All pregnant mothers should offer Hb testing at the booking visit and at 28weeks. Classification of anaemia based on Hb levels as follows:

Hb > 11g/dl	No anaemia
Hb 7-11g/dl	Moderate anaemia
Hb < 7g/dl	Severe anaemia

Actions should be taken according to the table given below.

Ask, check, record	**Look, listen, feel**	**Signs**	**Classify**	**Treat and advice**
Do you tire easily? Are you breathless (short of breath) during routine household work?	**On first visit:** Measure Hb **On subsequent visits:** Look for conjunctival pallor Look for palmar pallor. If pallor: - Is it severe pallor? - Some pallor - Count No. of breaths in a minute	Haemoglobin <7mg/dl **And/or** Severe palmar and conjunctival pallor or Any pallor with any of - >30 breaths per minute - tires easily - breathless at rest	**Severe Anaemia**	Refer urgently to hospital. Revise the birth plan so as to deliver in a facility with blood transfusion services. Give double dose of iron for 3 months and monitor the progress Counsel on compliance with treatment. Give worm treatment and oral antimalarial treatment appropriately. Follow up in 2 weeks to check clinical progress, test results, and compliance with treatment.
		Haemoglobin 7-11mg/dl Or Palmar or conjunctival pallor	**Moderate Anaemia**	Give double dose of iron for 3 months and monitor the progress. I Counsel on compliance with treatment. Give worm treatment and oral antimalarial treatment appropriately. Reassess at next antenatal visit. If anaemia persists without any improvement in Hb levels, refer to hospital. Once Hb levels become normal continue with single dose of iron (60mg of elementary iron)
		Haemoglobin >11mg/dl. No pallor.	**No clinical anaemia**	Give iron 1 tablet once daily for 6 months. Counsel on compliance with treatment.

4. Control of infections related to anaemia

i. Control and treatment for intestinal worm infestations

All pregnant mothers should receive worm treatment with Mebendazole just after completion of 12 weeks of POA.

Dosage: Mebendazole 100mg twice a day for 3days or

Mebendazole 500mg as a single dose

Mothers should be informed regarding other preventive methods of worm infestations such as use of sleepers, proper construction and use of toilets, use of safe water, washing hands before meals and after toileting.

ii. Control and prevention of malaria

As malaria is low prevalent disease in Sri Lanka, It is not recommended the routine prophylaxis treatment for pregnant mothers even in the endemic areas. Prophylaxis should be decided by the MOH/ MO after considering the malaria status in the area. If decided on malaria prophylaxis the regime is:

- Chloroquine 300mg (2 tablets) weekly after meal during second and third trimesters and 42 days after delivery

- At the booking visit, all pregnant mothers in endemic areas should be tested for malaria using a blood smear.

- In a malarial endemic area, if a pregnant mother is suffering from fever, she should be tested for malaria. If she is positive for malaria, she should be given the complete course of Chloroquine as follows:

  Day 1 – Chloroquine 600mg (4 tablets)

  Day 2 – Chloroquine 600mg (4 tablets)

  Day 3 - Chloroquine 300mg (2 tablets)

After that Chloroquine prophylaxis should be continued the rest of the pregnancy and postpartum period. Primaquine should not be given during pregnancy and postpartum period.

5. Information, education and communication

It is important to understand the knowledge, attitudes and practices on anaemia in the community, as control and prevention of anaemia is closely link with the practices of the people. Therefore, well organized and targeted health education program is essential.

These health education programs should be targeted to important groups such as adolescent girls, working women, women in urban slums, estate women and displaced women.

6. Ordering, receiving and storage of drugs needed for the maternal care program

The drugs needed for the program of prevention of anaemia are iron, iron folate, folic acid, vitamin C (ascorbic acid), mebendazole (worm treatment) and chloroquine. It is important to prepare the estimation properly to order drugs and it should be done at the level of MOH/ RDHS or medical institution.

Drug Estimation

Estimated No of Pregnant women = Total Population x CBR

Iron/ ironfolate tablets

No. of Ironfolate/ Iron tablets required for a MOH area =

(Estimated No. of pregnant mothers for the year × 360 days × 1 tablet)

(After first 12 weeks during pregnancy and 6 months after delivery)

Folic acid

When iron and folic acid are in combination, folic acid should be estimated only for the first 3 months of pregnancy.

When Iron folate is available

Requirement of folic acid =

Estimated No. of pregnant mothers X 90days X 1 tablets

When Iron tablets are available

Requirement of folic acid =

Estimated No. of pregnant mothers for the year × 450 days × 1 tablet)

(During pregnancy 270 days during pregnancy + 180 days after delivery)

Calcium lactate

No. of calcium lactate tablets required for a MOH area =

Estimated No. of pregnant mothers for the year × 360 days × 1 tablet)

(After first 12 weeks during pregnancy and 6 months after delivery)

Mebendazole

Requirement of Mebendazole (100mg)=

(Estimated No. of pregnant mothers for the year × 6 tablets)

Requirement of Mebendazole (500mg) =

(Estimated No. of pregnant mothers for the year × 1 tablets)

The estimation for the entire district should be prepared by summarizing the estimates from the MOH areas. It should be included in the yearly drug estimation. Ordering of micronutrients should be done in similar way as other drugs in medical institutions. The number of inward mothers taking treatment and number mothers attending the clinic should be taken in to consideration while preparing the estimation.

The drugs should be stored in dark dry place to avoid oxidization and destruction. The regional suppliers division to MOH office and clinic should follow these instructions.

When issuing drugs, the calculation of drugs should be done in retail at each level (medical suppliers division, MOH office, and clinic) and a record should be maintained in each clinic at the end of the day.

e.g.

Date	Amount in hand	No of mothers attended	Amount issued	Balance

Receiving of drugs, distribution, storage and issuing should be supervised by MOMCH/ an officer appointed by RDHS when this post is vacant.

The RDHS, MOH, MOMCH, head of the institution and other supervisory officers such as public health nursing officer (PHNS) and supervising public health mid wife (SPHM) are responsible for supervisory work at clinic, field and institutional level.

All the activities in this program should be monitored, supervised and evaluated at regional level as well as district level. It is a responsibility of the supervisory committee of the region and MOMCH at district level.

Chapter 14

MANAGEMENT OF HIGH BLOOD PRESSURE DURING PREGNANCY AT FIELD LEVEL

Ask, check &record	Look, listen, feel	Signs	Classify	Treat and advice
Blood pressure at the last visit?	Measure blood pressure in sitting position. If diastolic blood pressure is ≥90mmHg, repeat after 1 hour rest. If diastolic blood pressure is still ≥90mmHg, ask the woman if she has: ▪ Severe headache ▪ Blurred vision ▪ Epigastric pain ▪ Check protein in urine	Diastolic blood pressure ≥110 mmHg and 3+ proteinuria, or Diastolic blood pressure ≥90 mmHg on two readings and 2+ proteinuria, and any of: ▪ Severe headache ▪ Blurred vision ▪ Epigastric pain	**Severe pre-eclampsia**	**Refer Urgently to hospital**
		Diastolic blood pressure 90-110 mmHg on two readings and 2+ proteinuria.	**Pre-eclampsia**	Refer to hospital immediately.
		Diastolic blood pressure ≥90 mmHg on 2 readings	**Hypertension**	Advise to reduce workload and to rest. Advise on danger signs. Reassess at the next antenatal visit or in 1 week if >8 months pregnant. If hypertension persists after 1 week or at next visit, refer to hospital.
		None of the above.	**No Hypertension**	No treatment required.

Chapter 15

GUIDELINES ON IMMUNIZATION AGAINST TETANUS

Introduction

Tetanus is a fatal infectious disease caused by toxigenic strains of Clostredium Tetani. Tetanus and neonatal tetanus is still a major public health problem in a considerable number of developing countries. However, both tetanus and neonatal tetanus have reached elimination levels in Sri Lanka as a result of the successful immunization programme.

Protection against tetanus toxoid could be achieved either through active immunization (by giving tetanus toxoid containing vaccine) or by passive immunization (by giving tetanus specific immunoglobin). Neonatal tetanus is prevented by immunizing the pregnant mothers with tetanus toxoid vaccine.

Tetanus vaccines are based on tetanus toxoid which is a chemically inactivated tetanus toxin which could induce production of antibodies against tetanus toxin. Tetanus toxoid is available as monovalent tetanus toxoid (TT), combined diphtheria, pertussis, tetanus, hepatitis B and Hib vaccine (pentavalent vaccine), combined diphtheria and pertussis, tetanus vaccine (DPT), combined diphtheria, tetanus vaccine (DT) or as adult tetanus diphtheria vaccine (aTd).

The goal of tetanus immunization in the Expanded Programme of Immunization (EPI) programme is to eliminate tetanus and neonatal tetanus from Sri Lanka. With the emergence of new knowledge on immunological response of patients after receiving tetanus toxoid, the following recommendations have been made regarding immunization with tetanus containing vaccines.

1.) Pre exposure immunization against tetanus

1.1) Immunization from infancy up to adolescence

Dose	Age (on completion of)	Vaccine	Duration to be kept between different doses of tetanus containing vaccine when tetanus toxoid containing vaccines have not been received according to the scheduled age
1st	2 months	Pentavalent or DPT	6-8 weeks between 1. 1st and 2nd dose 2. 2nd and 3rd dose
2nd	4 months		
3rd	6 months		
4th	18 months	DPT	12 months between 3rd and 4th doses
5th	5 years	DT	3 years between 4th and 5th doses
6th	12 years(in grade 7, during SMI)	aTd	7 years between 5th and 6th doses

1.2) Immunization during pregnancy

The number of doses required and timing of boosters during pregnancy will depend on the past immunization history of the pregnant mother with tetanus containing vaccines.

1.2.1) *Immunization of pregnant mothers who have not received tetanus containing vaccines in infancy and childhood as per the EPI schedule*

Pregnant mothers who have not received tetanus containing vaccine according to the EPI schedule during infancy and child hood should be immunized according to the following schedule.

Dose	Time of Immunization
1st	During 1st pregnancy after 12 weeks of gestation
2nd	During 1st pregnancy (6 – 8 weeks after the first dose, two weeks before delivery)
3rd	During 2nd pregnancy after 12 weeks of gestation
4th	During 3rd pregnancy after 12 weeks of gestation
5th	During 4th pregnancy after 12 weeks of gestation

Pregnant mothers who have received 5 doses of tetanus toxoid during previous pregnancies mentioned above do not need further booster doses of tetanus toxoid during subsequent pregnancies.

1.2.2) *Immunization of pregnant mothers who have documented evidence of receipt of six doses of tetanus containing vaccines as per the national EPI schedule (3 doses of DPT / penta in infancy + DPT at 18 months + DT at 5 years + aTd at 12 years)*

Dose	Time of Immunization
One booster dose (TT)	If the gap between the 6th dose or any subsequent tetanus containing vaccine and the current pregnancy is more than 10 years

Pregnant mothers who belong to the following categories do not need to be immunized with tetanus toxoid during pregnancy.

1. If the gap between the 6th dose of tetanus containing vaccine and the current pregnancy is less than 10 years.

2. If the gap between the subsequent dose of tetanus containing vaccine received after the 6th dose and the current pregnancy is less than 10 years.

(2) Post exposure vaccination against tetanus

Decision on post exposure vaccination should be taken after considering the nature of the injury and the previous history of immunization with tetanus containing vaccine.

2.1) Immunization of persons who have been immunized with tetanus containing vaccine during infancy and childhood

If a person has documented evidence of receipt of six doses of tetanus containing vaccine (with 4 doses of DPT/ pentavalent, DT, aTd) he/she does not need to be immunized with tetanus toxoid up to 10 years after the 6th dose of tetanus containing vaccine. If a patient presents 10 years after the 6th dose of tetanus containing vaccine immunity could be boosted up with a dose of tetanus containing vaccine.

However, if a patient presents within 10 years with a severely contaminated wound a booster dose of tetanus toxoid could be given even though the gap between the 6th dose of tetanus and the injury is less than 10 years.

2.2) Immunization of persons who have not been immunized with tetanus containing vaccine according to the EPI schedule

Any person who has not been immunized with tetanus containing vaccine during infancy and adolescence according to the national EPI schedule, he/ she should be given a dose of tetanus toxoid (1st dose) if there is a risk of developing tetanus. Second dose of tetanus toxoid should be given 4 weeks after the 1st dose and the third dose 6 months after the second dose. A booster dose (4th dose of tetanus could be given 5 years after the 3rd dose. Fifth dose given 10 years after the 4th dose will produce long lasting, probably a lifelong immunity.

(3) Development of immunity after immunization with tetanus containing vaccines

If there is documentary evidence to show that any infant, child or an adult has been immunized as per EPI schedule, it is not necessary to immunize them in between the routine doses again whenever they present with trauma as they are protected against tetanus infection in between doses. However if an infant, child or an adult presents with a severely contaminated wound, a dose of tetanus could be given to boost up the immunity even in between the recommended routine doses.

(4) Storage and administration of tetanus containing vaccines

Tetanus containing vaccines should be stored and transported between +2 centigrade and +8 centigrade and should not be exposed to freezing as it can reduce the potency of these vaccines. Opened tetanus containing vaccine vials should be stored between +2 centigrade and +8 centigrade and could be re used in subsequent immunization sessions within 4 weeks of opening. Tetanus containing vaccines should be given intra muscularly.

Chapter 16

GUIDELINE ON SCREENING AND MANAGEMENT OF DIABETES MELLITUS DURING PREGNANCY IN THE FIELD/NON SPECIALIZED INSTITUTIONS

Gestational diabetes Mellitus

Definition

Gestational Diabetes Mellitus (GDM) is defined as carbohydrate intolerance of variable severity with onset or first recognition during the present pregnancy.

- Detailed, comprehensive history should be obtained from all the pregnant women who attend for their first antenatal clinic visit by a medical officer.
- Anthropometric assessment should be done at the first antenatal clinic visit using height and weight and by calculating BMI
- **If any of the following risk conditions are identified, offer them a 2hour PBBS testing using a glucometer**.
- Before testing the 2hr PBBS, check the available test reports, as some of the women may have already done OGTT, GCT or some other blood sugar values. If those reports are sufficient for decision making do not repeat the PBBS at the clinic.

Risk factors:

- Body Mass Index above 25kg/m2
- Maternal weight at booking visit > 65 kg
- Mother's age >35yrs
- Previous macrosomic babies weighing 3.5 kg or above
- Previous gestational diabetes
- History of IUD, Intrapartum death, Neonatal death
- Recurrent PIH
- Polycystic Ovary Syndrome
- Women on long term steroids, antiepileptic, anti-psychotics
- Previous late miscarriages or three or more consecutive miscarries at first trimester
- Family history of diabetes (1st degree relative with diabetes)
- Acanthosis Nigricans
- Essential Hypertension

- If the 2hr PBBS value is more than 120mg/dl at first antenatal booking refer them to a specialized unit for urgent OGTT.

- If 2hr PPBS at 1st antenatal visit is >120 mg/dl and OGTT in early pregnancy is normal, they have repeat OGTT at 24-28 weeks. Therefore, refer such women for OGTT at 24 -28 weeks.

- **At the POA of 24-28 weeks, offer all pregnant women 2hr PBBS testing using glucometer**.

- If the 2hr PBBS value is more than 120mg/dl refer them to a specialized unit for urgent OGTT.

Preparation for 2hr PBBS:

1. Pregnant woman should have an average Sri Lankan meal 2 hours before the test (rice with curries)
2. The meal should be eaten over a maximum period of 15 minutes time.
3. The two hours should be calculated from the starting time of the meal.
   Eg. Meal starts at 7.30am. It should be finished by 7.45am and the time for PPBS is 9.30am

Women with gestational diabetes should be offered information covering:

- the role of diet, body weight and exercise
- the increased risk of having a baby who is large for gestational age, which increases the likelihood of birth trauma, induction of labour and caesarean section
- the importance of maternal glycaemic control during labour and birth and early feeding of the baby in order to reduce the risk of neonatal hypoglycaemia
- the possibility of transient morbidity in the baby during the neonatal period, which may require admission to the neonatal unit
- The risk of the baby developing obesity and/or diabetes in later life.

Women with gestational diabetes should be advised to choose, where possible, carbohydrates from low glycaemic index sources, lean proteins including oily fish and a balance of polyunsaturated fats and monounsaturated fats.

Women with gestational diabetes whose pre-pregnancy body mass index was above 25 kg/m2 should be advised to restrict calorie intake (to 25 kcal/kg/day or less) and to take moderate exercise (of at least 30 minutes daily).

Hypoglycaemic therapy should be considered by relevant specialists for

- Women with gestational diabetes if diet and exercise fail to maintain blood glucose targets during a period of 1–2 weeks.

- Women with gestational diabetes if ultrasound investigation suggests incipient fetal macrosomia (abdominal circumference above the 70th percentile) at diagnosis.

Hypoglycaemic therapy for women with gestational diabetes which may include regular insulin, and rapid-acting insulin analogues and/or hypoglycaemic agents should be tailored to the glycaemic profile of, and acceptability to, the individual woman.

Individualized targets for self-monitoring of blood glucose should be agreed with women with diabetes in pregnancy, taking into account the risk of hypoglycaemia eg. targeted glycaemic control pre meal 70-90 mg/dl and 2 hour post meal <120 mg/dl

Women with insulin-treated diabetes should be advised of the risks of hypoglycaemia particularly in the first trimester.

During pregnancy, women with insulin-treated diabetes should be provided with a concentrated glucose solution and women with type 1 diabetes should also be given glucagon; women and their partners or other family members should be instructed in their use.

During pregnancy, women who are suspected of having diabetic ketoacidosis should be admitted immediately for critical care, where they can receive both medical and obstetric care.

Monitoring fetal growth and wellbeing

Pregnant women with diabetes should be offered ultrasound monitoring of fetal growth and amniotic fluid volume every 4 weeks from 28 to 36 weeks.

Routine monitoring of fetal wellbeing before 28 weeks is not recommended in pregnant women with diabetes, unless there is a risk of intrauterine growth restriction.

Women with diabetes and a risk of intrauterine growth restriction (macrovascular disease and/or nephropathy) will require an individualized approach to monitoring fetal growth and wellbeing.

Women with diabetes who are pregnant should be offered immediate contact with a joint diabetes and antenatal clinic.

Preterm labour in women with diabetes

Diabetes should not be considered a contraindication to antenatal steroids for fetal lung maturation or to tocolysis.

Women with insulin-treated diabetes who are receiving steroids for fetal lung maturation should have additional insulin according to an agreed protocol and should be closely monitored.

Betamimetic drugs should not be used for tocolysis in women with diabetes.

Postnatal care

Start breast feeding immediately and continue.

Women with insulin-treated pre-existing diabetes should reduce their insulin immediately after birth and monitor their blood glucose levels carefully to establish the appropriate dose.

Women with insulin-treated pre-existing diabetes should be informed that they are at increased risk of hypoglycaemia in the postnatal period, especially when breastfeeding, and they should be advised to have a meal or snack available before or during feeds

Women who have been diagnosed with gestational diabetes should discontinue hypoglycaemic treatment immediately after birth.

Women with pre-existing type 2 diabetes who are breastfeeding can resume or continue to take metformin and glibenclamide immediately following birth but other oral hypoglycaemic agents should be avoided while breastfeeding.

Women with diabetes who are breastfeeding should continue to avoid any drugs for the treatment of diabetes complications that were discontinued for safety reasons in the preconception period.

Information and follow-up after birth

Women with pre-existing diabetes should be referred back to their routine diabetes care arrangements.

Women who were diagnosed with gestational diabetes should have their blood glucose tested to exclude persisting hyperglycaemia before they are transferred to community care.

Women who were diagnosed with gestational diabetes should be reminded of the symptoms of hyperglycaemia.

Women who were diagnosed with gestational diabetes should be offered lifestyle advice (including weight control, diet and exercise) and offered a fasting plasma glucose measurement (but not an OGTT) at the 4-6 week postnatal check and annually thereafter.

Women who were diagnosed with gestational diabetes (including those with ongoing impaired glucose regulation) should be informed about the risks of gestational diabetes in future pregnancies and they should be offered screening (OGTT or fasting plasma glucose) for diabetes when planning future pregnancies.

Women with diabetes should be reminded of the importance of contraception and the need for preconception care when planning future pregnancies.

Chapter 17

PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV INFECTION

There is convincing evidence from several studies that mother to child transmission of HIV can be reduced successfully by various interventions that are now proven to be highly effective.

At present Sri Lanka is a country with a low level HIV epidemic. The estimated adult prevalence rate is <0.1%. As of end 2009, the estimated number of people living with HIV was 3000. The number reported in the country is around 1285. The majority of those living with HIV are unaware of their HIV status. The antenatal care package prepared for the benefit of all antenatal mothers in this country consists of several interventions and it will now include interventions for prevention of mother to child transmission of HIV infection.

Sri Lanka is adopting a 4 prong strategy to achieve zero incidence of paediatric infection.

1. Primary prevention of HIV among men and women of childbearing age
2. Prevention of unintended pregnancies among women living with HIV
3. Prevention of HIV transmission from a woman living with HIV to her infant
4. Provision of appropriate treatment, care and support to women living with HIV and their children and families

Since the antenatal HIV prevalence rate ranges between 0.02-0.03 % the best method for Sri Lanka is primary prevention of HIV among men and women of childbearing age. The most effective and humane way to prevent HIV in infants is to help young men and women by promoting safer sexual behaviours to remain free from infection before marriage and before the woman gets pregnant. Further, voluntary counselling and testing should be available to any pregnant woman who requests it. There are several key entry points within the health service which gives the opportunity for young men and women to know about HIV/AIDS, PMTCT, counselling and testing opportunities and access the available treatment, care and support services. Integration of PMTCT services into the maternal and child health services will provide women with services to prevent new infections and promote male partner involvement to prevent infections among men.

Integrating screening for HIV infection within the established antenatal investigation package eg screening for syphilis, anaemia and blood grouping is being considered strongly as a PMTCT intervention as it has public health benefits to the individual woman, her partner and her baby. Opportunities should be made available within the existing health services to identify HIV infected antenatal mothers in order for them to utilize ART, safer delivery and feeding practices to reduce transmission to the offspring.

Primary prevention strategies for PMTCT

Raising awareness of antenatal mothers and their partners on PMTCT

All pregnant women, and those planning pregnancy should have accessibility to appropriate information about HIV infection including PMTCT. Information on sexually transmitted infections including HIV and syphilis should be included in the general information given to pregnant women along with information about other infections and antenatal tests. They should be informed about perinatal transmission of HIV and it adverse pregnancy outcomes. They should be aware of the potential benefits of knowing their HIV infection status by getting tested, both for their own health and to reduce the risk of perinatal transmission. As part of routine antenatal care all pregnant women should be made aware that mother to child transmission of HIV can be greatly reduced through antenatal and perinatal treatment with anti-retroviral drugs, safer delivery and safer infant feeding practices.

Information about facilities for screening should be made available to all pregnant women. Discuss about the HIV test and the window period and other related issues about the HIV test. Stress those measures to prevent unintended pregnancies among women living with HIV and prevention of transmission of HIV from mother to child can only be offered if HIV infection is diagnosed before or during pregnancy. In Sri Lanka unfortunately almost 90% of HIV infection in pregnant women remains undiagnosed during pregnancy and often women only discover they are infected when their children develop HIV infection or AIDS. Therefore, screening for HIV, as far as possible should be promoted and normalized and should generally be dealt with other conditions discussed within antenatal care. Give details of the procedures for testing and obtaining results.

Information on safe and responsible sexual behaviour and practices should be discussed in a culturally appropriate manner depending on the audience. It should include as appropriate, the importance of avoiding commercial and casual sex, reducing the number of sexual partners and consistent condom use.

Information on services for STI/HIV prevention should also be discussed. Draw their attention to the availability of services to reduce mother to child transmission of HIV for HIV positive women including anti-retrovirals which are offered free of charge.

Discussions should not be limited only for women. Men should be included when information is provided at antenatal classes.

Communication

Information should be presented in a way which reflects the positive outcomes of knowing the HIV infection status for women and men and for their babies. Method of communication should be in forms that are linguistically, culturally and educationally appropriate to women. Groups health education should be utilized for dissemination of information.

Discussions should include eliciting and giving information about basic facts of STI and HIV and PMTCT, exploring any concerns expressed by women.

Health care workers should be aware of the procedures adopted in the respective institution. In some antenatal settings, HIV testing would be included as a routine test in the standard of care package of services. Voluntary counselling & testing should be encouraged if HIV testing is not provided in the antenatal care package.

Significant efforts should be taken to provide men and women with relevant information and services which would help them to assess their own risk to infection. Therefore, the service providers should have updated, comprehensive knowledge on STI/HIV/AIDS including PMTCT to educate antenatal mothers and their partners. They should have correct communication skills to talk about the following confidently.

Healthcare workers should have correct technical knowledge and communication skills to talk about the following confidently.

1. **Basic facts about STD/HIV/ AIDS**

    - What is HIV and AIDS and the difference between HIV and AIDS
    - HIV / AIDS /STI overview-Local situation
    - Natural history and what happens when the virus enters the body
    - Methods of transmission and non transmission
    - Asymptomatic period an HIV infected person could look healthy
    - An infected person is infectious for life
    - HIV transmission risk during pregnancy, delivery and breastfeeding
    - Mother to child transmission of HIV and syphilis. Risk factors and methods of prevention
    - Adverse pregnancy outcomes of maternal HIV infection and STI

- Make antenatal mothers understand that there will not be paediatric infections if parents are not HIV infected
- Discuss Behaviour Change efforts among vulnerable groups with promotion and provision of condoms. Counsel to change behaviours that place individuals at risk for becoming HIV infected or spreading HIV infection. Promote access to condoms and dual protection
- How people can continue to stay negative

2. **Screening for HIV infection**
    - How to know the HIV status? Explain about the screening test.
    - Stress that the only way to know for sure whether a person is infected with HIV or not is by testing of blood.
    - Discuss the purpose of HIV testing and advantages of knowing the HIV status during pregnancy.
    - Discuss what the window period is and its interpretation in relation to the risky sexual exposure
    - If HIV testing is not a routine procedure in the institution, promote voluntary counselling & testing. Inform the availability of test in STD services.
    - Make her understand that testing is done confidentially.
    - Provide information about the test procedures

- Discuss the HIV testing process. Explain the types of tests: client initiated and provider initiated: screening and confirmatory tests , what the window period means, importance of obtaining test result , implications of both positive and negative results
- Inform that persons who test positive will receive further counselling and referral for treatment, care and support.
- Discuss the importance of male partner involvement
- Approaches for partner disclosure
- If testing is not available in the health institution, it could be done at the closest STD clinic. If it is not possible for the mother to go to the STD clinic inform her that a blood sample could be collected and sent to the STD clinic for testing

HIV testing is done with informed consent. Informed consent means that the health care worker has explained the above during the education session and the mother is aware of the implications of a negative or positive test. No written consent is required for HIV testing. The main objective is to eliminate paediatric HIV infection and improve maternal and child survival.

3. **Interventions available to prevent mother to child transmission of HIV**
   - Explain the available interventions to prevent mother to child transmission of HIV to eliminate paediatric HIV. Availability of antiretroviral therapy from the government sector free of charge
   - Promote seeking STD care services and confidentiality of STD services
   - Discuss about confidentiality measures and efforts for prevention of stigma and discrimination in the institution
   - Discuss about the importance of continuous antenatal and postpartum care
   - Discuss about the importance newborn care
   - Trained healthcare team will provide optimum care for the mother, her partner and the baby
   - Ask her whether she has any questions and concerns.

At the end of the talk, women and men who attend the talk should be able to understand:

- The main modes of transmission of HIV and the need to avoid unsafe sexual behaviours to be HIV free, which is the best method to avoid HIV infection in the newborn
- HIV transmission risk to the infant
- Adverse pregnancy outcomes of maternal HIV infection
- Importance of HIV testing as this is the only method of knowing the HIV status of men and women. A diagnosis in the mother allows appropriate treatment and follows up of her child. This gives an opportunity for partner testing. In case the partner is negative the couple could take precautions to help prevent transmission to the sexual partner.
- Confidentiality of information
- Available services in the country
- Availability of pre test information/counselling
- If tests are negative how to stay negative by adopting risk reduction behaviours.

- If HIV infection is confirmed the availability of interventions for HIV positive mothers, partner and the infant
- Advantages of ART to the mother and infant
- Importance of partner testing
- To change attitudes towards People living with HIV (PLHIV) so that stigma & discrimination could also be reduced
- Safer sexual behaviours can protect both parents and the baby

Screening for HIV during pregnancy

HIV screening is not included in the basic investigation package during pregnancy. Voluntary counseling and testing method is used to screen pregnant mothers and their partners. The information on HIV and PMTCT is given at the first antenatal class during first trimester. Facilities for screening for HIV are available at the central STD clinic and all the district STD clinics in the government sector.

- Explain the woman that the first blood test is called a screening test. A negative result can mean either that she is not infected with HIV or that she is infected with HIV but, has not yet made adequate levels of antibodies against the virus ("window period"). All positive

- screening tests in Sri Lanka are tested with a confirmatory test. If this confirmatory test is positive, it means that the woman is infected with HIV.
- The result of the screening test would be available depending on the test that is done. The result will be available immediately if a rapid test is done. If an ELISA test is done, it will take about a week for the result.
- Assure the woman that her test result is confidential and will be shared only with her.

Ask her to come in 2 weeks time to get the test result. Test result should be given only to the relevant person.Do not convey any test result over the phone.

When a woman request for HIV testing, the field health staff could ;

- Refer the pregnant mother to the nearest STD clinic if she agrees. (provide the address) or
- If the mother does not want to go to the STD clinic then draw a sample of blood, label it correctly and send to the nearest STD clinic with a pathology request form. It would be useful if the STD clinic is informed.

When screening test result is negative:

- Counsel on the importance of staying negative by safer sex including use of condoms.
- Explain that a negative result can mean either that she is not infected with HIV or that she is infected with HIV but, has not yet made adequate levels of antibodies against the virus ("window period")

When the screening test is positive:

- She should be subjected to a detail one- to- one counseling session prior to the confirmatory test
- Pre-test counseling will be done by a MOH/MO if he/she has the capacity to do so
- Select a suitable place where the counselling session could be carried out maintaining privacy
- Discuss the HIV results when the woman is alone or with the person of her choice.
- State test results in a neutral tone. Give the woman adequate time to express her emotions.
- Explain to the woman that this is only a screening test and now the confirmatory test has to be done with her consent.
- For the confirmatory test, a second sample has to be taken and explain this to her. Then with her consent draw the second sample and label it carefully and send it to NSACP-reference Laboratory with the request form H 1214.
- Stress and explain to her that only if the confirmatory test is positive, there is evidence that she is infected with HIV.
- Inform her that if she is positive, there are several interventions including medications, safe delivery and feeding practices which are able to reduce the risk of transmission of HIV to the baby.
- Inform her that support and counseling is available if needed to cope on living with HIV.
- Depending on the situation, it may be useful to discuss the importance of disclosure and partner testing (see below).
- Identify what difficulties or problems the woman foresees and how to deal with them
- Encourage her to ask questions
- Ask the woman if she has any concerns.

When the confirmatory test results is negative:

- Counsel on the importance of staying negative by safer sex including use of condoms.

When the confirmatory test result is positive:

- Explain to the woman that a positive test results means that she is carrying the infection.
- Reinforce that there are medications and other interventions to reduce the risk of transmission to the baby
- Inform that she will be managed by a team of health care workers including obstetricians, venereologists, paediatricians etc.
- Inform her that support and counseling is available if needed to cope on living with HIV.
- Reinforce the importance of disclosure and partner testing (see below).
- Give her an opportunity to discuss her concerns and doubts.
- Be sensitive regarding her special concerns and fears
- She may need more than one post test counseling sessions.

- There are several issues to be addressed when counselling a pregnant woman in addition to the general issues related to HIV. There will be concerns about risk of MTCT and the impact of HIV on the outcome of pregnancy, future fertility etc. Therefore, it is best that arrangements are made to refer the mother (if she agrees) to the closest STD clinic for further counselling.

Discuss the confidentiality of HIV infection

- Assure the woman that the test result is confidential and will be shared only with her.
- Ensure all records are confidential and kept locked away and only health care workers taking care of her have access to the records.
- **Do not** label records as HIV positive. HIV positivity may be identified using a code.
- Inform the woman that referral to the STD clinic is important as further counselling, assessment and medication will be initiated there

Benefits of disclosure and testing the male partner

Encourage the woman to disclose the HIV testing results to her husband or another person she trusts. By disclosing her HIV status to her partner and family, the woman may be in a better position to:

- Encourage partner to be tested for HIV
- Prevent the transmission of HIV to her partner if he is not infected.
- If he is infected, to access treatment and care
- Receive support from her partner and family when accessing antenatal care and HIV treatment, care and supportive services
- Help to decrease the risk of suspicion and violence.

Support to the HIV positive woman

Pregnant women who are HIV positive benefit greatly from the following support after the first impact of the test result has been overcome. Therefore take steps to provide the following

- Empathize with her concerns and fears
- Help her to assess the situation and decide whether to link up with existing support services such as support groups, income generating activities, religious support groups, orphan care and home care.
- Help her to find ways to involve her husband and/or extended family members in sharing responsibility of care and support to her and the baby. If she is willing, help her to identify a person from the community who will support and care for her and the baby.
- Discuss how to provide care for the other children and help her to identify a person from the extended family or from the community who will support her children.
- Confirm and support information given during HIV testing and counseling eg. appropriate ARV treatment, safe sex, infant feeding and family planning advice
- Help her to absorb the information and apply it in her own case.

- If the woman has signs of AIDS and/or other illnesses, refer her to appropriate services.
- Refer individuals or couples for STD services for further support.
- Advice her to get admitted to the hospital as instructed.
- Tell her to take ART medicine as instructed.
- Discuss the infant feeding options
- Counsel her on post partum family planning.

Post partum care

- Be aware of signs of infection following delivery. Like uninfected women, HIV positive women are also vulnerable to infection following delivery and retained blood and placental tissues. Postpartum uterine infection is a common and potentially life-threatening condition, and early detection and effective treatment are important measures to prevent complications.
- Monitor for secondary postpartum haemorrhage
- Manage infected tears or episiotomy
- Advice women to come back to the same institution if LSCS wound infection is observed
- When they are discharged from the healthcare facility women should be advised to return to the clinic or inform the PHM if they notice symptoms such as fever, lower abdominal pain, burning with urination, foul smelling discharge, abnormal bleeding, cough, shortness of breath, calf pain (increasing on walking), diarrhoea, unusual / abnormal behaviour
- Give the mother information on care of the perineum and breasts. Women living with HIV require special care to reduce breast engorgement, mitigate pain and avoid mastitis
- Women who choose to breast feed should be counselled to avoid breast engorgement which could lead to mastitis, since inflammation is associated with increased risk of HIV transmission. She should be advised to seek immediate medical care if breast engorgement is associated with fever and pain
- Instruct her about the safe disposal of lochia and blood-stained sanitary wear or other potential infectious materials.
- If contraception has not been discussed before delivery it should be done during the early postpartum period (see below).

Counsel HIV positive woman on family planning

Advice and counsel on family planning during antenatal period and post partum visits.

HIV positive women and men should be empowered to take informed choices relating to their reproductive lives, free of coercion. When selecting a family planning method, when only one partner is HIV positive the potential risk of transmitting HIV to the uninfected partner as well as the possibility of infection with other STI should be taken into account. When both partners are living with HIV, possible re-infection with other HIV strains has to be considered.

The same contraceptive options which are available to uninfected couples are available to HIV infected couples. Most methods are considered to be safe and effective for HIV infected women.

Recent WHO publications indicate that there are no restrictions on the use of **hormonal contraception** by HIV positive women who are not on ART. However, use of OCP containing high dose oestrogen is recommended when women are on ART. Rifampicin used in tuberculosis treatment may decrease the effectiveness of oral contraceptives. Long-acting injectables (DMPA) can be safely used in all HIV positive women including those on ART.

Intra uterine contraceptive devices (IUD) can be used in case of HIV infection, except for women with AIDS and not on antiretroviral therapy.

Female sterilization or **male sterilization** is often the most commonly used family planning method in developing countries.

Emergency contraception can help to prevent unintended pregnancies. It should not be used as a substitute to regular contraception. Women on ART should be given double the normal dose, ie 2 tablets within 72 hours and 2 tablets 24 hours later.

Protection against both unintended pregnancy and STI is referred to as "dual protection". **Condoms are the mainstay of dual protection**, alone or in combination with another method.

During counselling for a contraceptive plan;

- Encourage the woman to bring her husband for contraception counselling as it is best that they both decide on a suitable method.
- Discuss their thoughts about having more children.
- Ensure that they have the information they need about their own future prognosis, availability of HIV treatment, and risk of transmission of HIV to the baby in future pregnancies.
- Listen carefully to the couples' views. Correct any factual misunderstandings.
- If the husband is HIV negative emphasize the importance of using condoms to protect him from HIV infection.
- If the husband is HIV positive, explain that although they both have HIV they could become infected with another strain of HIV and so it is sensible to use condoms to prevent pregnancy and infection.
- Discuss where they could obtain condoms. Demonstrate how to use condoms correctly. Let both members of the couple handle a condom. Provide them with condoms and an information leaflet.
- If they have decided that they want no more children, discuss vasectomy and female sterilization.
- If they are uncertain about having more children in future, explain that waiting at least 2 years after the last birth to become pregnant again is healthiest for mother and child. Discuss the need of a planned pregnancy.
- Discuss other temporary methods of contraception.
- Ask the woman if she has had infant feeding counselling and how she is planning to feed her baby. If she has not yet been counselled, counsel or refer for counselling.
- Explain that if not breastfeeding, she could get pregnant again as soon as even 4 weeks after childbirth. It is necessary to consider a family planning method early
- If breastfeeding, explain that exclusive breastfeeding is very important during first six months for the health of her child and to prevent pregnancy. During exclusive breastfeeding no mixed feeding is allowed as mixed feeding will increase the risk of transmission of HIV to the baby. Breastfeeding

will provide protection against pregnancy for up to 6 months but only if the mother is breastfeeding often, day and night, and giving no other food or liquids.

- Discuss about ARV and contraception use. Generally, anti-retrovirals and contraceptives do not conflict, however:
    - Rifampicin (used for TB treatment) lowers effectiveness of contraceptive pills and implants. Other antibiotics do not have this problem.
    - Some antiretrovirals (protease inhibitors and NNRTIs) *may* lower effectiveness of hormonal methods. Correct use of the method and use of condoms can make up for any decrease in contraceptive effectiveness.
    - Some women may have other medical conditions that affect choice of a method
- While breastfeeding non-hormonal methods such as condoms or IUD are suitable. The IUD can be inserted after 6 weeks.
- Progestogen-only methods can also be used while breastfeeding, starting 6 weeks after childbirth (long-acting DMPA injectables, subdermal implants).
- If not breastfeeding, she can use any method. She can start any progestogen-only methods immediately (the mini-pill, long-acting injectables, implants), or the oral combined contraception pill after 3 weeks.

Infant feeding with HIV

Counselling and support for safer infant feeding

Infant feeding practices by mothers known to be HIV infected should support the greatest likelihood of HIV free survival of their children and not harm the health of mothers. In order to achieve this, prioritization of prevention of HIV transmission need to be balanced with meeting the nutritional requirements and protection of infants against non-HIV morbidity and mortality.

Infant feeding in the context of HIV is complex because of the major influence that feeding practices exerts on child survival. The counselor has to balance the risk of infants acquiring HIV through breast milk with the higher risk of death from causes other than HIV in particular malnutrition and serious illness such as diarrhea among non-breastfed infants.

Infants born to HIV infected mothers may escape HIV during pregnancy and delivery but remain vulnerable to transmission through breastfeeding. The cumulative risk of postnatal transmission is 12%–16% with 18–24 months of breastfeeding. In the absence of interventions, the overall risk of MTCT of HIV in utero, peripartum and via breast milk is 30-45% with transmission through breast milk accounting for a substantial proportion (30-50%) of these infant HIV infections. The only method known to completely eliminate breastfeeding associated HIV transmission is to avoid breastfeeding. This is recommended in settings in which infant replacement feeding is affordable and sustainable, clean water is widely available, hygiene and sanitation conditions are good and death due to diarrheal and other infectious conditions are relatively uncommon. However, this approach may not be feasible or safe for a variety of reasons including low acceptability due to cultural norms associated with breastfeeding.

Breast-feeding by any woman confers known benefits to the infant. Children who do not breast feed are up to six times more likely to die from diarrhea, malnutrition or pneumonia. Breast feeding substantially

reduces the risk of infant mortality from other infectious diseases and malnutrition on average by 4–6 folds in the first six months and close to twofold in the second six months of life. The risks of not breast feeding range from higher mortality in settings with unpredictable water supply or unsafe sanitation to compromising confidentiality regarding HIV status. The combination of potent ART for the mother during pregnancy and replacement feeding for the infant prevents almost all transmission to infants in developed countries.

For the first time there is evidence that giving ART prophylaxis to the mother or child throughout the breastfeeding period would substantially reduce MTCT. Therefore, mothers known to be HIV infected should be supported to either:

- Breastfeed and receive ARV interventions or
- Avoid all breastfeeding

As a strategy that will most likely give infants the greatest chance of **HIV free survival** and to improve the health of the HIV infected mother.

The most appropriate infant feeding option for an HIV positive mother depends on her individual circumstances, including her health status and the local situation, the health services availability and the counselling and support she is likely to receive. The expectant mother should be counseled by a counselor who has adequate knowledge on the safer feeding options that are currently recommended. This is preferably done by a Venereologist or a Pediatrician who is trained in Lactation Management.

Counsel the mother taking the following into consideration:

- Some babies may escape infection although born to HIV infected mothers. These babies are at risk of being infected through breastfeeding. At present there are no facilities in Sri Lanka to diagnose infant HIV infection at birth and 4-6 weeks of age (diagnosis could be confirmed or refuted only after 18 months of age by the HIV antibody test).
- There is now enough evidence that triple ART given during prenatal period for either as prophylaxis or for mothers own health with safer delivery practices and avoidance of breastfeeding has substantially lowered MTCT of HIV. ART is available for antenatal mothers through government health services
- It should be noted that morbidity due to diarrhoea is 7 times higher, and pneumonia 3 times higher in formula fed infants,
- Exclusive breast feeding for 6 months have unlimited benefits to any baby and is the recommendation in Sri Lanka. The health messages given to achieve EFB should not be compromised by interventions for HIV infected mothers

The counsellor should support the mother to decide on how these very specific conditions are met and support the mother to decide on the best feeding option for her own baby which is sustainable and safe in her individual socio economic and cultural circumstances.

Recommendations for use of replacement feeding

Mothers known to be HIV infected should only give commercial infant formula milk as a replacement feed to their HIV uninfected infants or infants who are of unknown HIV status, when specific conditions are met:

- Safe water and sanitation are assured at the house hold level and in the community
- The mother or other caregiver can reliably provide sufficient infant formula milk to support normal growth and development of the infant
- The mother or caregiver can prepare it cleanly and frequently enough so that it is safe and carries no risk of diarrhoea and malnutrition
- The mother or caregiver can in the first six months exclusively give infant formula milk and not give any kind of mixed feeds
- The family is supportive of this practice
- The mother or caregiver can access health care that offers comprehensive child health services

Formula fed infants should receive 4-6 weeks of NVP prophylaxis daily or single dose NVP plus 4-6 weeks of zidovudine

If the above conditions cannot be sufficed; and the mother wishes to breast feed then the following is recommended:

If breastfeeding is recommended it should be exclusive breastfeeding for 6 months. Breastfeeding should be stopped only once a nutritionally adequate and safe diet without breast milk can be provided. No mixed feeding should be allowed during the first 6 months as mixed feeding increases the risk of HIV transmission. EBF should be followed by continued breastfeeding with addition of complementary foods through age 12 months with gradual weaning over 1 month.The mother should be covered by ART as treatment for her or as prophylaxis. Infant prophylaxis for 4-6 weeks is recommended irrespective of the mode of feeding.

There are two choices for HIV positive women who breastfeed and are not taking ART for their own health.

1) If she receives AZT as prophylaxis, daily NVP is recommended for the infant from birth until one week after the end of the breastfeeding period (AZT is not recommended for breast fed babies) or
2) If a woman received a three drug regimen during pregnancy, she should continue the same regimen until the end of the breastfeeding period. In this situation the infant needs ART only for 4-6 weeks.

If the mother decides to breastfeed it is very important to support the mother to breastfeed. She should be well trained on proper positioning and attachment of the baby to the breast in order to avoid difficulties during breastfeeding. A health care worker who is trained on lactation councelling should support such a mother.

Whatever the feeding decision, health services should follow-up all HIV-exposed infants, and continue to offer infant feeding counselling and support, particularly at key points when feeding decisions may be reconsidered, such as the time of early infant diagnosis and at six months of age.

Where mother and infant are both HIV positive, breastfeeding should be encouraged for at least the first two years of life in line with recommendations for the general population. **The message to health care workers is that breastfeeding is the best for every baby, even those born to HIV positive mothers when they have access to ART.**

A pregnant woman living with HIV needs help to decide how to feed her baby. In a counselling session on HIV and infant feeding the counsellor has three main tasks:

- to convey information
- to help a mother to assess the risks for her baby in her own situation
- to give the mother confidence in her choices

During counselling the idea of weighing up risks can be difficult for a woman to understand. Her choice is not a simple one of deciding whether to breast feed or not. Her decision will be influenced by many factors. It is therefore important that the woman makes the decision and not the counsellor. It is important that the counsellor have adequate up to date evidence based knowledge to convey correct information.

A woman does not need to make all decisions about how she will feed her baby at the first counselling session. While she is pregnant she needs to decide whether she will breastfeed at all or not. But she does not need to decide when she will stop breastfeeding until later. She does not need information about safe weaning foods until the baby is older. However these points should be mentioned so that she understands that they are important points to ask about later

.

Chapter 18

ELIMINATION OF CONGENITAL SYPHILIS

Sexually transmitted infections (STI) are one of the commonest communicable diseases found in the world today. Primarily they are transmitted through unprotected sexual intercourse. Transmission can also occur through contaminated blood and blood products and from an infected untreated mother to child during pregnancy, child birth or via breast milk.

Syphilis is a sexually transmitted infection caused by the bacterium *Treponema pallidum*. It is estimated that globally about 12 million cases of syphilis occur annually and of them about 2 million are among pregnant women. If a woman with untreated syphilis becomes pregnant, or a woman acquires syphilis during pregnancy, depending on the stage of syphilis, the infection can be transmitted to the foetus causing adverse pregnancy outcomes including congenital syphilis. Although estimated vary, adverse pregnancy outcomes occur in up to 80% of women with acute syphilis including still birth (40%), peri natal death (20%) and serious neonatal infection (20%). Such outcomes are 12 times more likely in women with syphilis than in sero-negative women. Early congenital is defined as syphilis from birth and within two years of life. Late congenital syphilis is when vertically acquired infection manifests from third year of life onwards.

Unlike many neonatal infections, congenital syphilis (CS) can be effectively prevented, either through prevention of maternal infection or by detection of infection early in pregnancy and provision of adequate treatment. Control of sexually transmitted infections in the community by promoting safer sex, increasing awareness about syphilis and its adverse effects on mother and infant could also help prevent maternal infection. Universal screening for syphilis during pregnancy, treatment of infected pregnant women, their partners and treatment of infants born to sero-positive woman are shown to be cost effective, inexpensive and feasible in the prevention of congenital syphilis. Preventing even an occasional case is economically worthwhile. Economic analyses have shown that serological screening of pregnant woman is cost effective even at very low prevalence of maternal infection. The cost of averting a case of CS is much lower than for other diseases. Yet in this era of concern about the number of babies who are born with HIV infection, congenital syphilis receives scant attention.

Maternal Syphilis

The causative bacterium *Treponema pallidum*can be transmitted via blood of an infected mother to her developing foetus through the placenta. Haematogenous spread is dependent upon the occurrence of maternal spirochaetaemia. The spirochetes can cross the placenta at any time during pregnancy although occurs more commonly in the last two trimesters.

The risk of congenital infection is directly related to the stage of maternal syphilis during pregnancy and the stage of pregnancy when infection is acquired. The risk of infection to the foetus is much higher during early stages of syphilis than during late stages. The more recent the maternal infection, the more

likely the foetus will be affected since the early stage of syphilis is characterized by high levels of spirochaetaemia. The probability of transmission to the foetus is nearly 100% when the mother has early syphilis. The spirochaetaemia diminishes over time and two years after acquisition of syphilis the probability of transmission to a fetus can take place up to four years after the acquisition of infection by the mother.

Clinical manifestation of syphilis in the mother will depend on the stage of syphilis at the time of pregnancy. If the mother becomes infected late in pregnancy she may show no signs of before delivery and the infected newborn may also appear normal at birth.

There are two general scenarios that need to be considered when assessing the risk of congenital syphilis.

1. An untreated woman becoming pregnant
2. A woman becoming infected during pregnancy.

The latter tends to be associated with overall severe outcomes for the infant as it always involves the early spirochetemic stages of the disease in which the likelihood of transmission to the fetus is high.

Diagnosis of maternal syphilis

Traditionally laboratory diagnosis in adults is based on initial use of a non-treponemal screening test. These tests detect antibody to regain antigen, which is found in both *Treponema pallidum* and some human tissues. They are thus not specific for *Treponema pallidum* and could give false positive results. Examples include the venereal disease Research laboratory (VDRL) test. If a non-treponemal test is positive it should be confirmed by a treponemal test using an antigen of *Treponema pallidum*, examples include the *Treponema pallidum* haemagglutination assay (TPHA) and the *Treponema pallidum* particle agglutination assay (TPPA). Syphilis is diagnosed when the confirmatory treponemal test is positive.

When a non treponemal test is positive in the absence of a reactive treponemal test is called a biological false positive test. The non treponemal test becomes positive sometimes due to technical errors or due to certain physiological or pathological conditions. Acute false positive tests are found in persons suffering from many viral and bacterial infections or who have had certain vaccinations or immunizations. Chronic false positives are found in the presence of autoimmune conditions, tuberculosis, leprosy or malaria. False positives are also found during pregnancy or even without a specific cause or a pre existing disease. Therefore a positive non-treponemal test should be confirmed by a specific treponemal serological test to arrive at a diagnosis of syphilis

The non treponemal tests have the advantages of being inexpensive and sensitive (especially in early infection.).

However, these tests cannot be done on whole blood, they require a microscope or rotator for processing, and misinterpretation is common by inexperienced laboratory technicians because reading of the result is subjective.

Treponemal tests, while theoretically more specific than non-treponemal tests may also give false positive results. Moreover, they cannot differentiate between individuals with active (untreated syphilis) and those who have previously been successfully treated for infection. In both cases, the treponemal test result will be positive. Non treponemal tests, on other hand, can distinguish current or recent infections from old, treated infections to a certain extent based on titre levels.

For the diagnosis of syphilis, a combination of the two tests is recommended. Traditional confirmatory assays require expensive laboratory equipment and technical expertise, and are therefore seldom available outside reference laboratories. However, these can now be replaced by simple, rapid, point- of-care treponemal tests which use whole blood, require minimal training, no equipment or special storage conditions.

Rapid simple treponemal tests using immunochromatographic strips (ICS) which use whole blood, do not need equipment or special storage conditions and require minimal training are now available and can be used on the site including peripheral areas. Sensitivity (85- 98%0) and specificity (92-98%) of these tests are high. The new rapid test has been estimated to cost U$ 7 per each case of congenital syphilis averted. The affordability, convenience and practicality of rapid tests make them attractive tools, as on-site screening tests in primary care settings or in areas where laboratory services are not available.

How ever since treponemal antibodies persist for years irrespective of treatment, a positive test will not help in distinguishing active infection from past treated infection. Treponemal tests cannot be used to monitor effectiveness of treatment.

In the event the ICS becomes positive, a second sample should be drawn from the mother and sent to STD clinic for re-confirmation or refer the mother to the STD clinic as early as possible

Case Definition of a mother with syphilis-

A pregnant mother with serologic evidence of syphilis (positive TPPA test) in the current pregnancy with or without symptoms of syphilis. A woman who has documentary evidence of having been adequately treated in the past and in whom re-infected during the current pregnancy is ruled out is excluded from this case definition.

Treatment of maternal syphilis

Syphilis in adults is easily cured. If not treated in its early stages, the disease can become chronic, often with a long latent period with some clinically recognizable stages. In pregnancy, however, early treatment with penicillin is required for successful pregnancy outcomes. Treatment should be provided early in gestation before significant fetal involvement take place. Treating the mother with penicillin during the first and second trimester will prevent major outcomes, but later treatment or lack of treatment may result in fetal death, fetal damage or birth of an infected child. **Mothers with syphilis should be preferably treated at STD clinics.**

Treatment of primary, secondary and early latent syphilis

A single dose of benzathine benzyl penicillin 2.4 million units IM given after excluding allergy.

Late latent syphilis:

Benzathine benzyl penicillin 2.4 million units IM once a week for consecutive 3 weeks.

Adequate penicillin treatment will end infectively within 24-48 hrs.

Follow up

Pregnant mothers treated for early syphilis should have monthly quantitative serologies throughout pregnancy and will be followed up in the STD clinic . Those who do not show a fourfold drop in titre at the end of 3 months or who show a 4 fold rise in titre should be re-treated.

It is not necessary to retreat mothers who have documented evidence of adequate therapy for previous syphilis so long as there is no evidence of serologic or clinical evidence of re-infection or relapse. Babies born to such mothers do not require prophylactic penicillin therapy.

If doubts exist about the adequacy of previous therapy, re-treatment should be commenced promptly.

Allergy to penicillin

When patient sensitivity to penicillin precludes its use, erythromycin is recommended as an alternative. In early syphilis (primary, secondary and early latent) give erythromycin 500mg oral 6 hrly for 15 days. In late latent syphilis give erythromycin 500mg oral 6 hrly for 30 days.

HIV infection

Evidence suggests that treatment for syphilis in pregnant women who are HIV positive should be similar to that given to other pregnant women and follow up should be the same as for adults with HIV infection.

Treatment of partners

Sexual partners of mothers with primary, secondary, early latent syphilis

Epidemiological treatment of sexual contact is mandatory as these stages of syphilis are infectious. Therefore, take necessary steps to counsel and refer to STD clinic. Those with reactive serology will be treated according to the stage of syphilis of the partner.

Sexual partners of mothers with late latent syphilis

Sexual partners should be referred to the STD clinic for assessment. They will be treated according to the stage of syphilis, if clinical evidence of syphilis is present or if serology is positive.

Diagnosis of congenital syphilis

The diagnosis of congenital syphilis depends on a combination of physical, radiographic, serologic and direct microscopic evidence.

At birth babies born to mothers with congenital syphilis should be examined thoroughly for physical signs of congenital syphilis. Serological tests on both the mother and the baby should be done. A sample of fetal blood (5cc) should be sent to the STD clinic together with 5 cc of blood from the mother. Cord blood is not suitable for testing

Signs and symptoms

At birth about 50% of babies with congenital syphilis may be asymptomatic. Usually symptoms appear in the first months but the clinical manifestations may be delayed until the second year of life. The most frequent clinical signs at birth are hapatomegaly with or without splenomegaly (33-100%), blistering skin rash (40%), and bone changes seen on x-ray (75-100%). Other early signs are pseudoparesis (12-36%), bleeding (100%), fever (16%), low birth weight (10-40%), swelling of joints, oedema, abdominal distension, pallor and respiratory distress. None of these signs are pathognomonic of syphilis and are seen in other congenital infections.

Investigations

Dark field microscopy

A definitive diagnosis of syphilis is made by demonstrating the presence of Treponema pallidum by dark ground microscopy on any suspicious lesions or body fluid eg: nasal discharge, skin rash. However, this procedure is cumbersome and not always possible.

Serology

The diagnosis of congenital syphilis is complicated by passive transfer of maternal non treponemal and treponemal IgG antibodies to the foetus. The presence of these maternal antibodies makes the interpretation of reactive serological tests for syphilis in infants difficult. When a positive test for an infant is due to passively transmitted maternal antibodies they would be catabolized and undetectable in non-infected infants by 6 months of age.

Infants born to mothers with positive serologic tests for syphilis should be evaluated by a quantitative non-treponemal serologic test at birth. It is necessary to compare the infant's titre with maternal serologic titre using the same test. A fourfold higher titre in the infants is accepted as significant. Serum from the neonate is the preferred specimen, since cord blood may produce false-positive results.

The detection of Immunoglobulin M (IgM) in infant's serum also indicates active infection because maternal IgM antibodies do not cross the placenta. IgM antibodies can be detected in more than 80% of symptomatic infants but data on its sensitivity for asymptomatic infants are limited. Because IgM responses take time to develop in infants and may be diminished with early treatment or inadequate treatment. A negative IgM result should not be used to exclude congenital syphilis. False positives also could occur.

Serologic evidence of congenital syphilis

- Serum quantitative non treponemal serologic titre (VDRL titre) that is fourfold higher than the mother's titre at the time of delivery or
- Presence of IgM antibodies in the infant (EIA test) or
- Rising non treponemal antibodies in infant's serum

Presence of non treponemal antibodies due to other causes other than syphilis in the pregnant mother will also cross the placenta to produce a reactive serologic test which is of a false positive nature in the newborn. The titre usually reverts to non reactive by 3 months of life.

Treatment of infants

Treatment decisions must be made on the basis of:

1. Identification of syphilis in the mother,
2. Adequacy of maternal treatment
3. Presence of clinical, laboratory or radiological evidence of syphilis in infants
4. Comparison of maternal (at delivery) and infant non-treponemal serologic titres

All asymptomatic babies who have no serological evidence of syphilis and are born to mothers who were adequately treated for maternal syphilis with penicillin during the current pregnancy before 4 weeks of delivery according to guidelines should be treated with a single dose of prophylactic penicillin.

IM prophylactic treatment regimen

Benzathine benzyl penicillin G 50,000 units/kg as a single intra muscular injection.

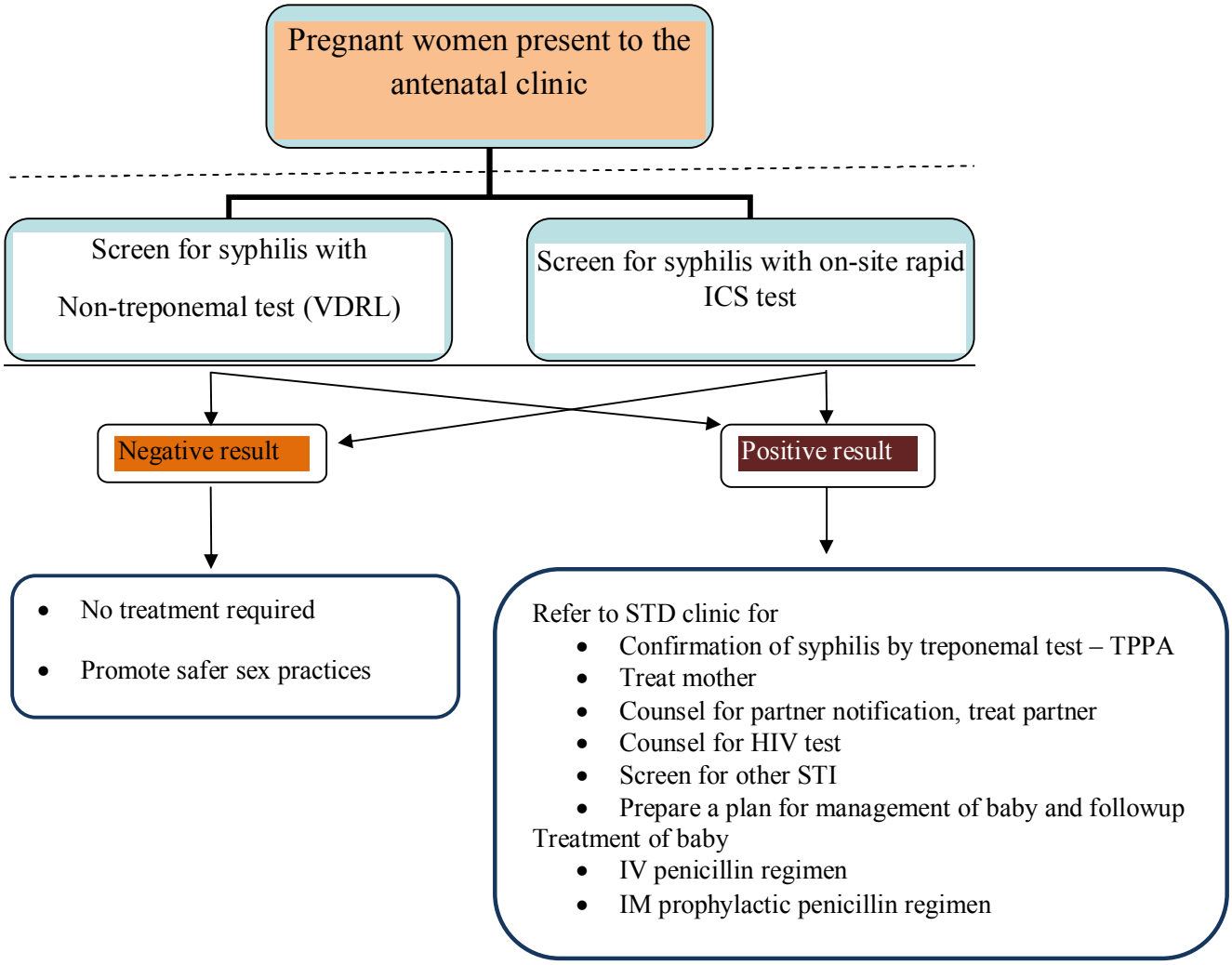
IV treatment regimen

Aqueous crystalline benzyl penicillin G 100,000 – 150,000 million units/kg/day intravenously. It could be given as 50,000 units/kg/dose IV every 12 hrs during the first 7 days of life and thereafter every 8 hrs for 3 days to complete a total of 10 days treatment.

This should be given to:

1. All symptomatic babies
2. All asymptomatic babies
   i. Whose VDRL titre is a 4 fold higher than that of the mother at delivery
   ii. Having a rising non-treponemal titre
   iii. With a reactive syphilis specific IgM antibody test
   iv. Born to mothers with clinical evidence of syphilis
   v. Born to mothers who were treated with penicillin <4 weeks before delivery,
   vi. Born to mothers who did not complete the recommended course of penicillin during pregnancy
   vii. Born to mothers whose non treponemal high titre had not dropped four fold at the time of delivery
   viii. Born to mothers who were treated with non penicillin regimens (erythromycin0 during pregnancy
   ix. Born to mothers whose treatment status is unknown or undocumented

Steps in syphilis screening and management of pregnant women



Protocol for antenatal testing for syphilis in the government health system

Collect blood from mother (filed clinic, hospitalclinic)

↓

Send blood to NSACP/nearest STD clinic/testing institution

↓

VDRL test positive. All positives should be confirmed by the specific test (TPPA) and the laboratory/Mo-IC of STD clinic should inform the positive test results to the relevant MOH immediately. When a BFP is detected the MOH should be informed that it is not syphilis. Hard copy of the positive test results/ BFP should be sent there after

↓

MOH will inform the PHM to trace the respective mother. The mother should be given a referral letter to visit the STD clinic. Confidentiality should be maintained.

↓

When the mother attends the STD clinic a second sample should be collected for re-confirmation after counseling. When a 2nd sample is positive the mother will be informed of the diagnosis and a file should be opened

↓

1. Detail history + clinical assessment and determine the stage of syphilis, whether the mother was treated in the past or this is a new infection during the current pregnancy
2. Screen for other STI
3. Treat according to the stage of syphilis
4. Screen spouse/partner and give epidemiological treatment/Rx
5. Counsel on safer sex
6. Promote HIV testing of mother and partner
7. Follow up
8. Make arrangements for management of baby (Prophylaxis penicillin or IV penicillin regimen)
9. Baby should be followed up in the STD clinic at 3,6 and 12 months

↓

VDRL/TPPA test reports should be collected by the relevant MOH from the testing center

↓

All VDRL negative test results should be entered in pregnancy record (H 512 A& B) with the POA by PHM. Sero negative mothers should be informed that they are free of syphilis. BFP results and TPPA positive result should be entered by MOH. Confidentiality of all information should be maintained

Chapter 19

SYNDROMIC MANAGEMENT OF SEXUALLY TRANSMITTED INFECTIONS DURING PREGNANCY

Identifying the syndromes

Syndrome	**Symptoms**	**Signs**	**Most common causes**
Vaginal discharge	Unusual vaginal discharge Vaginal itching Dysuria (pain on urination) Dyspareunia (pain during sexual intercourse)	Abnormal vaginal discharge (Foul smelling /grey /yellowish discharge) Evidence of cervicitis - Erythema - Oedema - Induced bleeding - Hypertrophic ectopy	VAGINITIS: • Trichomoniasis • Candidiasis • Bacterial vaginosis CERVICITIS: • Gonorrhoea • Chlamydia
Genital ulcers	Genital sore	Genital ulcer Enlarged inguinal lymph nodes	Syphilis Chancroid Genital herpes
Lower abdominal pain	Lower abdominal pain Dyspareunia	Vaginal discharge Rebound tenderness Adenexial tenderness Pain on moving cervix Temperature 38c or higher	Gonorrhoea Chlamydia Mixed anaerobe infections
Ophthalmia neonatorum	Swollen eye lids Eye discharge Baby cannot open eyes	Oedema of the eye lids Purulent eye discharge	Gonorrhoea Chlamydia

Vaginal discharge syndrome

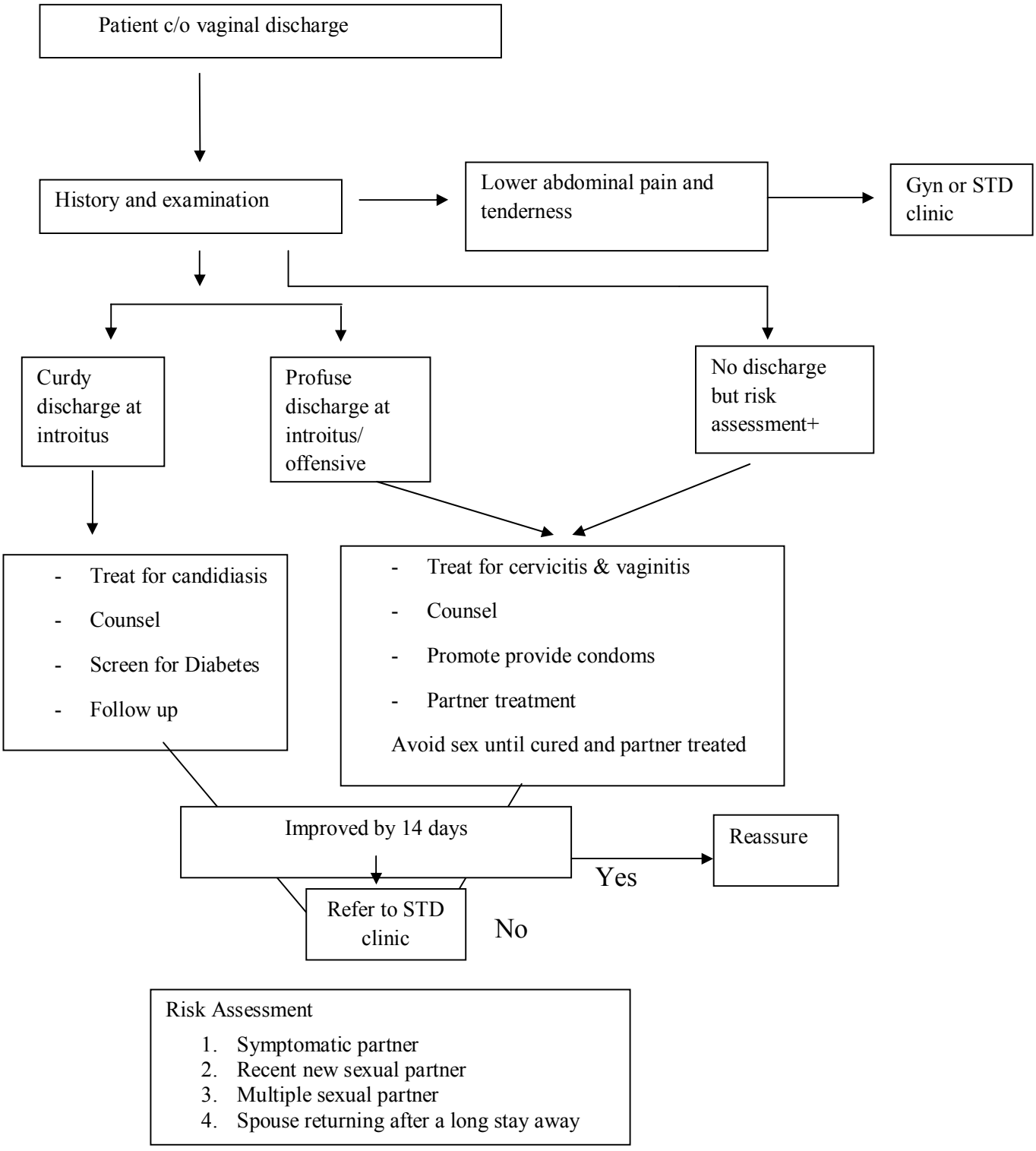
Vaginal discharge in pregnancy may mask signs of abortion complications, rupture of membranes or postpartum infection. If there is no evidence of blood or amniotic fluid, treatment should be given to cover candidiasis, trichomoniasis and bacterial vaginosis.

Vaginal discharge is due to pathological cause they have either vaginitis or cervicitis or both. Vaginitis is caused by trichomoniasis, candidiasis and bacterial vaginosis whereas cervicitis is causd by Gonorrhoea and Chlamydia.

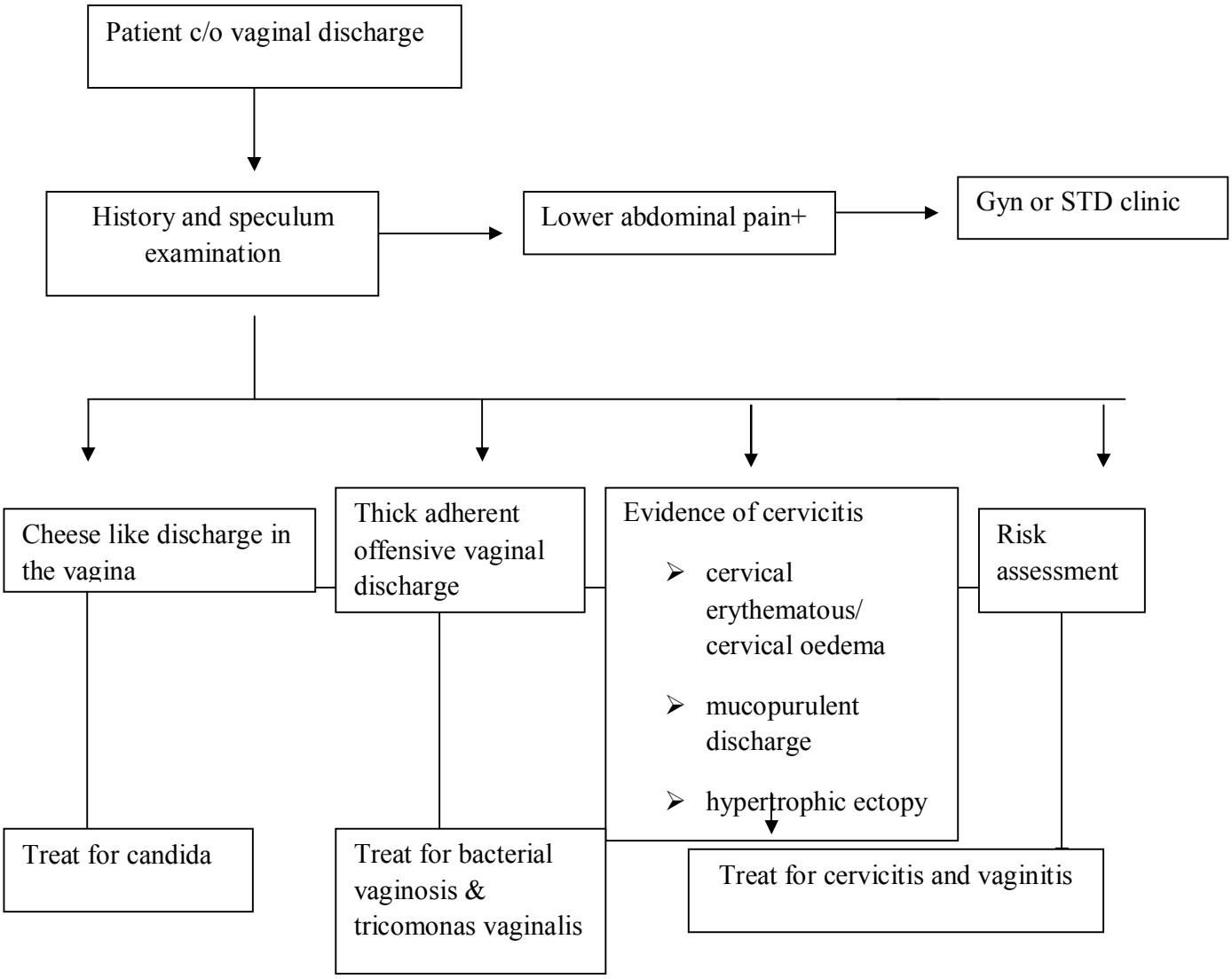
It is normal for women to have a vaginal discharge during pregnancy. However if the vaginal discharge with foul smelling, thick and purulent with yellow discolouration, associated with genital ulcer, it could be due to a pathological cause and therefore it is useful to exclude the presence of a STI.

Vaginitis	**Cervicitis**
• Caused by trichomoniasis, candidiasis or bacterial vaginosis • Complications are less • Need to treat the sexual partner	• Caused by gonorrhoea or chlamidia or both • If untreated will result in complications to the mother and neonatal conjunctivitis of the baby

Management of vaginal discharge- speculum examination is not available



Management of vaginal discharge- speculum available



Treatment for Vaginitis

Includes treatment for trichomoniasis, candidiasis and bacterial vaginosis

Recommended therapy for trichomoniasis and bacterial vaginosis:

- Metronidazole 400 mg given orally twice daily for 7 days is effective

Note: Do not prescribe Metronidazole in the first trimester of pregnancy.

Treat the patient's partner for trichomoniasis with Metronidazole 2g as a single oral dose or Metronidazole 400mg twice a day for 7 days

Treatment for vaginal candidiasis

Nystatin 100000 units (one pressary), inserted intravaginally, once a day at night for 14 days, or

Miconazole or Clotrimazole 200mg, inserted into the vagina once a day at night for three days or

Clotrimazole 500mg, inserted into the vagina once only at night

(Advise the patient to take the complete course of tablets)

Treatment for cervicitis

Recommended therapy for Gonacoccal cervicitis:

Cefuroxime Axetil 1g + Probenecid 1g orally as a single dose, or **Ceftriaxone** 250mg by intramuscular injection in a single dose

Recommended therapy for chlamydial cervicitis:

Erythromycin 500mg orally 4 times a day for 7 days (Preferred treatment is doxycycline 100mg bd for 7 days but doxycycline is contraindicated in pregnancy)

Sexual partners should be treated for gonorrhoea and chlamydia infection. It is preferable to refer to a STD clinic.

Lower abdominal pain syndrome

All sexually active women presenting with lower abdominal pain should be carefully evaluated for signs of pelvic inflammatory disease. Symptoms suggestive of PID include lower abdominal pain, pain on intercourse (dysparunea), bleeding after sex or between periods, and pain associated with periods (if this is a new symptom). Vaginal discharge, pain on urination (dysuria), fever, nausea and vomiting may also be present.

When a woman complaints of lower abdominal pain and has missed a menstrual period or a period is overdue, an ectopic pregnancy has to be excluded since it is an obstetric emergency.

Management of lower abdominal pain during pregnancy

Treatment for PID

Ceftriaxone 250mg intra muscular injection in a single dose

Treatment of chlamydia infection

Erythromycin 500mg orally 4 times a day for 14 days,

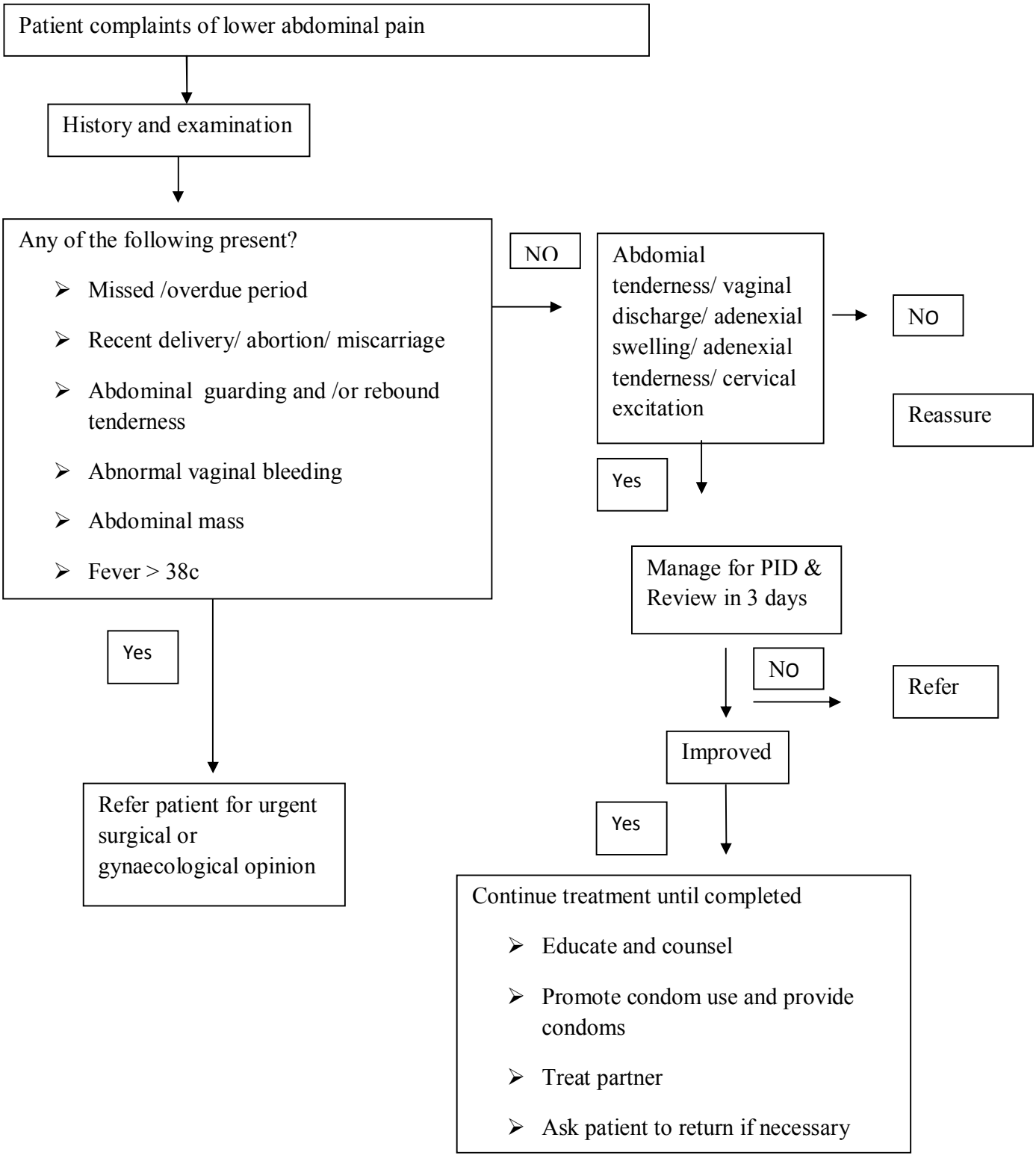
Treatment for anaerobic bacterial infection

Metronidazole 400mg orally twice daily for 14 days

Note: Metronidazole should not be used in the first trimester of pregnancy.

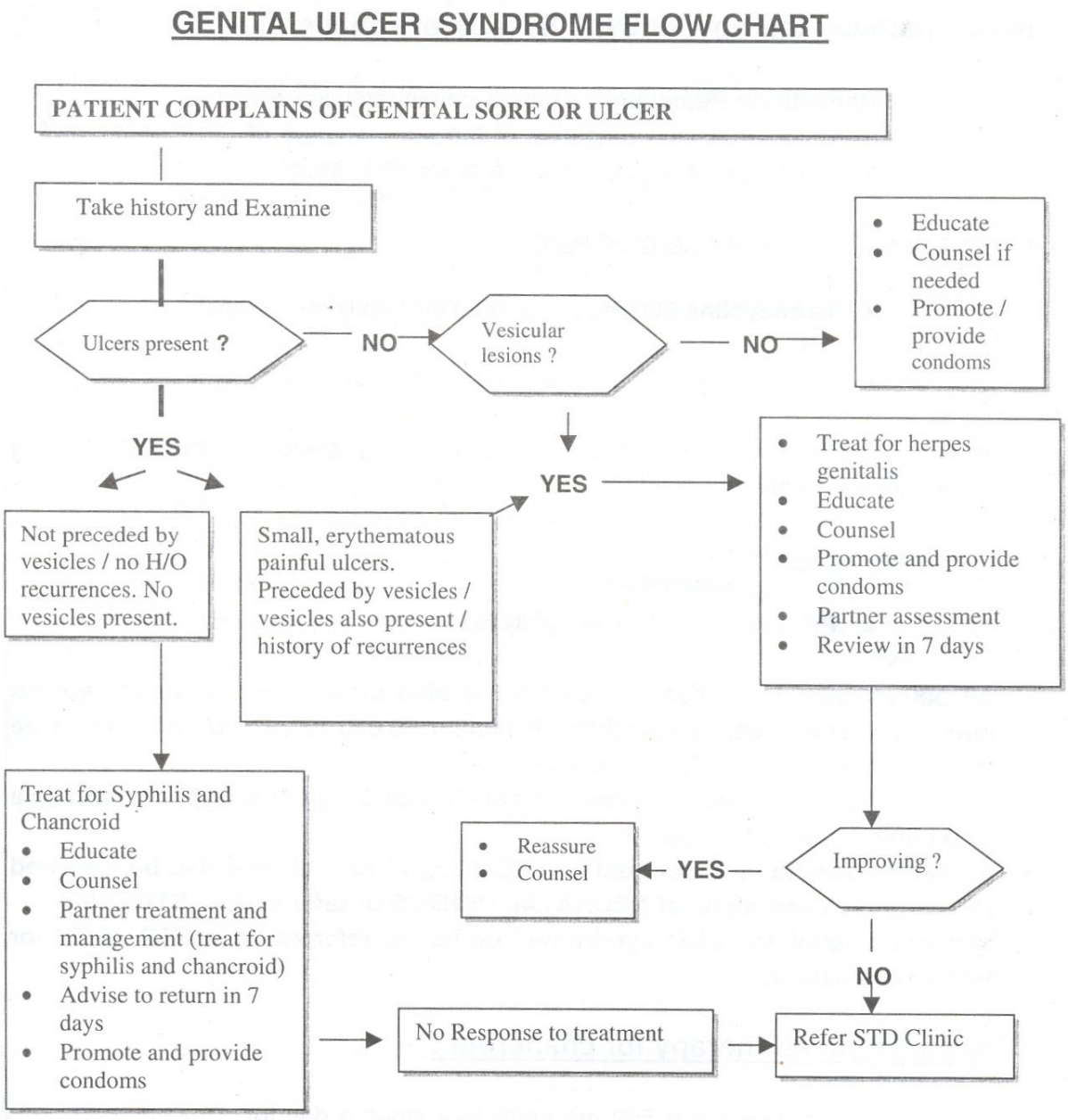
Partner management

The partner has to be treated for gonorrhoea, Chlamydia and mixed anaerobic infections. It is preferable to refer the patient to STD clinic.



Genital Ulcer Syndrome

Genital Herpes, Chanchroid and syphilis are the most common.



Recommended therapy for syphilis (Primary Chancre)

Benzathine penicillin 2.4 million units by single intramuscular injection (Because of the large volume of the dose, give it as two injections at separate sites.)

For patients who are allergic to penicillin:

Doxycycline 100mg orally twice a day for 15 days, or Tetracycline 500mg Orally 4 times daily for 15 days

Note: Ciprofloxacin, doxycycline and tetracycline should not be used during pregnancy or lactation

In pregnancy and lactation use:

Erythromycin 500mg orally four times a day for 15 days

- All babies born to mothers treated for genital ulcers suggestive of syphilis must be treated with Benzathine penicillin 50,000 IU/KG IM or should be referred to a STD clinic for evaluation
- If a baby has signs and symptoms suggestive of congenital syphilis refer to a STD clinic /Peadiatric unit.
- All babies born to mothers treated for GUD syndrome should also be reviewed for symptoms and signs of Neonatal Herpes or referred to a STD clinc.
- Mothers treated for GUD syndrome should be referred to a STD clinic for further evaluation.

Recommended therapy for Chancroid:

- Erythromycin 500mg orally four times a day for seven days

Alternatively the following may be used:

- Ciprofloxacin 500mg single oral dose or
- Cotrimoxazole 960mg (2 tablets) orally twice daily for 7 days

Note: Ciprofloxacin should not be used during pregnancy

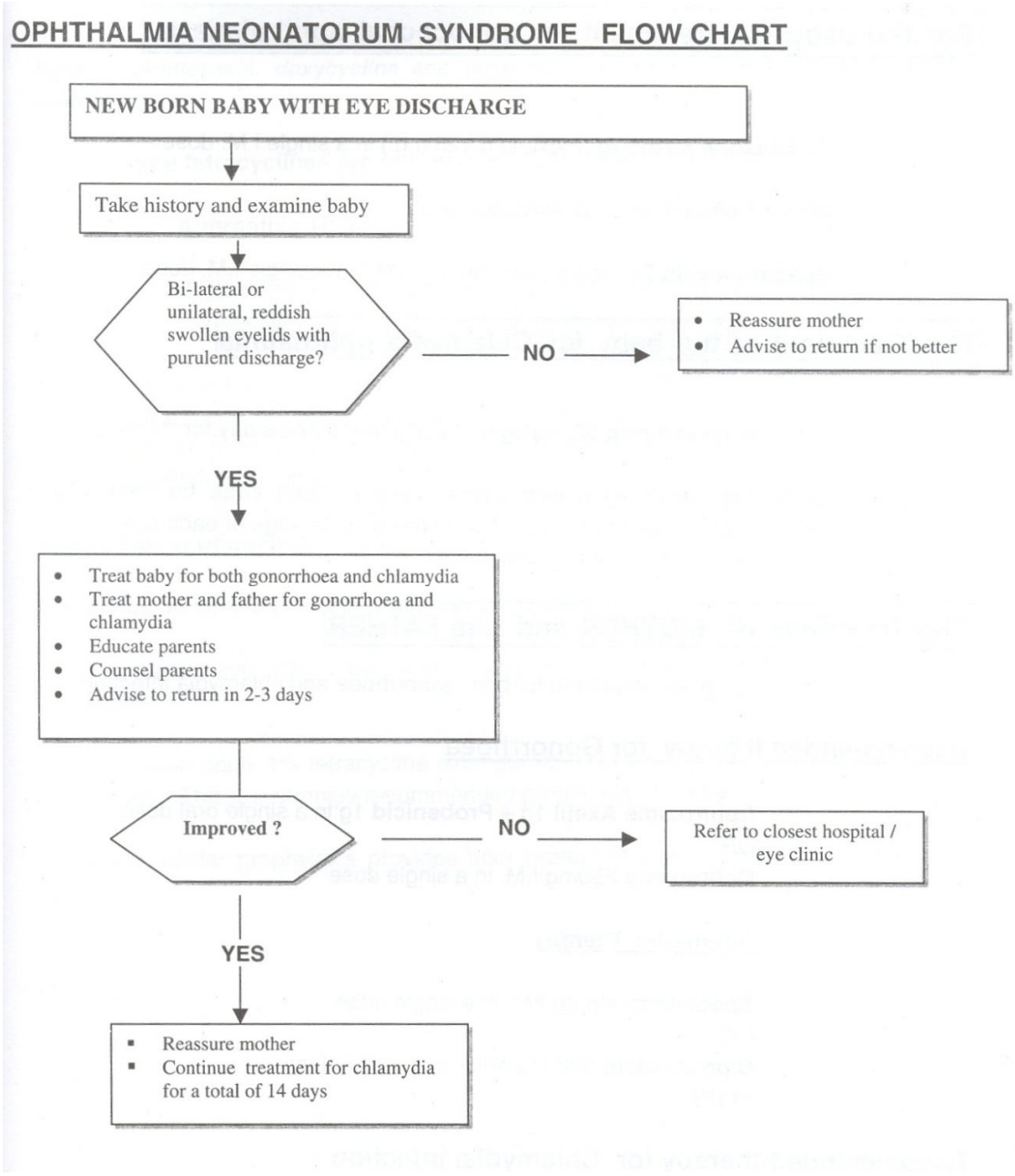
Recommended therapy for genital herpes;

Acyclovir 200mg orally 5 times a day for 5 days. Advice the patient to keep the ulcers clean by washing with a weak solution of salt water

Advice the patient to take all the tablets and inform him or her about mode of transmission of STD and possible complications of infection and recurrences.

Ophthalmia neonatorum syndrome

Ophthalmia Neonatorum is the term used to describe a condition where a neonate develops purulent conjunctivitis in one or both eyes within four weeks of birth. It is a medical emergency and unless treatment is initiated within 24 hours, there could be permanent damage to eyes leading to blindness. It requires systemic therapy as well as local irrigation with saline or other appropriate solutions. Irrigation is particularly important when recommended therapeutic regimens are not available.



For the baby, the treatment for gonococcal ophthalmiais:

Ceftriaxone 50mg/kg (maximum 125mg) in a single IM dose

Where Ceftriaxone is not available, use:

Spectinomycin 25mg/kg (maximum 75mg) in a single IM dose

Treatment of the baby for Chlamydia Ophthalmia:

Erythromycin syrup 50mg/kg/day orally four times a day for 14 days

Clean the baby's eyes with saline, using a clean swab for each eye. Remember to clean from inside to the outside edge of each eye. Wash your hands carefully afterwards.

Treatment of mother and the father:

Should be given treatment for both gonorrhoea and Chlamydia infection.

Recommended therapy for Gonorrhoea:

Cefuroxime axetil 1g orally + Probenecid 1g in a single oral dose or Ceftriaxone 250mg IM in a single dose

Alternative therapy

Ciprofloxacin 500mg orally as a single dose, or Spectinomycin 2g by intramuscular injection in a single dose PLUS

Recommended therapy for Chlamydial infection:

Doxycycline 100mg orally twice a day for 7 days or Tetracycline 500mg orally 4 times a day for 7 days

Note: Ciprofloxacin, doxycycline and tetracycline should not be used by lactating women.

Where tetracyclines are not recommended give:

Erythromycin500mg orally, four times daily for seven days

Advice mother to complete the course of tablets and educate her about the mode of transmission of STD, the nature of the baby's infection, how to clean the baby's eyes and possible

complications of infection. Counsel her and promote the use of condoms.

Prevention of Gonococcal ophthalmia

Ophthalmia neonatorum can be prevented by using timely eye prophylaxis.

The infant's eye should be carefully cleaned immediately after birth with normal saline.

If available apply 1% tetracycline ointment to the eyes of every infant at the time of delivery. This is strongly recommended prophylactic measure.

Chapter 20

NATIONAL GUIDELINES FOR PREVENTION AND MANAGEMENT OF MALARIA IN PREGNANCY

1. Screening

All pregnant women residing in malaria endemic areas should be screened for malaria parasitaemia at the time of registration in the antenatal clinic and at the end of the second trimester. The screening should be done by examining thick and thin blood smears using a finger prick sample of blood.

2. Chemoprophylaxis

Due to the low incidence of malaria in the country, chemoprophylaxis is not advocated as a policy. However, in circumstances where the pregnant women could be considered at risk of acquiring malaria (as decided by the relevant Obstetrician or the MOH/MO) chemoprophylaxis may be initiated after the first trimester.

Choroquine is the drug recommended for prophylaxis. The dose is Chloroquine 300mg base once a week.

Chloroquine can be given after the first trimester of the pregnancy and should be continued throughout the pregnancy and for upto six weeks after delivery.

Important: Before initiating Chloroquine prophylaxis, please ensure that the pregnant woman is free from malaria parasitaemia.

3. Treatment of malaria during pregnancy

(Please refer General Circular No.01-14/2008 dated 7th May 2008 issued by the DGHS "Guidelines for malaria chemotherapy and management of patients with malaria in Sri Lanka" for further details)

If a blood smear is reported positive, ensure that the parasite species is identified (*Plasmodium vivax or Plasmodium falciparum).*

Treatment of a vivax infection in pregnancy:

Plasmodium vivax malaria is treated with Chloroquine.

Day 1 – Chloroquine base 10mg/kg body weight (approx. 600mg = 4 tablets)
Day 2 – Chloroquine base 10mg/kg body weight (approx. 600mg = 4 tablets)
Day 3 – Chloroquine base 5mg/kg body weight (approx. 300mg = 2 tablets)
Primaquine is contraindicated during pregnancy.
After initiation of treatment, repeat blood smears should be examined on day 3, day 14 and day 28 to assess the efficacy of the treatment.

Radical cure of vivvax infection in pregnancy is recommended by the administration of primaquine six weeks after delivery. The dose of primaquine is 0.25mg/kg/day for 14 days.

Treatment of falciparum infection in pregnancy:

Artemedsinin + Lumifantrin (Coartem®) is the recommended drug for patient with uncomplicated falciparum infections. All falciparum patients should be admitted and managed as inward patients.

Primaquine is contraindicated during pregnancy.

After initiation of treatment, repeat blood smears should be examined on day 3, day 14 and day 28 to assess the efficacy of the treatment.

Important:

Pregnant women should not be treated with Coartem® during the first trimester of pregnancy and during the period of exclusive breast feeding.

Quinine (oral or IV) can be used safely during first trimester of pregnancy and in situations that the patient cannot take drugs orally. Quinine can be used safely during the period of lactation.

Dosage: Quinine sulphate orally 10mg/kg body weight 8 hourly for 7 days or

Quinine injection in a dose of 10mg/kg body weight diluted in 5% dextrose solution infused slowly at 8 hourly intervals till the patient can take oral drugs or for at least 7days.

All falciparum infected pregnant women should be administered a single day dose of primaquine (0.75mg/kg/day) six weeks after delivery.

Personal protection:

All pregnant women irrespective of their being on chemoprophylaxis or not, are advised to adopt measures for personal protection from mosquito bites including the use of insecticide treated bed nets, repellants and other measures.

Important:

Any pregnant woman arriving from malaria endemic country and suspected of having malaria infection should be admitted to a medical institution and managed appropriately (please contact Anti Malaria Campaign directorate for advice).

Pregnant women who are travelling to malaria endemic countries should contact the Anti Malaria Campaign directorate for appropriate advice.

Anti Malaria Campaign directorate Contact details:

+94 112 588408, +94 112 368173, +94 112 368174

Chapter 21

MANAGEMENT OF TUBERCULOSIS DURING PREGNANCY

Tuberculosis is an infectious disease caused by the bacillus- *Mycobacterium tuberculosis* and occasionally *by Mycobacterium bovis* and *Mycobacterium africanum*. Tuberculosis commonly affects the lungs, but it can affect any other organ in the body.

How does tuberculosis spread?
The bacteria that cause tuberculosis usually spread through air. When a patient with infectious pulmonary tuberculosis coughs, sneezes or laughs, bacilli are expelled into the air in the form of tiny droplets. These droplets dry up rapidly to form droplet nuclei and may remain suspended in the air for several hours. Adequate through and through ventilation removes and dilutes these droplet nuclei, and direct sunlight quickly kills the bacilli, but they can survive in the dark for several days. When a healthy person inhales these droplet nuclei containing the tubercle bacilli, he/she may become infected.

Risk of infection
An individual's risk of infection depends on the extent of exposure to an infectious source and susceptibility of the individual to infection. The risk of infection is therefore high in a person who has close, prolonged exposure to a person with sputum smear positive pulmonary TB. The risk of transmission of infection from sputum smear-negative pulmonary TB is low and with extrapulmonary TB, still lower.

Who is a TB suspect?

A TB suspect is a person who presents with symptoms or signs suggestive of TB, particularly cough of three weeks or more.

Who is considered a 'Case' of tuberculosis?

A case of tuberculosis is a patient in whom TB has been bacteriologically confirmed or diagnosed by a clinician.

Definite case of TB

A definite case of TB is a patient with positive culture for the *Mycobacterium tuberculosis* complex. (In countries where culture is not routinely available, a patient with two sputum smears positive for acid-fast bacilli (AFB) is considered a "definite" case)

Common symptoms of pulmonary tuberculosis
The clinical presentation of tuberculosis in pregnant women is similar to that in non-pregnant patients.

Respiratory symptoms:

Cough – usually more than three weeks
Haemoptysis (blood stained sputum)

Shortness of breath
Chest pain

Constitutional Symaptoms:

Fever and night sweats
Loss of appetite
Loss of weight
Tiredness (Fatigue)

Symptoms of Extrapulmonary TB

The symptoms depend on the organ involved. Patients may present with constitutional features of the disease – fever, night sweats, loss of weight, and loss of appetite or local symptoms related to the site of the disease.

Investigations

Sputum Smear microscopy

Sputum smear microscopy is the most reliable and cost effective method of diagnosing infectious cases of pulmonary tuberculosis cases. Whenever tuberculosis is suspected in a patient who has had a cough of three weeks or more, three sputum samples should be collected and examined by microscopy for Acid-Fast Bacilli (AFB).

Collection of sputum samples

A PTB suspect should submit three sputum samples for microscopy. Three early morning samples are preferable. Patient should be advised to collect sputum after coughing following a deep inspiration and it should not be saliva.
Outpatients may provide sputum specimens as follows:

First spot specimen - Supervised spot specimen at the first visit
Early morning specimen - Patient is given a sputum container to collect early morning specimen on the following day.
Second spot specimen - Second supervised spot specimen is collected when the patient returns with the early morning specimen, on the following day.

Chest X-ray

The chest X-ray has a limited role in confirming the diagnosis of pulmonary tuberculosis. Diagnosis of tuberculosis by means of X-ray alone is unreliable. Abnormalities seen on a chest X-ray may be mimicked by a variety of other conditions. However chest X-ray is helpful particularly to diagnose PTB in a suspect whose sputum smears are negative for AFB.

The decision to start on anti-TB treatment on patients should not be based solely on abnormal chest X-ray findings and all efforts should be made to perform sputum microscopy.

In pregnancy, chest X-rays should be avoided as far as possible, especially during the first trimester, because of the adverse effects of x-rays on the foetus.

Therefore, diagnosis will depend more on sputum examination when a pregnant mother presents with symptoms suggestive of tuberculosis. However, if an X-ray is absolutely necessary, this may be done with the abdomen covered with a lead apron.

Sputum Culture for AFB
Culture examination of sputum for AFB is more sensitive and specific than direct smear microscopy and may be useful in detecting cases where the number of organisms are fewer than can be detected by direct smear microscopy. But this is more expensive and takes at least 6-8 weeks to get the results.
Under ideal circumstances pre-treatment sputum cultures for AFB should be performed on all PTB patients.

TB treatment regimens
Treatment regimens consist of two phases:

1. Initial intensive phase
2. Continuation phase

Intensive phase
During the initial intensive phase, there is rapid killing of TB bacilli. Infectious patients quickly become non-infectious (within about two weeks) and symptoms improve. Most patients with sputum smear-positive pulmonary TB becomes smear negative within two months. Directly Observed Therapy (DOT) is essential in the initial phase to ensure that the patient takes every single dose. This prevents development of drug resistance. The risk of development of drug resistance is higher during the early stages of anti-TB treatment, when there are more bacilli.

Continuation Phase
During the continuation phase, fewer drugs are necessary, but for a longer period. The sterilizing effect of the drugs eliminates the remaining bacilli, thus preventing subsequent relapses.
Patients who have taken anti-tuberculosis drugs previously are much more likely to develop drug resistance, which may have been acquired through inadequate prior chemotherapy. Such patients require a stronger regimen consisting of more drugs and for a longer period.

Therefore, before starting treatment, it is essential to question all patients closely and carefully to determine whether or not they have previously taken treatment for tuberculosis, so that they can be given the proper treatment regimen.

Standard code for TB treatment regimens
There is a standard code for TB treatment regimens and each anti-tuberculosis drug has an abbreviation.

H – Isoniazid
R - Rifampicin
Z - Pyrazinamide
E - Ethambutol
S – Streptomycin

A TB treatment regimen consists of two phases, the intensive phase and the continuation phase. The number before a phase is the duration of that phase in months. A subscript number (e.g. 3) after a letter

indicates the number of doses of that drug per week. No subscript number after a letter indicates that the treatment is daily.
E.g.: 4 HR means 4 months of Isoniazid and Rifampicin daily.
5 $H_3 R_3 E_3$ means 5 months of Isoniazid, Rifampicin and Ethambutol three times a week.

Table 1 Case definitions, Treatment Categories and Recommended Regimens

Case Definition	Treatment Category	Treatment Regimen	
		Intensive Phase	Continuation Phase
New cases - PTB smear-positive - PTB smear-negative - Extrapulmonary TB	CAT 1	2 HRZE	4 HR
Re-treatment cases - Relapses -Treatment after failure -Treatment after default (smear-positive)	CAT 2	2HRZES / 1 HRZE	5 HRE

Monitoring of sputum smear-positive pulmonary TB patients
Response to treatment should be monitored by sputum smear examination
For sputum smear positive PTB patients, sputum smear examinations should be performed at the end of the intensive phase of treatment (i.e.,second month), during the fifth month and ai the end of treatment. Negative sputum smears indicate good treatment progress.
For sputum smear negative patients sputum smear examination should be performed at the end of two moths of treatment.

Treatment during Pregnancy
Anti-TB treatment should be started as soon as the diagnosis is made, and the full course of treatment given.
The basic principles of treatment are the same in pregnancy. Most anti-TB drugs are safe for use during pregnancy except streptomycin.
Streptomycin should not be given because it can cause oto-toxicity in the foetus.
Pregnant mothers should be given pyridoxine 10mg daily along with INAH.
Vitamin K should be administered at birth to the infant of a mother taking rifampicin because of the risk of post-natal haemorrhage.

Treatment during breast-feeding
A patient who has TB and is breast-feeding should receive the full course of anti-TB treatment. Properly taken treatment is the best way of preventing transmission of TB to her baby. All anti-TB drugs are compatible with breast-feeding. A patient taking anti-TB treatment can continue to breastfeed her baby in the normal way.

Breastfeeding should be avoided only in cases where the mother has dual TB/HIV infection.

Management of a newborn child of a mother with active TB

- Do not separate the child from the mother unless she is acutely ill.
- If the mother is sputum smear negative, and if the infant has no evidence of congenital TB, BCG is given to the infant.

If the mother is sputum smear-positive at the time of delivery, infant should be carefully examined for evidence of active disease.

- If the infant is ill at birth and congenital TB is suspected, a full course of anti-TB treatment should be given.
- If the child is well, give prophylactic treatment with INAH 5mg/ kg body weight, daily for three months. BCG is withheld.

- The Mantoux skin test is done after three months.
  - If the Mantoux test is negative and the child is well, prophylactic treatment with INAH is stopped and child is given BCG.
  - If the Mantoux test is positive, careful examination of the child for active TB is done including a chest X-ray.
  - If active disease is diagnosed, a full course of anti-TB treatment should be commenced.
  - If the physical examination and the chest X-ray are normal, INAH chemoprophylaxis is continued up to six months and BCG is given.

Directly Observed Treatment

Directly Observed Treatment (DOT) is one of the important elements of the internationally recommended strategy for TB control. Directly Observed Treatment means that an observer watches the patient swallow their tablets. This ensures that a TB patient takes the right anti-tuberculosis drugs, in the right doses at the right intervals without interruption and ensures that the patient completes the full course of treatment.

DOT Providers –

The following categories will provide Direct Observation of Treatment.

- Health workers at state health care facilities
- Field health care workers
- General practitioners
- Trained volunteers
- Community leaders

Public health staff especially Public Health Nursing sisters and Public Health Midwives can play a significant role as DOT providers for antenatal and postnatal mothers in their areas who are on treatment.

Provision of drugs for the DOT Centres -

Drugs for each patient will be delivered to the DOT centres from the District Chest Clinic by the PHI or any other staff assigned by the DTCO.

Interruption of treatment (default)

Directly Observed Treatment adapted to the needs of the patient is the best method of avoiding treatment interruption. However, even with directly observed treatment and during the continuation phase of treatment, which may be self-administered, there may be treatment interruption.

Measures to minimize treatment interruption
At the time of registration of a TB patient, the staff must educate the patient and the family regarding the duration of treatment and the importance of adherence to treatment.

It is vital to record the patient's address and other relevant addresses e.g. parents or work place etc. in order to help locate the patients who interrupt treatment. As far as possible, the address should be verified at the beginning of treatment.

Public Health Midwives in their field visits and at antenatal clinics should inquire about uninterrupted continuation of treatment from patients and should encourage them to continue treatment.

Management of patients who interrupt treatment
It is important to take action on defaulters immediately. Patients should be contacted the day after missing a dose during the intensive phase and as soon as possible during the continuation phase. It is important to find out the reason for the patient's absence in order to take appropriate action and continue treatment.

Notification
At the point of diagnosis, all tuberculosis patients should be notified using TB notification Form (H 816).

Contact screening
Household contacts of infectious TB patients (adults and children >5 years) should be screened for symptoms of TB. Those who have symptoms suggestive of TB should be investigated with sputum smears irrespective of the duration of the symptoms.
Children under the age of 5 years should be screened with chest X-ray and Mantoux test.

Preventive treatment
The aim of preventive treatment is to prevent progression of *M. tuberculosis* infection to disease.

Primary chemoprophylaxis
When a person is exposed to TB bacilli, but not yet infected eg. newborn breastfed baby of a sputum smear-positive mother

Secondary chemoprophylaxis
A person who is infected, but not yet developed clinical disease e.g. tuberculin positive close contacts of sputum smear-positive patients.
In Sri Lanka, chemoprophylaxis is given for the following groups:

- Breast fed infants of sputum smear-positive mothers.
- Household contacts below 5 years of age of sputum smear-positive patients, who do not have evidence of active disease.

Prophylactic treatment in Sri Lanka is – INAH 5mg/ kg body weight for 6 months.

For further details refer 'General Manual for Tuberculosis Control' published by National Program for Tuberculosis Control and Chest Diseases.

POSTNATAL CARE

Chapter 22

POST NATAL CARE

Postnatal period begins immediately after birth of the baby and extend up to 6 weeks (42 days) after birth:

Immediate postnatal period - the phase immediately following child birth up to 24 hours

Early postnatal period - Day 2-7

Late postnatal period - Day 8-42

The major objectives of the postnatal care are:

- To provide a supportive environment in which a woman, her newborn baby and the wider family can begin the transition of their lives
- To recognize danger signs in the mother and the newborn and to help them to take timely actions
- To maintain good physical and mental health in both mother and the newborn
- To support, promote and protect breast feeding
- Counseling on family planning to help the mother to select a method and provision of services where needed.
- Recognize the child as a service utilizer

22.1 Immediate postnatal period

This is the period during which infant's physiology undergoes adaptation and the risk of postpartum haemorrhage is highest. Close professional supervision is required in this period to identify problems early and intervene appropriately. According to the discharging policy in Sri Lanka, postnatal care during immediate postnatal period is given at a hospital.

Immediate Maternal Care

- All women should be examined one hour after delivery of placenta, including assessment of anaemia.
- All postnatal mothers should have regular assessment of vaginal bleeding, uterine contraction, fundal height and temperature.
- All women should be encouraged to mobilize appropriately as soon as following the birth
- Measure and document BP once within 6 hours after the last measurement taken soon after birth
- Document urine output during first 6 hours
- Toilet facilities that are hygienic and ensure privacy should be provided at a distance with easy accessibility
- Ensure adequate rest for the woman and access to food and drink on demand

Concerns

- If infection is suspected, a woman's temperature should be measured and documented. If the temperature is above 38^{o}C, it should be measured again in 4-6 hours and need to find out the cause.
- If a woman has excessive and offensive vaginal discharge, abdominal tenderness, fever and any abnormalities in the size, tone and position of the uterus, she should be evaluated. These women may need urgent action.
- If diastolic blood pressure is greater than 90mmHg, and there are no other signs and symptoms of pre-eclampsia, the measurement of blood pressure should be repeated within 4 hours.
- If a woman has not voided by 6 hours postpartum irrespective of measures to encourage micturition (such as taking a warm bath or shower), bladder volume should be assessed and catheterization need to be considered (urgent action). If a woman is obese, she will require individualized care.
- Immediate referral or emergency action is required if there is:

  Sudden or profuse blood loss or loss accompanied by any of the signs and symptoms of shock, including trachycardia, hypotension, hypoperfusion and change in consciousness

  Diastolic BP is greater than 90mmHg and accompanied by another sign or symptom of pre-eclampsia, or if diastolic BP is greater than 90mmHg and is not reduced below 90mmHg within 4 hours.

  The temperature remains above 38^{0}C on the second reading or there are other observable symptoms and measurable signs of sepsis

  A woman complained of unilateral calf pain, redness, swelling, and shortness of breath or chest pain

All women should be given information about the physiological process of recovery after birth, and that some health problems are common, with advice to report any health concerns to health care workers, in particular:

Signs and symptoms of PPH: sudden and profuse blood loss or persistent increased blood loss: faintishness; dizziness; palpitations/tachycardia

Signs and symptoms of infection: fever, shaking, abdominal pain and/ or offensive vaginal loss

Signs and symptoms of thrombo-embolism: unilateral calf pain; redness or swelling of calves; shortness of breath or chest pain

Signs and symptoms of pre-eclampsia: Headaches, visual disturbances, nausea, vomiting, feeling faint.

Women who have had an epidural or spinal anaesthesia should be advised to report any severe headache, particularly when sitting or standing

Advice on postpartum care and hygiene, especially hand washing and use of clean napkins or pads

Give advice on proper nutrition during lactation (page 85).

Counsel on birth spacing and family planning with special attention to lactational amenorrhoea and emphasis the need of using a family planning method by 6 weeks.

Advise on routine postpartum care at the field and ask them to inform area PHM as soon as they go home to get routine care.

Advice on postpartum danger signals and discuss the postpartum emergency plan (page 65).

Give Vit A mega dose (200,000IU) before discharge.

If she is not immunized with Rubella, make arrangement for rubella immunization before discharge.

Do a vaginal examination before discharge and ensure that there are no foreign bodies in the vagina eg. Gauze packs etc

Complete all the documents eg Diagnosis cards, pregnancy record and hand over the relevant documents to mother.

Help the mother to register the birth.

Advice about maternal benefits, if relevant.

Immediate Newborn Care

- Baby should be delivered on to the mother's abdomen
- Immediately dry the baby with a warm clean towel or piece of cloth. Thoroughly dry the baby to prevent it getting cold. Wipe away any blood or meconium. Do not wipe off the vernix ax it helps to protect the bay's skin and gets reabsorbed very quickly.
- Assess the baby's breathing while drying
- Make sure that there is no second baby
- Change gloves. If this is not possible wash the gloved hands
- Clamp and cut the umbilical cord
- Leave the baby between the mother's breasts to start skin to skin care
- Place an identity label on the baby
- Cover the baby's head with a hat and cover the mother and baby with a warm cloth
- Encourage initiation of breastfeeding. Keeping the newborn skin to skin between the mother's breasts encourage this process.

During the first hour of life:

- Ensure the mother and baby are in a warm room which is not less than 25^0c with no draught
- Mother and baby should not be separated. Keep the baby in the same room with the mother in her bed or within easy access.

- Skin to skin contact should be encouraged for all the newborns in the first hour of life. For low birth weight newborns skin to skin contact (Kangaroo Mother Care) can be practiced as long as the baby requires.
- Brest feeding should be initiated within the first hour of life and continue on demand. Identity hunger cues and start breastfeeding when the baby is ready. Support exclusive breastfeeding on demand day and night Newborn should be dressed adequately in order to to maintain the body temperature. Baby's head should be covered with a cap. Additional layer of clothing should be worn if it is in a cooler climate.
- Resuscitate a baby that is not breathing spontaneously (weight, length, head circumference etc.),
- Assess the gestational age and take measrements.
- Vitamin K should be offered for all infants and administered with a single dose of 1mg IM.

Maintaining infant health

Round the clock keep the mother and baby together in the same bed or in the same room within easy access to the mother. Continuing skin to skin contact, whenever possible.

In areas where it is necessary, cover the mother and baby with a bed net

Ensure exclusive breastfeeding on demand during day and night for the newborn. In case if the mother develop difficulties in breastfeeding make her aware how to seek support from her area PHM or at the closest hospital Lactation Management Centre

Make the mother aware about routine care of the newborn

- Keeping the baby warm – Newborn should be dressed adequately and the head should be covered with a cap during the first few days. Additional layer of clothing should be worn if it is in a cooler climate.
- Dress the baby well and keep covered with a soft cloth. If the baby is not kept with the mother, check for warmth every 4 hours by touching bay's feet. Delay bathing until at least the baby is 6 hours old.
- Care of the umbilical cord (should be kept dry, should not apply anything on the cord stump, if it is soiled, wash with soap and water and dry well.
- Daily clean the baby's face, neck and the arm pits. Clean the buttocks when soiled. Bath the baby when required using warm water. After bathing make sure to keep the baby warm

Assessment for emotional attachment should be carried out at each postnatal contact

First clinical examination should be done around an hour after the birth to assess if baby can stay with the mother or needs additional care or referral to special care.

Assess the malformations and birth injuries

Infants who develop jaundice within the first 24 hours should be urgently investigated.

Teach the mother how to care for a small baby (pre-term or low birth weight) eg. Kangaroo-mother care

Give special support to breast feeding the small bays or twins.

Teach the mother to observe for the danger signs in the baby and to call health worker if she has concerns.

Examine before discharge. Discuss with mother postnatal care and emergency plan.

Only discharge small babies if discharge criteria met: Exclusive breast feeding, stable temperature, weight gain, mother feeling competent caring for the baby.

Support for breast feeding:

Breast feeding support to a woman should be made available regardless of the location of care.

Women should be offered skilled support including mother to mother or peer support from the commencement of the breast feeding.

Additional support with positioning and attachment to commence breast feeding should be offered to all women who had:

- A caesarean section, particularly to assist with handling and positioning the baby to protect the ceasarean section wound
- Initial contact with their baby delayed
- Twins

Unrestricted frequency and duration of breast feeding should be encouraged.

A PHM should discuss the woman's experience with breast feeding daily to assess with her if she is on course to breast feed effectively and identify need for additional support.

A written breastfeeding education material should be available and health care staff should use them in routine BF lecture/demonstrations.

If breastfeeding problem is identified, refer mother to lactation management center

Teach all mothers how to relieve engorgement and expressing breast milk and feeding the baby with a cup.

Women with flat or inverted nipples should be advised that these are not contraindications to breastfeeding and support should be offered as needs

If a woman is experiencing breast or nipple pain, healthcare worker should review positioning and attachment.

A baby who is not attaching effectively may be encouraged to open his/her mouth using different stimuli.

Skin to skin contact or massaging the baby's feet should be used to wake the baby.

Only discharge the baby if mother feels competent in breast feeding.

Women should be offered information and reassurance on:

- Colostrum which will meet the needs of the baby in the first few days after birth
- Timing of the initial breast feed, including the protective effects of colostrum
- The nurturing benefits of putting the bay to the breast in addition to the nutritional benefits of breasfeeding.

Women should be reassured that brief discomfort at the start of breast feeds in the first few days is not uncommon, but should not persisits.

22. 2 Post natal care at the field

Once the mother is discharged from the hospital, professional postnatal care is provided through home visits by the PHM and postnatal clinics (a component of a poly clinic). Other than that woman caring for herself and newborn with the support of the family. Therefore, health workers need to be ensured that home practices are in line with evidence based best practices and give some skills to the family and community to support women and babies during this critical period.

Postnatal care model in Sri Lanka consists of domiciliary care and clinic care. The area public health mid wife (PHM) is responsible for the post natal home visits while hospital or field clinic manned by a qualified medical officer responsible for clinic care.

For Normal vaginal delivery:

02 home visits during first 10 days after delivery (first visit first 5 days)
01 home visit during 14-21 days (around 15th day) after delivery
Postnatal clinic visit at 4-5 weeks
01 visit around 42 days (6-7 weeks) after delivery

For Home delivery:

03 visits during first 10 days after delivery
01 visit 14-21 days (around 15th day) after delivery
Postnatal clinic visit at 4-5 weeks
01 visit around 42 days of delivery

Women with postnatal complications need more clinic visits as well as home visits. Women who had still births and infant deaths should be also visited by the PHM.

First and second home visits (within the first 10 days post partum)

A locally adopted system should be implemented to inform the PHM regarding the child birth as soon as they are discharged from the hospital eg. messenger, telephone call or a specially designed card etc.

PHM

- Should be able to identify all the post partum mothers in her area including those come from other areas.
- should be able to identify and take necessary action to the problems in mother and baby

Observe:

General condition of the mother and the home:

Cleanliness and order in the house and the place where new born and mother live (ventilation, light, safety, warmth, humidity, smoke exposure)
Mother and baby are within easy reach.
Personnel hygiene of the mother
Behaviour and the mood of the mother (sad, happy)
Support and general attitude of other family members towards mother and baby

Baby:

PHM should mainly consider the following important points in the care of the newborn (essential newborn care):

- Ensure that the baby is kept warm
- Keep the mother and the baby together, in the same room, same bed or within easy reach
- Support exclusive breastfeeding on demand day and night
- Teach the mother how to care for the baby

Look at the CHDR and neonatal diagnosis cards, if any
Ensure that BCG immunization has received
Identify the presence of any high risk condition which needs special attention

Wash hands with soap and water before examining the baby.
Select a place with good light for examination.

Ask:

- Mothers feelings or observations about the baby
- Feeding: On demand feeding, frequency of feeds, any concerns of the mother
- Excretion: Urine - frequency / stool - colour and consistency
- Sleep
- Crying
- Any abnormalities observed – eye discharge, vaginal discharge, umbilicus, yellow discoloration, etc
- Vomiting

Observe and examine :

- General appearance: weight, colour, any other external abnormalities
- Look at the presenting part : swelling or bruises
- Movements : Normal/abnormal
- Observe the cry
- Hygiene of the baby
- Breathing : Normal/ grunting/ and count breaths (30-60 per minute)
- Feel for warmth. If cold or very warm measure the temperature
- Tone : Normal/ abnormal
- Colour: tip of the nose, eyes, skin (cyanosis, jaundice)
- Condition of the umbilicus
- Presence of any danger signs – box below

Danger signs in the newborn

- Fast breathing (more than 60 breaths per minute)
- Slow breathing (less than 30 breaths per minute)
- Severe chest in-drawing
- Grunting
- Convulsions
- Floppy or stiff
- Bluish discolouration of the body
- Fever (temperature > 38^0C)
- Cold body ((temperature < 35^0C) or not rising after rewarming
- Bleeding from umbilical stum or cut
- Yellow discoloration of the body
- Pallor
- Diarrhoea
- Vomiting after every feed
- If a baby who was breastfeeding well refuses two consecutive feeds
- Umbilicus draining pus or umbilical redness extending to skin (periumbilical redness)
- Swelling in one or more limbs
- Weakness in any one of the limb
- Weak cry
- More than 10 skin pustules or bullae or swelling, redness, hardness of skin

If any danger sign is detected refer the baby immediately for care. If any other problem is detected refer accordingly

Breast feeding:
Ask from the mother:

- Any concerns or difficulties in breastfeeding
- How many times the baby has fed in 24 hours
- Whether the baby is satisfied after a breastfeed
- Whether the baby is exclusively breastfed
- How her breasts are feeling

Observe a breast feed:

If the baby has not breastfed in the previous hour ask the mother to put the baby on her breast and observe breastfeeding for about 5 minutes and observe the following;

- The position of the mother
- The position of the baby during breastfeeding
- Attachment of the baby to the breast during breast feeding
- Whether the baby is suckling effectively

If the baby has fed in the last hour ask her to tell you when her baby is willing to feed again.

Asses the mother's breasts if complaining of nipple or breast pain

- Look at the nipples for fissures
- Look at the breasts for swelling, shininess or redness
- Feel gently for the painful part of the breast
- Measure temperature
- Identify and solve problems during breast feeding
- Advice to check adequacy of breast milk (How many times that baby has passed urine, duration of a feed)

Educate mother on activities that should be done for psycho social development of the baby - kissing the baby, touching, Nalavili gee
Educate the mother on how to keep the baby warm.
Educate mother on how to keep the home environment safe and clean (with out dust, cold, smoke)
Advice on methods of infection control- the importance of limiting visitors, limiting the number of handlers, hand washing

Inquire about the myths and correct them- ratha kalkaya, gammiris pibima
Inquire and solve the problems with BCG immunization
Register the baby and maintain records
Decide on date of next visit according to the problems identified

Mother:

Ask:

Enquiries should be made about general wellbeing and all common health problems:

- Micturition, dysuria and urinary incontinence
- Bowel functions : diarrhea /constipation
- Vaginal bleeding: amount/ colour
- Vaginal discharge : amount/ smell/ colour
- Lower abdominal pain

- Vomiting
- Breathing difficulties
- Severe headache
- Calf pain
- Visual disturbances
- Healing of any perineal wounds
- Back pain

Examine:

- General appearance of the mother: shortness of breath, cyanosis, icterus
- Temperature
- Respiratory rate
- Pulse rate
- Features of anaemia: pallor in tongue, conjunctiva , nails
- Oedema: ankle, facial, fingers
- Breast (if not done earlier): breast engorgement, cracked nipples, breast abscesses
- Abdomen: size and consistency of the uterus, LSCS scar
- Perinium:
    - Lochia: amount, colour and smell
    - Vaginal discharge: colour and amount
    - Vaginal bleeding
    - Episiotomy scar: infected or not, gaping, healing
    - Personnel hygiene of the mother in relation to perineal area
    - Mental status: sad/happy, features of psychosis
    - Check urine if indicated (Pre eclampsia, diabetes, renal disease
    - If need carry out a vaginal examination

Intervene:
Encourage mother to use self care techniques such as taking gentle exercises, taking time to rest, having help to care for her baby, talking to someone about her feelings

Ask the mother about her emotional well-being, what family and social support they have and their usual coping strategies for dealing with day to day matters. Post natal mother and her partner and family should be encouraged to tell their health care workers about any changes in mood, emotional state and behavior that are outside of the mother's normal pattern.

Observe for any risks, signs and symptoms of domestic abuse and aware who to contact for advice and management.

The PHM should identify, evaluate and manage common health problems as appropriate:

1. Carry out assessment of perineum. If perineal pain is present advise on tropical cold therapy or Paracetamol for pain relief.
2. Signs and symptoms of infection, inadequate repair, wound breakdown or non-healing should be referred to the nearest hospital or MOH clinic for further evaluation and management.

3. Management of mild postnatal headache should be based on differential diagnosis of headache type. Check the blood pressure if BP apparatus is available. Otherwise refer to nearest hospital or healthcare centre to check blood pressure and act accordingly.
4. If a woman has tension or migraine headaches, the PHM should offer advice on relaxation and avoidance of factors associated with the onset of headache eg. coffee, chocolate etc.
5. Back pain should be managed with paracetamol and correct postures.
6. A woman with some involuntary leakage of a small volume of urine should be taught how to do pelvic floor exercises.
7. If constipation present, advice increased intake of fibre and fluids. If problem persists advise use of gentle stimulant laxative.
8. Women with haemorrhoids should take measures to avoid constipation. If a woman has a haemorrhoid which is severe and swollen or prolapsed, or any rectal bleeding, refer to the hospital for further evaluation and management.
9. If the woman complains of persistent fatigue, refer her for haemoglobin level evaluation.
10. Inquire about the antenatal complications and see whether she is complying the advices given for the postpartum period.
11. Once assesses, women with the following conditions should be referred for treatment:
    Severe or persistent headache and/ or other symptoms of pre-eclampsia
    Sustained postpartum vaginal bleeding
    Persistent urinary incontinence
    Faecal incontinence

Postpartum women should be offered information and assurance about:

- Perineal pain and perineal hygiene
- Urinary incontinence and micturition
- Bowel functions
- Rest and sleep

- Support from the husband and other family members
- Bathing
- Nutrition – advise to eat a greater amount and variety. Reassure that she can eat all normal food. Advise the women against food taboos, continuing iron folate, whether she has got vitamin A megadose, (if not give her Vit A mega dose) adequate fluid intake
- Advice the mother and the family on danger signals during postpartum period (heavy vaginal bleeding, severe abdominal pain, fever, foul smelling vaginal discharge, severe headache, calf pain etc.) and actions to be taken if such signal is identified
- Educate the family on importance of breast feeding, rest and possible psychological changes of the mother.

Complete all the relevant records.

Mothers with problems may need more visits. Decide on date of next visit according to the problems identified.

Danger signals during postnatal period

If a postpartum woman has any of the following signs or symptoms, **advise to go to a hospital immediately.**

- Features of high blood pressure:

  Severe headache

  Faintishness

  Burning pain or tightness in the chest or upper abdomen

  Blurring of vision or visual disturbances

  Shortness of breathing

- Increased vaginal bleeding or bleeding with clots
- Pain in the calf muscles which increased with walking
- Difficulty in breathing in a mother with heart disease

If a postpartum woman has any of the following signs or symptoms **meet a doctor immediately**.

- Foul smelling/ excessive or purulent vaginal discharge
- Episiotomy wound – gaping, infected, abscess formation or severe pain
- Fever during first six weeks after delivery
- Difficulty in breathing – gradually increasing or increased rate of respiration
- Pain in the chest
- Mental distress- lack of sleep, less attention to the baby, mental liability, feels frustrated, suicidal thoughts

Home visit 3 (within 11-21 days)

Observe the general condition of the mother and the home as described earlier.

Baby:

Ask:

- Mothers feelings or observations about the baby
- Feeding: On demand feeding, frequency of feeds, any concerns of the mother
- Excretion: Urine - frequency / stool - colour and consistency
- Sleep
- Crying
- Any abnormalities observed – eye discharge, vaginal discharge, umbilicus, yellow discoloration, etc
- Vomiting

Examine:

- Color: cyanosis, icterus
- Umbilicus: fallen or not, discharge, peri-umbilical redness
- BCG scar
- Excretion (stool/ urine: frequency, colour)
- Infections: pustules discharges
- Feeding – correct positioning of the baby to breast, adequacy of breast milk, solve problems during breast feeding

Intervene:

Educate on family on the duties of mother/ father for psycho social development of baby
ECCD practices
Safety of the baby – animals, physical environment, older children,
Refer to post natal clinic for weighing, examination by 4 weeks
Maintain records.
Revisit if needed

Mother:

Enquiries should be made about general wellbeing and all common health problems as described in first visit.

All post natal women should be asked about resumption of sexual intercourse and possible dyspareunia as part of an assessment of overall well-being.

Asses the mental condition of the mother – rest, sleep, unhappiness, loneliness

All women should be asked about resolution of symptoms of maternal blues. If symptoms have not resolved, the woman's psychological well-being should continue to be assessed for postnatal depression. Refer to MOH clinic.

Continue to observe for any indication of domestic abuse.

Examine:

- Involution of the uterus
- Episiotomy scar and LSCS scar
- Vaginal discharge/ lochia
- Breast examination- engorgement, abscess, nipple cracks

Intervene:

Nutrition of the mother – diet, use of micronutrients, see the compliance of drugs taken for any disease conditions.

Any positive response to queries about common health problems should be evaluated, treated or referred appropriately:

Dyspareunia

If a woman expresses anxiety about resuming intercourse, reasons for this should be explored with her and help her to resolve those anxieties

If a woman is experiencing dyspareunia and has sustained perineal trauma, examine her perineum and assess the condition and act accordingly

A water based lubricant gel to help to ease discomfort during intercourse may be advised.

If a woman continues to express anxiety about sexual health problems refer her to MOH clinic for further evaluation

If persistent postnatal fatigue is impacting on the woman's care of herself or baby, underlying physical, psychological and social causes should be evaluated.

Give information:

- Family planning methods
- Importance of exclusive BF for 6 months
- Personal hygiene of the mother
- Maternal benefits
- Breast feeding for working mothers
- Older children's psychological aspects
- Initiation of sexual activity and possible dyspareunia
- Importance of continuing micronutrient intake

All mothers should be referred to a postnatal clinic during 4-6 weeks of postpartum. Give date for the post natal clinic.

Complete all relevant records.

Home visit around 42 days

Baby:

- Support mother to maintain the nutrition, cleanliness, and psychosocial development of the baby
- Check whether mother is maintaining the records of psycho social developmental activities of the baby according to the age
- Refer baby for immunization
- Explain the importance of weighing the baby monthly to assess the growth

Mother:

Enquiries should be made about general wellbeing and all common health problems as described.
Educate mother on family planning method and refer her to family planning clinic (give a date)

Confirm the adequacy of breast milk and encourage mother to breast feed exclusively for 6 months
Enquire about family support
Solve problems in sexual intercourse
Inquire about mother's mental status and support mother to develop her self esteem

Chapter 23

Post Natal Clinic

Area public health mid wife should refer all post natal mothers to the post natal clinics in 4-6 weeks post partum. Post natal clinic should be a component of a poly clinic. There should be two post natal clinics per month. A date for the post natal clinic should be given to all mothers during the home visits and it should be mentioned in H 512 & CHDR. The attendance of mothers for post natal clinics should be entered in the clinic attendance register as well as the clinic summary. The number of mothers attended, mothers found with post partum complications and mothers referred for specialized care should be entered in the quarterly clinic record (H -527).

The goals of post natal clinic:

Mother

- Monitoring and evaluation of field post natal care
- Identifying the problems not identified by PHM
- Give treatment / advices/ referrals if needed.
- Counseling on family planning and provision of FP services
- Analysis of postpartum mental status using EPDS
- Strengthening the support from family and the husband
- Assess and support the ECCD practices of the mother

Baby

- Complete examination of the baby
- Assess breast feeding, identify and solve problems
- Assess the growth and development of the child

Activities:

- Registration of mother and baby
- Measuring of head circumference and the weight of the baby
  Care for the mother

Ask:

- Inspection of previous records (512 A, 512 B, diagnosis cards)
- History of the pregnancy
- Post partum complications – breast problems, episiotomy scar, constipation, behavioral changes, post partum hemorrhage, vaginal discharges etc.
- Nutritional status and personal hygiene
- Sexual intercourse
- Intake of vitamins/ drugs

Examine:

- Pallor
- Oedema – facial, finger, ankle
- Icterus
- Sudden onset of breathlessness
- Psychological assessment using EPDS
- Blood pressure
- Abdomen and perineum(if needed)

Investigations (if needed) :

- Urine albumin/ sugar
- Hb

Actions:

- Advice , treat and refer for the identified complications
- Refer for family planning services
- Supply nutritional supplements and vitamins
- Give a date for next visit for FP /immunization
- Give Rubella vaccine if not given before

Care for the baby

Aks:

- Check the diagnosis card if any
- Breast feeding
- Urine output/ bowel opening
- Sleeping habits
- Eye to eye contact (milestones)
- Any worries for the mother

Examine:

- General appearance
- Fill the neonatal examination form / check list / CHDR
- BCG scar
- Check the neonatal diagnosis card if available
- Check the CHDR
- Supervise breast feeding technique (if weight gain not adequate)
- Check for exclusive breast feeding
- Do investigations (if needed)
- Take necessary actions

A separate date or time for the post natal clinic should be given to mothers who had still births/ neonatal deaths.

(For further information please read PCPNC guide and guidelines on postnatal care published by FHB)

Chapter 24

FAMILY PLANNING AFTER DELIVERY

Help pregnant women and new mothers (along with their male partners) decide how they will avoid pregnancy after childbirth. Ideally, family planning counseling should start during antenatal care and in particularly in the third trimester.

- Waiting until her baby is at least 2 years old before a woman tries to become pregnant again is best for the baby and good for the mother, too.
- A woman who is not fully breastfeeding is able to become pregnant as soon as 4 to 6 weeks after childbirth.
- For maximum protection, a woman should **not** wait until the return of monthly bleeding to start a contraceptive method, but instead she should start as soon as possible.
- Every woman should be properly counselled to ensure that she uses a family planning method. If a method is not provided in the hospital refer to the Medical Officer of Health in the area.
- A woman may decide whether she wants to use a family planning method for spacing (short term method) or limiting (long term method) pregnancies.

Earliest Time That a Woman Can Start a Family Planning Method after Childbirth

Family Planning Method	
Short term methods for spacing	
Male or female condoms	Immediately
Copper-bearing IUD	Within 48 hours, otherwise wait 6 weeks
Progestin-only injectables (DMPA)	6 weeks after childbirth
Implants	6 weeks after childbirth
Combined oral contraceptives	6 months after childbirth
Long term methods for limiting	
Female sterilization	Within 7 days, otherwise wait 6 weeks
Vasectomy	during partner's pregnancy , Immediately after child birth or later as early as possible

Chapter 25

SCREENING FOR POSTPARTUM DEPRESSION

Edingburgh Postnatal Depression Scale (EPDS)

The EPDS was developed for screening postpartum women for postnatal depression in outpatient, home visiting settings or at the 6-8 week post partum visit examination. It has been utilized in many countries. This scale has been validated for Sri Lanka and pilot tested in several settings.

The EPDS consists of ten questions. The test can usually be completed in less than 5 minutes. Responses are scored 0,1,2,or 3 according to increased severity of the symptom. The total score is determined by adding together the scores for each of the 10 items. Validation studies have utilized various threshold scores on determining which women were positive and in need of referral. A woman scoring 9 or more points or indicating any suicidal ideation – that is she scores 1 or higher on question No. 10, should be referred immediately for follow up. Even if a woman scores less than 9, if the clinician feels the client is suffering from depression, an appropriate referral should be made.

The EPDS is only a screening tool. It does not diagnose depression.

Instruction to use:

1. The screening for postnatal depression should be done at the postnatal clinic (4-6 weeks).
2. The mother is asked to underline 1 of 4 possible responses that comes the closest to how she has feeling the previous 7 days.
3. All 10 items must be completed.
4. Care should be taken to avoid the possibility of the mother discussing her answers with others.
5. The mother should complete the scale herself, unless she has limited ability or has difficulties in reading and understanding.

Edinburgh Postnatal depression Scale

As you may know, some women become depressed after they have had a baby and it is sometimes difficult for them to tell anyone how they are feeling. Completeing this questionnaire will help depressed mothers to get the help they need. Please ***Underline*** *the answer, which comes closest to how you have felt* ***in the past week.***

Here is a completed example:

I have felt happy

Yes, all the time

Yes most of the time

No, not very often

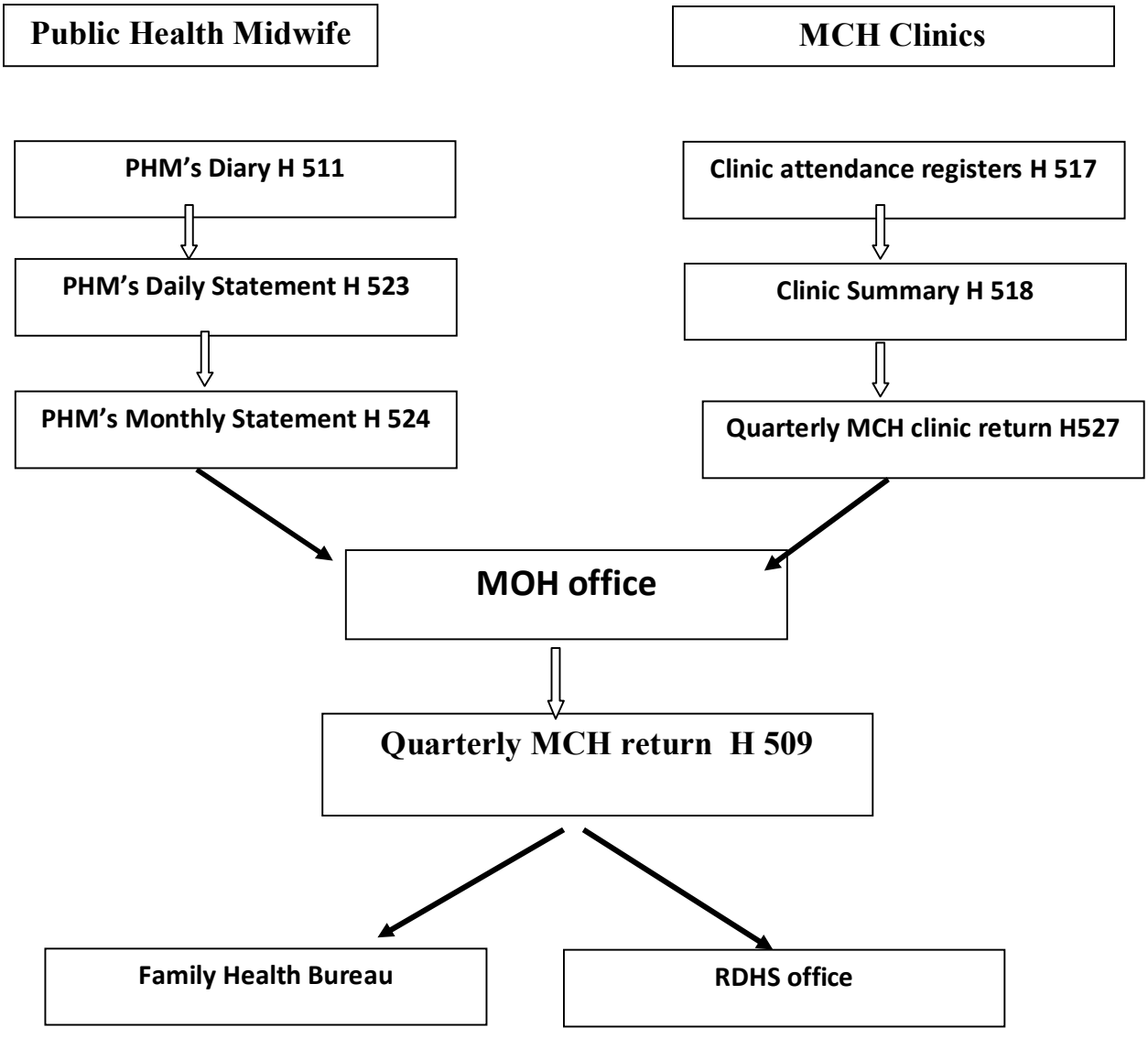
No, not at all

This would mean: "I have felt happy most of the time@ during the past week. Please complete the other questions in the same way.

	In the past week	**Coding Column**
1	I have been able to laugh and see the funny side of things:	
	As much as I always could	0
	Not quiet so much now	1
	Definitely not so much now	2
	Not at all	3
2.	I have looked forward with enjoyment to things:	
	As much as I ever did	0
	Rather less than I used to do	1
	Definitely less than I used to do	2
	Hardly at all	3
3.	I have blamed myself unnecessarily when things went wrong:	
	Yes, most of the time	3
	Yes, some of the time	2
	Not very often	1
	No, never	0
4.	I have been anxious or worried for no good reason:	
	No, not at all	0
	Hardly ever	1
	Yes, some times	2
	Yes, Very often	3
5.	I have felt scared or panicky for no good reason:	
	Yes, quite lot	3
	Yes, Some times	2
	No, not much	1
	No, not much at all	0
6.	Things have been getting on top of me	
	Yes, most of the time I haven't been able to cope at all	3
	Yes, sometimes I haven't been copying as well as usual	2
	No, most of the time I have coped quite well	1
	No, I have been copying as well as ever	0
7.	I have been so unhappy that I have had difficulty in sleeping:	
	Yes, most of the time	3
	Yes, sometimes	2
	Not very often	1
	No, not at all	0
8.	I have felt sad or miserable:	
	Yes, most of the time	3
	Yes, sometimes	2
	Not very often	1
	No, not at all	0
9.	I have been so unhappy that I have been crying:	
	Yes, most of the time	3
	Yes, quite often	2
	Only occasionally	1
	No, never	0
10.	The thought of harming myself has occurred to me:	
	Yes, quite often	3
	Sometimes	2
	Hardly ever	1
	Never	0
	Total score	

Chapter 26

MANAGEMENT INFORMATION SYSTEM OF MATERNAL CARE



For detailed description please refer the guideline on MCH/FP management information system published by FHB in 2004.

Chapter 27

SURVEILLANCE ON MATERNAL MORBIDITY AND MORTALITY

The maternal care program in Sri Lanka carried out maternal death surveillance and antenatal and postnatal morbidity surveillance at the field level. Surveillance system for severe maternal morbidities or 'near misses', will be introduced through the hospital system.

27.1 Surveillance on maternal morbidities

Guidelines on reporting antenatal and postnatal morbidities

Reporting of antenatal morbidities

Morbidities identified during antenatal period should be entered at the space given in the H512A and B by the field PHM / MOH at the time of the identification. Those identified morbid conditions should be noted in the diary **during the 1st postnatal visit** and should be entered in the daily statement on the same day. This reporting system is necessary to avoid repetition of reporting. The morbid condition should be entered correctly.

Reporting of postnatal morbidities

The identified morbidities during postnatal visits should be noted in the H 512 A, H512B and diary under the date of postnatal visit and should also be entered in the PHM's daily statement on the same day.

(When keeping notes in the PHM's diary, Mothers Number should be entered in the column for postnatal care and morbidities should be entered in the column for other issues. Mark AN with the antenatal morbid conditions and mark PN with the postnatal morbid conditions.)

Provision of accurate information to the national health information system is a responsibility of all relevant staff in the health services. Therefore, it is a main responsibility of the supervising staff including MOH and AMOH to facilitate PHM to identify morbidities using diagnosis cards and correct reporting. Supervising officers should encourage PHMM to maximize the reporting of antenatal and postnatal morbidities and to monitor the compliance on medical advice and relevant treatment regimes. They should also plan necessary interventions for identified issues.

Further, MOH should check the accuracy of the information before entering relevant information into the quarterly return of MCH (H509).

Definitions for antenatal and postnatal morbidities

Antenatal Morbidities

1. **Hypertension (Chronic or pregnancy induced)**

Availability of records with the diagnosis of hypertension or availability of a diagnosis card
Or blood pressure of 130/90 or more on at least three occasions (recorded by a medical officer) or Increase in diastolic pressure by 30mmHg or more comparing to early pregnancy measurement.

2. **Diabetes Mellitus (Chronic or gestational)**

Diagnosis of Diabetes Mellitus / Gestational Diabetes Mellitus by a medical officer or

Availability of a diagnosis card or availability of treatment records

3. **Heart Diseases**

Availability of records kept by a medical officer with the diagnosis of congenital or non-congenital heart disease or
Availability of a diagnosis card or
Past surgical history for heart disease but currently not on treatment
Registration at a cardiac clinic but currently not on any treatment
On monthly Penicillin prophylaxis for Rheumatic fever or Rheumatic heart disease
Diagnosed with Mitral valve Prolapse (MVP)
Diagnosed with any other cardiac disease (eg. Heart Failure, cardiomyopathy etc.)

4. **Anaemia**

Availability of a record of Hb <11g/dl during pregnancy.

5. **Antepartum Haemorrhage**

Availability of a diagnosis card for vaginal bleeding during pregnancy.

6. **Asthma**

Availability of a diagnosis card for asthma or

When mothers says that she is on long term drugs (tablets or inhalers) for asthma

7. **Malaria**

Availability of records on malarial infection during pregnancy, confirmed by a blood smear.

8. **Tuberculosis**

Availability of a diagnosis card for Tuberculosis during pregnancy or taking treatment during pregnancy for previously diagnosed Tuberculosis.

9. **Sexually Transmitted Infections (STI)**

Availability of a diagnosis card given by a medical officer for sexually Transmitted Infection (Syphilis, gonorrhea, Herpes simplex infections, Trichomonasis, Chamydia Infection, HIV/AIDS)

10. **Liver Disease**

Availability of a diagnosis cards or notes in the pregnancy record confirming Hepatitis or any other liver disease during pregnancy.

11. Mental disorders

Availability of a diagnosis card given by a Medical Officer confirming a mental disorder or

When mothers says that she is on long term drugs for mental disorder.

12. Epilepsy

Availability of a diagnosis card given by a Medical Officer confirming Epilepsy or

When mothers says that she is on long term drugs for epilepsy.

13. Urinary Tract Infections

Availability of records for treating UTI after confirmatory urine testing during pregnancy by a medical officer

14. Other disease Conditions

Note disease conditions other than the conditions mentioned above, that can affect pregnancy according to the available diagnosis cards.

Postnatal Morbidities

1. **Postpartum Haemorrhage**

Availability of a diagnosis card from hospital admission for abnormal or excessive vaginal bleeding during postnatal period

2. **Fever**

Body temperature of 37^0C (100^0F) or more during postnatal period

3. **Reproductive Tract Infections (Offensive vaginal Discharge)**

Availability of notes regarding the diagnosis and treatment of reproductive tract infections by a medical officer (sign and symptoms: Fever, lower abdominal pain associated with foul smelling vaginal discharge)

4. **Urinary Tract Infection**

Availability of notes regarding the diagnosis and treatment for a urinary tract infection during postnatal period by a medical officer after confirmatory urine testing

5. **Infected Episiotomy**

Purulent discharge from the episiotomy wound.

6. **Detached Episiotomy sutures**

Gaping of the Episiotomy wound edges

7. **Presence of Foreign bodies in the vagina**

When Foreign bodies (eg. Gauze swabs or packs) are found in the vaginal during vaginal examination

8. Infected Caesarean section wound

Presence of redness, swelling, warmth around the Caesarean section wound or
Pus or blood stained discharge form the wound or
Gaping of the wound

9. Deep Vein Thrombosis

Availability of notes regarding diagnosis and treatment for DVT by a medical officer.

10. Postpartum Mental Disorders

Availability of a notes regarding diagnosis of mental disorder during postpartum period

11. Cracked Nipples

Presence or cracks or fissures around the nipple

12. Breast Engorgement

Presence of following signs and symptoms:

Breast and areola gets edematous and painful.
Milk flowing from the breast has been stopped.
Enlarged blood vessels on the breast can be clearly visualized.
Fever may be present but usually does not continue beyond 24 hours.
Can be relieved by expressing milk

13. Breast Infections or Abscesses

Treatment taken for following signs and symptoms;

Pain in the Breast
Feeling warmth when touching the breast
Redness over the breast skin

14. Hypertension

Availability of a diagnosis made by a medical officer for high blood pressure during postnatal period

15. Heart failure

Availability of a diagnosis made by a medical officer for heart failure during postnatal period

16. Other disease conditions

Note disease conditions other than conditions mentioned above that mother has taken treatment according to the available diagnosis cards

17. Postnatal hospital admissions

Availability of a record on hospital admission during postnatal period or statement given by a mother regarding hospital admission during postnatal period due to maternal problem

26. 2 MATERNAL M ORTALITY SURVEILLANCE

Reduction of maternal mortality being identified as a national priority, Family Health Bureau (FHB), Ministry of Health has set up an island-wide surveillance system of maternal deaths occurring throughout the country since 1989.

Surveillance of maternal deaths involves the systematic collection, collation, analysis, interpretation & dissemination of all information related to maternal deaths.

1.0 Definitions

Maternal death -The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. *(Ninth version of the International Classification of Diseases)*

Maternal deaths are subdivided into two groups;

Direct maternal deaths -Deaths resulting from obstetric complications of the pregnant state (pregnancy, labour and puerperium), from interventions, omissions, incorrect treatment or from a chain of events resulting from any of the above.
Eg. Deaths due to septic abortions, post partum haemorrhage, pregnancy induced hypertension, amniotic fluid embolism and suicide due to post partum psychosis etc.

Indirect maternal deaths -Deaths resulting from previous existing disease or disease that developed during pregnancy and not due to direct obstetric causes, but aggravated by the physiologic effects of pregnancy are classified as
Eg. Deaths due to pregnancy complicated with medical disorders such as heart disease, anaemia, pneumonia, hepatic diseases etc.

Late maternal death -Death of a woman between 42 days and one year after termination of pregnancy, following direct or indirect maternal causes.
Eg: Death of a mother on the 90th day due to renal failure following eclampsia.

Pregnancy related death -Death of a woman while pregnant or within 42 days of termination of pregnancy irrespective of the cause of death.
This category includes all maternal deaths, incidental deaths and accidental deaths.
Eg: Deaths due to food poisoning during pregnancy, murder during pregnancy.

2.0 Notification of maternal deaths

Notification of maternal deaths has been made a legal requirement by issuing a gazette notification that all practitioners providing care to women in the country, both at institutional and field levels, are legally bound to notify maternal death events to Family Health Bureau –the focal point in maternal death surveillance.

Notification involves informing of all deaths which fulfill the notification criteria to the relevant authorities, in a uniform manner and without delay for necessary action.

2.1 Notification criteria

- All deaths *(irrespective of cause)* of women in reproductive age group (15 – 49 years) during the pregnancy period and until one year after termination of pregnancy

This includes; all confirmed maternal deaths, late maternal deaths, pregnancy related deaths and other reproductive age group female deaths. Such a wider notification range will ensure that all probable maternal deaths are captured by the surveillance system.

2.2 Notification procedure

The notification procedure will be described under sections on maternal death surveillance at field level, maternal death surveillance at institutional level and maternal death surveillance at estate level respectively.

3.0 Maternal Death Surveillance at Institutional Level

- Once a maternal death occurs in an institution (government or private hospital), the Head of the Institution should take the custody of the bed head ticket (BHT) and all the documentation of management details of the deceased mother. All the pages should be numbered and the original document should be made available for relevant officers/review meetings for investigation procedure. The BHT should not be reproduced. BHT should not be taken out of the office of the Head of the Institution and extraction of information from the BHT should be done within the office premises only.
- It is compulsory to conduct a post mortem in all cases of maternal deaths as per the circular issued by the Secretary to the Ministry of Justice and Law reforms dated 2008.10.02 to all coroners and letter issued by director general of health services (DGHS) on 2011.01.12.
- A copy of the post mortem report should be issued by JMO to DGHS, Director – FHB and Head of the hospital where maternal death occurred

3.1 Notification procedure of maternal deaths to be followed at institutional level

- Immediately after the occurrence of a death which fulfils above notification criteria (2.1) the relevant staff should report it to the head of the institution.
- JMO should also notify such deaths to the head of the institution after the post mortem.
- Coroners should also be requested to notify such deaths to the RDHS and the head of the institution after inquiry into sudden deaths.

- The head of the institution will then notify the death within 24 hours by telephone, telegram, fax or email to the following officers;
  - Director – MCH (Family Health Bureau)
  - PDHS and RDHS (where the institution located)
  - PDHS and RDHS (deceased residence)
  - MOH (deceased residence)
  - Head/s of the previously managed institution/s
- The notification of these deaths should be done according to the format H 677 C (page).
- Whenever the death of such a mother transferred from another institution occurs, the receiving institution should notify the head of the previously managed institution of the death.

3.2 Institutional investigation procedure of a maternal death (Government and private hospitals)

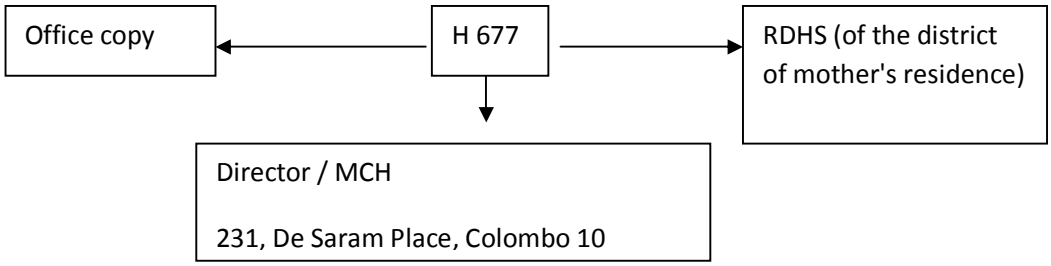
- Separate institutional investigations should be performed by each institution involved in the management of the deceased mother.
- The investigation should be conducted within 14 days of occurrence of a maternal death as this would enable to identify precisely the circumstances that led to the death with fresh information. The circumstances of the death should be discussed in detail with the intention of identifying preventive measures.
- The institutional investigation is the responsibility of the Head of the Institution.
- Investigation should be carried out as a team which should comprise of the following officers;

  - Head of the Institution (Director/MS/DMO/MO-IC) as the team leader
  - Consultant Obstetrician and Gynaecologist or the relevant Specialist of the hospital unit in which the death occurred (acting consultant in his/her absence) and all other relevant consultants who managed the mother (Physician, Surgeon, Anaesthetist, Psychiatrist etc)
  - Medical officer/s who attended the deceased mother (DMO, MO/IC, senior house officer, house officer etc.)
  - Judicial Medical Officer
  - Medical officer – blood bank – when relevant
  - Grade I Nursing Officer /Nursing Officer In Charge of the ward/ labour room - when relevant
  - Head of the Institution of hospitals where the patient was managed before transfer
  - Medical Officers Maternal and Child Health (of the districts where the mother is resident and where the hospital is situated)
  - Medical Officer of Health from the mother's area of residence
  - Public Health Midwife from the mother's area of residence

- The institutional investigation should be coordinated by the medical officer (preventive health) on behalf of the head of the institution.
- The Head of the Institution is responsible for the implementation of the corrective actions within the hospital without delay as decided at the institutional review.

3.3 Reporting the institutional investigation

- The information obtained during the investigation should be entered in form H 677 in triplicate. A copy of the latest version of H677 should be obtained from the MOMCH or downloaded from the FHB website: www.familyhealth.gov.lk/downloads.php
- Consultant Obstetrician and Gynaecologist or the relevant Specialist of the hospital unit in which the death occurred and Head of the Institution should ensure the completeness of the format.
- The completed format (H 677) should be sent to the following institutions within 14 days of occurrence of the maternal death.



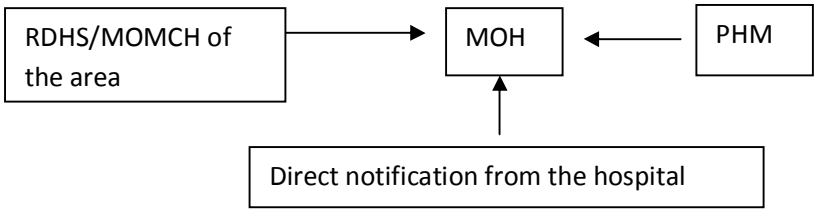
- Head of the institution should also ensure that these deaths are reported through H830 (Monthly Report on Maternal Statistics) and Quarterly Indoor Morbidity and Mortality Returns (MMR) sent to the relevant sectors. Also he/she should ensure that pregnancy and/or childbirth should be mentioned as an underlying cause of death when the death declaration is given.

4.0 Maternal Death Surveillance at Field Level

4.1 Notification procedure of maternal deaths to be followed at field level

When a notifiable death occurs in her area, the area PHM should immediately notify it to the MOH. Notification by the PHMM can be considered as the single most important step in maternal death surveillance as this is the means which could have the highest notification rate.

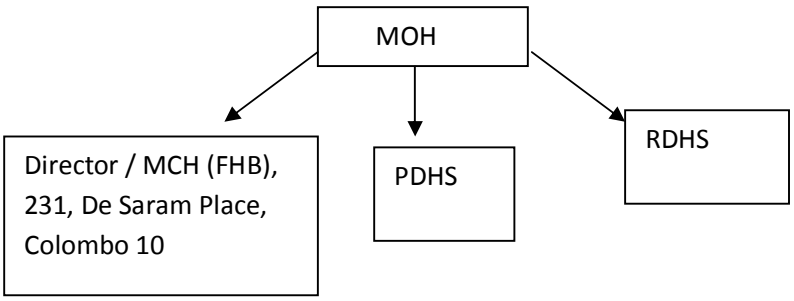
The MOH may receive a maternal death notification directly from the head of the institution at which the death occurred or from the RDHS/MOMCH of the district to whom the death was notified.



The MOH should inform the relevant authorities that it is compulsory to conduct a post mortem in all cases of maternal deaths as per the circular issued by the Secretary to the Ministry of Justice and Law reforms dated 2008.10.02 to all coroners and letter issued by director general of health services (DGHS) on 2011.01.12.
The MOH should obtain post-mortem details from the JMO. If a copy of the post-mortem necessary, the MOH should inform the Director – MCH.

All the relevant records (H512A, H512 B) should be taken over & kept safely in the MOH office till the investigations & review meetings are over.

MOH should notify such a death to the following places within 24 hours by telephone, telegram, fax or email using the format H 677 C (See page 190) to the FHB, PDHS and RDHS.



- The telegram or telephone message should be confirmed by a letter containing the following information
  (Name of the deceased mother, address, PHM area, MOH area, RDHS area, date of death, place of death, tentative cause of death, name and designation of the informant, date informed) (See page - 190)
- In case of the death of a mother who is temporarily resident in a MOH area, the area MOH should notify the death to the MOH of the area from where the mother came from (& where she was registered as an eligible female)
- In cases of deaths within one week of discharge from a hospital, the MOH should notify the death to head/s of the previously managed institution/s
- MOH should also ensure that all deaths are reported through H 509 (Quarterly Maternal and Child Health Return).

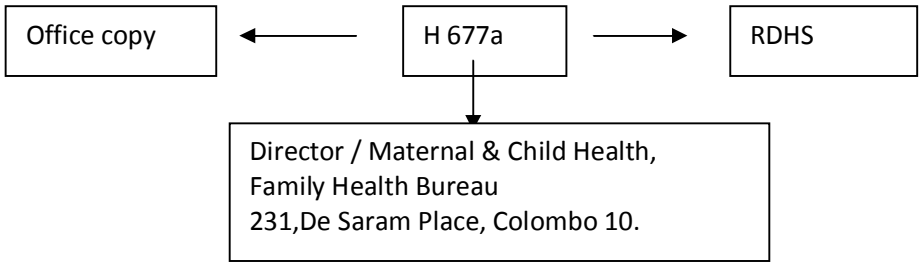
4.2 Field investigation procedure for maternal deaths

- MOH (of the area where the mother is registered in the eligible family register) is the responsible officer for the field investigation. In case of an absence of the relevant MOH, the acting MOH/AMOOH or MO-MCH should take the responsibility of carrying out the field investigation.
- Investigation should be done as a team comprising of MO-MCH, MOH, all AMOOH, all PHNS, all SPHM and PHM of the area. MO-MCH and MOH should jointly investigate the maternal death.
-

- In case of the death of a mother who is temporarily resident in another MOH area, the MOH of that area should also investigate the case as a team comprising of MO-MCH, MOH, all AMOOH, all PHNS, all SPHM and PHM of the area and send that report to the MOH of the area of mother's residence (i.e. where the mother was registered in the eligible couple register) who will then prepare the final investigation report.
- Investigation should commence as early as possible and should be completed within fourteen (14) days of occurrence of the maternal death.
- The team should visit the office of the PHM and examine all the relevant documents starting from the eligible family register, pregnant mother's register, pregnancy records (H512B), family planning field records, diary, advance programme etc.
- The care received by the mother (antenatal, postnatal) prior to the admission to the hospital should be assessed.
- The family members should be interviewed by the investigation team in order to obtain relevant information.
- In the case of a hospital death, MOH should participate as a member in the hospital investigation team. If the institutional investigation is delayed, the MOH should visit the hospital and obtain relevant information from the hospital (from health care staff and the BHT) with permission of the head of the institution, which information should be entered in H 677a.
- After the maternal death investigation the MOH should implement the necessary corrective actions at field level, and the implementation of these should be discussed at the next monthly conference.
- All the supervisory staff (MOH, AMOH, PHNS, SPHM) should follow up the work of the area PHM until the deficiencies (if any) at field level are rectified.
- If the maternal death investigation has done by the previous MOH, the present MOH should do a fresh field visit to the PHM office and the home of the deceased mother and be thorough with the information before the DMMR and NMMR.

4.3 Reporting the field investigation

- The information obtained during the investigation should be entered in the form H 677a in triplicate by the MOH. A copy of the latest version of H677a should be obtained from the MOMCH or downloaded from the FHB website: www.familyhealth.gov.lk/downloads.php
- On completion, the report should be sent to the following institutions.



- For deaths in which the delivery has taken place at home or outside hospital (intra partum / post partum home death) MOH should fill the H 677 format (institutional format) which

- includes the details regarding the delivery. For the field investigation the same procedure should be adhered (as given in section 3.2) and H 677a format should be filled by the MOH.

4.4 Safety of maternal death documentation

- The MOH is responsible for the safe custody of the all the documentation related to all maternal deaths
- MOH should hand over all the documents related to maternal death investigations and reviews to the next MOH appointed on his/her transfer or retirement.

5.0 Maternal death surveillance at estate level (Field)

5.1 Notification procedure for estate maternal deaths

If a notifiable death occurs in a mother resident in an estate, the Superintendent of Estate should immediately notify the maternal death to the PDHS, RDHS, MOH and the Regional Health

Manager of the Plantation Trust. MOH will in turn notify about the death to the Director (Maternal & Child Health) as described earlier (refer section 3.1)

5.2 Field investigation procedure for estate maternal deaths

MOH and MO-MCH should jointly investigate these deaths with the participation of the team including the PHNS, SPHM, area PHM and the Regional Health Manager. The team should visit the residence of the mother and proceed with the field investigation as detailed in section 3.2.

5.3 Reporting the field investigation of an estate maternal death

Same procedure as in as in section 3.3 should be followed.

6.0 District and National Maternal Mortality Reviews (DMMR / NMMR)

At the end of each half year the MOMCH should prepare a summary of maternal deaths notified during the half year and also annually (at the end of the year) according to the format H 677E and send these to the Director (Maternal and Child Health) and PDHS.

Director (maternal and Child Health) will also prepare a feedback summary of the deaths notified from each district and institution to the Family Health Bureau at the end of each quarter and annually according to the format H 677F

Each reported death should be discussed at these reviews with the aim of identifying circumstances of death in order to prevent such deaths in future.

"Format A" by the MOH and "Format D" by the Institution should be used for analysis and a basis for presentation of each death at DMMR and NMMR. MOMCH should send these formats to the relevant institutions and the MOOH in advance to complete them and present at the district review. The presentation should include details of the format A / D and any other relevant information. Presenters

are encouraged to be creative and innovative in their presentations. It is important to include positive steps taken out of lessons learnt following the relevant maternal death.

6.1 District Maternal Mortality Reviews (DMMR)

District Maternal Mortality Reviews are an important aspect of maternal mortality surveillance since it provides a forum to discuss and learn lessons out of maternal deaths at the district level. It also gives an opportunity to identify service deficiencies and to formulate preventive strategies to further reduce maternal deaths taking local contexts of the district in to consideration. Data gaps with regard to each death could be filled at DMMRs.

Two half yearly District Reviews should be organized by MO-MCH on behalf of RDHS according to the following schedule.

First half yearly review	-2nd week of July
Second half yearly review	-2nd week of January (following year)

District Maternal Mortality Review Team should comprise of the following officers

PDHS/ RDHS (chairperson)
Provincial or District Consultant Community Physician/s
All Head/s of the Institution/s and (where labour rooms are available)
All Consultant obstetricians Gynecologists
MO-MCH
All AMOOH, All AMOOH, all PHNS, SPHM, relevant area PHMM
Judicial Medical Officers
Senior registrars / SHOO / MOO -–who were involved in the management of the deceased

The participation of all relevant officers is compulsory at DMMR.

At the district review all the deaths reported for that half year should be taken for discussion.

If a mother had been transferred for ICU care and died subsequently, the intermediate institution from where the patient was transferred should present the case using Format D and the end station which provided ICU care should present a summary.

The circumstances which led to the death should be identified at the district review using three delay model.

The preventive strategies should be generated to improve the availability, accessibility, utilization & quality of field health care services and essential obstetric services and steps should be taken to initiate the preventive activities which could be implemented at the district level.

At the end of the review the MOMCH should fill the cage G of Format A and cage I of Format D (deficiencies identified and action to be taken/ already taken).

Then the completed formats A and D should be sent to the following health authorities by the MOMCH.

PDHS
RDHS
Director (Maternal and Child Health)

Minutes of the district review should be prepared by the MOMCH and copies sent to the PDHS, Director (MCH) and the relevant MOOH / institutions. These minutes should be taken for discussion at the next district review of maternal deaths.

5.2 National Maternal Mortality Review (NMMR)

Annual reviews are conducted on a district basis to review all the deaths which occurred in a particular district in the previous year with the participation of experts from the national level.

Director/maternal and Child Health, Department of Health in collaboration with the Provincial Director of Health Services will organize the annual review of maternal deaths in a district with the participation of representatives from professional colleges including Sri Lanka College of Obstetricians & Gynecologists, College of Anesthetists, College of Physicians, Sri Lanka College of Community Physicians.

DGHS or in his absence the PDHS will chair this meeting. In the absence of the DGHS a ministry official nominated by the DGHS should participate at the NMMR to represent the DGHS.

The participation of following categories of health care teams is mandatory at the NMMR;

PDHS
RDHS and Deputy RDHS
Provincial and District Consultant Community Physician/s
All Head/s of the Institution/s where labour rooms are available)
All consultant Obstetricians and Gynaecologists and other relevant consultants
MO-MCH
All MOOH, all AMOOH, all PHNS, SPHM, relevant area PHMM
Judicial Medical Officers
Senior registrars / SHOO / MOO –who were involved in the management of the deceased

The RDHS, MOMCH, RSPHNO, all Consultant obstetrician and Gynaecologists, MOOH and AMOOH, all heads of the institutions and the relevant consultants (Consultant obstetrician Anaesthetist, Consultant physician Consultant JMO) of the units where maternal deaths have occurred, all the DMOO / MOO-IC of the district hospitals and peripheral units (whether or not maternal deaths occurred in their institutions) should participate at the annual review.

All the reported deaths for the year are taken for discussion by an expert panel consisting of the DGHS (or a representative of the DGHS), PDHS, Director/Maternal & Child Health, other relevant officials from the Ministry of Health, representatives of the SLCOG, SLCOA and other professional bodies.

The relevant presentation of the maternal death should be done by the MOH (field part) and Consultant obstetrician and Gynaecologists or the relevant Specialist (institutional part). It is the responsibility of the head of the institution and the specialist of the unit where mother was managed to ensure that a detailed presentation is made at the NMMR.

At the annual review all the deaths will be discussed according to the three delay model.

Following the review minutes will be prepared by Director (MCH) and sent to the relevant district and provincial officers. The RDHS will then duplicate these minutes and send the copies to the relevant curative institutions and MOOH.

Final decisions regarding the type of death, preventability, preventive measures that should be taken at the national level will be decided during the annual review by the panel of experts.

5.3 Follow up action to NMMR

Following the NMMR the MOMCH should organize a meeting for all MOOH/ heads of institutions and other relevant officers to implement the corrective actions decided at the NMMR. This meeting will be chaired by the RDHS.
Head of the institution should call for a separate meeting at the institutional level to discuss these minutes with the relevant consultants/ SHOO/ blood bank and other relevant staff in order to implement these activities.

MOMCH should report the progress of these activities after 3 months to the DGHS/ PDHS/ RDHS/ DMCH.
Director (MCH) should carry out regular discussions with the DGHS, relevant DDGG and other officials regarding issues which need departmental intervention.
When all the NMMR meetings are over, the national statistics on maternal mortality will be issued by the Family Health Bureau before the end of the next year.
At the annual review of the next year the MO/MCH should present the status of implementation of preventive measures suggested at the previous year's annual review

H 677 – C

Notification Form for Maternal Death Surveillance

Date of death	:	……...
Place of Death	:	……...
Name of the deceased mother	:	……...
Age	:	……...
Parity	:	……...
Home address	:	……...
		……...
MOH area (of mother's residence)(if known)	:	……...
DPDHS area (of mother's residence)	:	……...
Hospital deaths – Place transferred from (if relevant)		……...
Cause of death (tentative or confirmed)	:	……...
Name & the designation of the informant	:	……...
		……...
Date informed	:	……...

This form should be filled by head of the institution/ medical officer of health or any authorized officer on behalf of them and should be posted/ faxed/ emailed to - Director (Maternal and Child Health), Family Health Bureau, No. 231, De Saram Place,Colombo 10.Telephone – 011 2692745 Fax – 011 2681310 email maternaldeathfhb@yahoo.com

Chapter 28

SUPERVISION OF MATERNAL CARE SERVICES

28.1 Supervision on Antenatal care

Part I - PHM Office Supervision

Name of the supervising officer :- ……
Designation of the supervising officer:- ……
Date of supervision :- ……
Time started supervision :- …… Time ended :- ……
MOH area :- ……
PHM area :- ……
Name of the PHM :- ……
Objective of the supervision :- ……

Was the PHM informed regarding the supervision: Yes / No

1. **Basic information:**

   a. Extent of the area (sq. km.) :……
   b. Population :……
   c. Date of first appointment :……
   d. Date of appointment to this area :……
   e. Duration of service as a PHM :……
   f. Whether PHM was provided with a quarters in her area : Yes / No
      i. If provided, is she living in the quarters? Yes / No
      ii. If not, is she living in the area? Yes / No
   g. If she is not living in the area, distance (in km.) to the working area from her residence : ……
   h. How long will it take to reach the area (in hours): ……
   i. Transport facilities:
      i. Is the PHM provided with transport facilities: Yes / No (Bicycle/ Moped)
      ii. Does she use it : Yes / No
      iii. If not, reasons for not using the transport facility:
      ……
      ……
   j. Is the PHM in complete uniform? : Yes / No

2. **Information on antenatal care :**
   Provincial Birth Rate :……
   Estimated no. of births for PHM area :……

1. Maintenance of graphs pertaining to antenatal care:

Graphs (bar charts) to elicit achievements Performance on following indicators in previous two years and quarterly in current year.	Yes	No	Last quarter %	Comments
i. Antenatal care % of pregnant mothers registered (of estimated births X 1.1)				
ii. % of pregnant mothers registered before 8 weeks (of total pregnant mothers registered)				
iii. % of pregnant mothers registered after 12 weeks (of total pregnant mothers registered)				
iv. % of mothers with BMI < 18.5 before 12 weeks (of total pregnant mothers registered before 12 weeks)				

2. Assessment of antenatal care:

No	Indicator	No.	%
1.	No. of pregnant mothers under care at any given time (50% of estimated births)		
2.	No. of pregnant mothers under care according to H 524 (of 50% estimated births)		
3.	No. of pregnant mothers under care according to the Eligible family register (of 50% estimated births)		
4.	No. of mothers under care according to the Pregnant mothers register (of 50% estimated births)		
5.	No. of mothers according to the EDD register (of 50% of estimated births)		
6.	Number of pregnant mothers under care according to H 512B (of 50% estimated births)		
7.	No. of primi mothers (of pregnant mothers under care)		
8.	Of primi mothers under care, number registered in the eligible family register, before becoming pregnant (of primi mothers under care)		
9.	No. of pregnant mothers registered before 8 weeks (of pregnant mothers under care)		
10.	No. of pregnant mothers registered between 8-12 weeks (of pregnant mothers under care)		
11.	No. of pregnant mothers registered after12 weeks (of pregnant mothers under care)		

12.	No. of pregnant mothers less than 20 years of age (of pregnant mothers under care)		
13.	No. of mothers with high risk conditions (of pregnant mothers under care)		
14.	No. of mothers referred to specialized clinics (of high risk pregnant mothers under care)		
15.	No. of mothers followed up after referring to specialized clinics (of pregnant mothers referred to specialized clinics)		
16.	No. of mothers with P5 and above registered (of pregnant mothers under care)		
17.	No. mothers protected against Rubella before pregnancy (of pregnant mothers under care)		

5. Home visits received by antenatal mothers:

*No. of mothers delivered during last 1 or 2 quarters: - ……

*Whether to use last quarter or last 2 quarters for the calculation should be decided considering the number of mothers delivered

No	Indicator	No.	%
1.	No. who received antenatal home visits once a month from mothers who delivered during last 1 or 2 quarters (of mothers delivered during last 1 or 2 quarters)		
2.	No. of risk mothers needed extra domiciliary care (of mothers delivered during last 1 or 2 quarters)		
3.	Of above risk mothers, No. received extra home visits		
4.	No. of mothers with antenatal morbidities (of mothers delivered during last two quarters)		
5.	No. of mothers protected with tetanus toxoid (of mothers delivered during last two quarters)		

6. Compare relevant records to assess the antenatal home visits and morbidity reporting during pregnancy by PHM

(During the last month of the last quarter according to post natal cards)

Quarter ……..……. Month …….

	Indicator	H 524	H 523	Diary	H 512B
1.	No. of antenatal home visits done during the last month of last quarter (total of new & subsequent visits)				
2.	No. of mothers with antenatal morbidities reported				

7. Check whether the mothers from outside the area are included in the registers

*specific time period (Quarters): -…….

	Indicator	H 524	Pregnant mothers register	H 512 B
1.	No. of mothers who had come to the area from outside during the *last quarter			
2.	No. received once a month home visit			

*If there were no mothers who came from outside the PHM area during the last quarter, extend the time duration up to a level where there were mothers who left the area' This time duration should be documented above.

8. Maintenance of a register for pregnant mothers left area: Yes/ No

No. of mothers left area during last quarter according to the register: ……..
Mechanisms available to inform the MOH about it : Yes/ No
Comments:- …….
No. indicated in the monthly statements (last quarter) :- ……..

Part II - Antenatal care field supervision

Randomly select five H 512 B cards (preferably completing 28 weeks) and make home visits. Compare the information with H 512 A.

	House 1	House 2	House 3	House 4	House 5
Registration No. in eligible families register					
POA at the time of registration					
POA at the time of supervision					
Parity					

No.	Indicator	Yes/ No	Yes/ No	Yes/ No	Yes/ No	Yes/ No	comment
Ante natal care:							
1.	Registered before 8 weeks						
Home visits:							
2.	First home visit done before 12 Weeks						
	Monthly home visits done						
	Additional home visit done for mothers with risk a factor / special problems (if any)						
3.	Breast examination done at home by PHM						

4.	Fundal height measured and recorded during last visit						
5.	Fetal heart sounds checked & recorded during last visit						
Assessing mother's knowledge							
6.	Mother has sufficient knowledge on nutrition						
7.	Mother is aware about the expected date of delivery						
8.	Mother has knowledge on signs of labour						
9.	Mother uses **iron tablets** correctly						
10.	Mother stores iron tablets correctly						
11.	Mother has a good knowledge on facilitative and inhibitory factors for iron absorption						
12.	Mother and family members are aware of **danger signs** of pregnancy (Refer attachment)						
13.	Mother is aware of feeling fetal movements						
14.	Mother documents fetal movements						
15.	Mother is prepared with necessary **items for hospitalization** for delivery						
16.	Mother has knowledge on initiation of **breast feeding** within first half an hour of delivery						
17.	Mothers knows the importance on exclusive breast feeding						
18.	Mother is knowledgeable on **duration of exclusive breast feeding**						
19.	Mother is knowledgeable on ECCD						
20.	Husband has participated to the clinic with the mother during last visit						
21.	Place of delivery and related issues are decided following discussion with the mother						
22.	Mother is aware on all 5 modern family planning methods						
Risk mothers							
23.	PHM has identified the risk factors of the mother correctly						
24	High risk mothers are correctly labeled on pregnancy records						

25.	Mother was aware on the above mentioned risk factors						
26.	Husband and family members are aware of the risk factors of the mother						
27.	Mother has attended clinic which she has been referred to						

9. PHM's response for the supervision:

……
……
……

10. Problems identified by the PHM in providing antenatal care in the field:

……
……

11. PHM's suggestions to provide an even better service:

……
……

12. Details of last supervision on antenatal care provision:

Date of supervision : ……..……
Designation of the supervising officer : ……..……
Recommendations are implemented : Yes/No
Note on recommendations that were not implemented: ……..

13. Recommendations on today's supervision:

Strong points	Weak points
1……	1……
2……..……	2……..……
3. ……..…	3. ……..…
4. ……..…	4. ……..…
5 ……..……	5 ……..……

Next date for supervision : …….

Action plan to improve antenatal care based on weak points identified:

Problems identified	Underlying reasons	Proposed solutions	Responsibility	Time frame

Date ..... Signature of supervising officer ……

Designation

……..

28.2 Supervision on Post natal care

Part I - PHM Office Supervision

Name & designation of the supervising officer/s:- ……..…….

Date of supervision :-

……..……

Time started supervision :- ……..… Time ended:- ……
MOH area :- ……..……

PHM area :- ……..……

Name of the PHM :- ……..……

Objective of the supervision :- ……..……
Was the PHM informed regarding the supervision: Yes / No

1. Basic information :

k. Extent of the area (sq. km.) :……
l. Population :……
m. Date of first appointment :……
n. Date of appointment to this area :……
o. Duration of service as a PHM ;……
p. Whether PHM was provided with a quarters in her area : Yes / No
    i. If provided, is she living in the quarters? : Yes / No
    ii. If not, is she living in the area? : Yes / No
q. If she is not living in the area, distance (in km.) to the working area from her residence: ……
   How long will it take to reach the area (in hours) :……..……
r. Transport facilities:
    i. Is the PHM provided with transport facilities: Yes/ No (Bicycle/ Moped)
    ii. Does she use it : Yes/ No
    iii. If not, reasons for not using the transport facility:
    ……
    ……
s. Is the PHM in complete uniform? Yes / No

2. Information on postnatal care:

Provincial Birth Rate :-……..

Estimated births for PHM area :-……..……..

No. of postnatal mothers under care :-……..……

3. Maintenance of graphs on postnatal care:
(Annually over last 2 years and quarterly for this year)

No.	Indicator	Yes	No	Value for the last quarter	Comments
1.	% of deliveries reported (of estimated births)				
2.	Low Birth Weight Rate reported (of total live births reported)				
3.	% of mothers received postpartum care 1st visits within 1-10days (of estimated births)				
4.	% of mothers received postpartum care visit within 11 – 28 days (of estimated births)				
5.	% of mothers received postpartum care around 42 days (of deliveries registered)				

4. Comparison of records and registers on delivery reporting and postpartum care including morbidity reporting (Within a specified time period):

Quarter or Month: - ……

	Diary	Daily Statement	Monthly Statement	Eligible Couple Registry	Pregnancy Register	EDD Register	H512B
No. of post natal mothers under care							
No. of births registered							
No. received new home visits in first 10 days							
No. of mothers reported with postnatal morbidities							

5. Postnatal care coverage:

Assessment of postpartum care of permanently residing mothers during last quarter (According to Pregnancy records)

No.	Indicator	Total	%
1.	No. of mothers had 1 postpartum visit within first 5 days (From all mothers delivered in the last quarter)		
2.	No. of mothers had 1 postpartum visit within first 10 days (From all mothers delivered in the last quarter)		
3.	No. of mothers had 2 postpartum visit within first 10 days (From all mothers delivered in the last quarter)		
4.	No. of mothers had 1 postpartum visit within 11 to 28 days (From all mothers delivered in the last quarter)		
5.	No. of mothers had a postpartum visit around 42 days (From all mothers delivered in the last quarter & completed 42days)		
6.	No. of mothers received Vitamin A mega dose (From reported births) - From the hospital		
	- From the PHM		
7.	No. of neonates who received breast milk within 30 minutes of birth, according to CHDR B portion		
8.	No. of mothers with post natal complications From randomly selected cards of mothers completed 45 days postpartum; (No. of cards - ……)		

6. Postpartum care received by mothers who came from outside during last quarter:

Indicator	No.	%
No. of outside mothers delivered during last quarter		
% received 1 home visit within 1st 10 days		
% received 2 home visits within 1st 10 days		
% received home visits between 11- 28th day		
% received home visits around 42 days		

7. Postpartum care received by mothers delivered at home during last 4 quarters:

No. of home deliveries		% received 3 home visits within 1st 10 days	% received home visit between 11-28th day	% received home visits around 42 days
Trained				
Untrained				

8. Interventions carried out at PHM level for following postpartum morbidities:

Morbidity reported	No. reported during last year	Intervention / action taken
Breast problems		
Postnatal psychosis		
Infected episiotomy		
Any other common morbidity …… (specify)		

9. Maintenance of records and registers on delivery reporting and postpartum care including morbidity reporting:

No.	Records / registers	Maintenance		Comments
		Satisfactory	Unsatisfactory	
1	Diary			
2	Daily statement			
3	Monthly statement			
4	Pregnant mothers register			
5	EDD register			
6	Eligible family register			
7	Pregnancy records			
8	BI register			

Part II – Field supervision:

Select randomly five 512 B cards completed 3 months postpartum and visit the household:

		House 1	House 2	House 3	House 4	House 5
	El/F registration No.					
	Pregnancy registration No.					
	Parity					
	Date of arrival at home					
No		Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
1	Post partum care home visits • Twice between first 10 days (once in first 5 days and once between 5-10days)					
	• 1st visit within first five days					
	• Once between 11- 28 days					
	• Once close to 42 days					
2	PHM has examined the mother					
3	Has identified the risk factors if any					
4	Mother was educated on risk conditions					
5	Family members were aware of the behavioral changes of the mother during the early postpartum period					
6	Family members are knowledgeable regarding post natal complications					
7	Mother was adequately educated on maternal nutrition					
8	Family members are adequately educated on maternal nutrition					
9	Has identified danger signs of the infant (if any)					
10	Does mother have the knowledge to identify danger signs					
11	Mothers was aware on exclusive breast feeding					
12	Family members are aware on exclusive breast feeding					
13	Mother was aware on correct technique of breast feeding					

14	Observe the session of breast feeding - Attachment is correct					
	- Positioning is correct					
15	Mother has correct knowledge on expression of breast milk - Cup feeding					
	- Storing					
15	PHM has examined the newborn					
16.	Counseled on use of FP method					
17	Using a modern FP method					
18	Mother has received family support during postnatal period					

10. PHM's response for the supervision:

……..……

……..……

11. Problems identified by the PHM in providing the postnatal care:

……

……

12. PHM's suggestions to improve her postnatal care service :

……

……

13. Details on previous supervision on child care:

Date of supervision : ……..

Designation of the supervising officer : ……..

Recommendations are implemented : Yes/No

Note on recommendations that were not implemented:

……

……

Recommendations on current supervision:

Strong points	Weak points
1……	1……
2……..……	2……..……
3. ……..…	3. ……..…
4. ……..……..…	4. ……..……..…
5 ……..……	5 ……..……

Next date of supervision if necessary:- ……

14. Develop an action plan with the PHM to overcome the weak points:

Problems identified	Underlying reasons	Proposed solutions	Responsibility	Time frame

Date: …….. Signature of supervising officer ……..……..

Name and designation ……..

28.3 Supervision of a Poly clinic

Name of the supervising officer :-
……..
Designation :-
……..
Date of supervision :-
……..
Time started supervision :-…… Time ended:-
……
Objective of the supervision :-
……..
Was the PHM informed regarding the supervision:- Yes / No
MOH area :- ……
Name of the clinic :- ……
Frequency of the clinic :- ……
No. of PHM areas covered by the clinic:- ……
Population covered by the clinic :- ……
No. of PHMM attended the clinic: …… ……

No. of clients for the clinic from each PHM area:

Target group	PHM Area 1	PHM Area 2	PHM Area 3	PHM Area 4
No. of antenatal mothers				
No. of H 512 B cards brought to the clinic				
No. of infants				
No. of preschoolers				
No. CHDR B portions brought to the clinic				
No. of family planning clients				

Officer conduct the clinic: MOH/AMOH/MO/RMO/AMO

Other staff category available in the clinic on the supervision day: RSPHNO/PHNS/SPHM

1. **Clinic environment:**
   a. Cleanliness of the clinic : Satisfactory ☐ Not satisfactory ☐
   b. Ventilation : Adequate ☐ Not adequate ☐
   c. Electricity : Available ☐ Not available ☐
   d. Seating facilities : Adequate ☐ Not adequate ☐
   e. Toilet facilities : Available ☐ Not available ☐
   f. Accessibility : Satisfactory ☐ Not satisfactory ☐
   g. Adequate Water supply : Available ☐ Not available ☐

2. Clinic organization:

		Yes	No	Comments
1	Clinic duty roster is available			
2	Clinic preparation done on previous day			
3	Health education materials displayed on the wall			
4	Clinic is organized according to 5 'S' concept			
5	Place is organized for different clinic activities			
6	Numbers given to all clients at registration			
7	Clinic sessions are organized for different target groups (eg. ANC- 8.30am – 11.00, Immunization 11.00 am- 12.30pm, FPC 1.00pm – 3.30 pm)			
8	Clean linen and a clean examination bed is available			
9	Health education is provided according to a plan			
10	Reading materials available for the use of clients			
11	Waste management is satisfactory			

3. Use of AD syringes:

a. Use AD syringes for all immunizations Yes ☐ No ☐
b. Use safety boxes to collect used syringes Yes ☐ No ☐
c. Safe technique is used for disposal of used syringes Yes ☐ No ☐

4. Sterilization procedure (if any):

a. Sterilization chart is displayed in the clinic Yes ☐ No ☐
c. It is supervised and signed by a senior officer Yes ☐ No ☐
b. PHMM is capable of sterilizing the equipment on time Yes ☐ No ☐
d. Handle sterilized equipment with Cheatle forcep Yes ☐ No ☐

5. Assist MOH in examining the mother:

a. Inform the mother that she is going to be examined Yes ☐ No ☐
b. Provide a brief history to the MOH Yes ☐ No ☐
c. Assist mother in positioning on the bed Yes ☐ No ☐
d. Check the mother's understandability on information provided by MOH Yes ☐ No ☐
e. Inform mother on the next clinic date Yes ☐ No ☐

f. Help mother on getting up from the examination bed Yes ☐ No ☐

g. Explain mother regarding referral to specialist care Yes ☐ No ☐

6. **Providing micronutrients and anti helminthic drugs:**

a. Drugs are packed and ready for distribution among mothers Yes ☐ No ☐

b. Explain the mother on how to use drugs Yes ☐ No ☐

c. Explain the mother on how to store them Yes ☐ No ☐

d. Cross check from the mother whether she takes them correctly Yes ☐ No ☐

7. Procedure of Urine testing:

		Yes	No	Remarks
1	Separate place is allocated for this activity			
2	Availability of equipment and reagents or strips			
	- Urine test strips			
	- Test tubes			
	- Test tube holder			
	- Test tube rack			
	- Spirit lamp			
	- Container to empty test tubes			
	- Benedict's solution			
	- Acetic acid			
	- Methyl spirit			
3	Technique of testing **For protein**:			
	- Fill 2/3 of the test tube with urine			
	- Heat upper 1/3 of test tube			
	- Observe after a while			
	For sugar :			
	- Add 8 drops of urine to 5 ml of reagent			
	- Heat the test tube, holding the test tube away from self and client			
	- Heat well until the contents boiled			
	- observe the test tube for 2 mins for a color change			
4	Enter the results in both mother's cards			
5	Give the feedback to the mother on the test findings			
6	Discard urine appropriately			

8. Conduct of health education session:

No.	Activity	Yes	No	Remarks
1	Planned health education schedule is available for each clinic session			
2.	PHM is pre prepared for the health talk			
3	Use appropriate HE material			
4	Content is relevant to the topic			
5	Correct messages given			
6	Presentation skills of PHM is satisfactory			
7	PHM assesses whether the client has increased the knowledge at the end of the session (by a feedback)			
8	Summarizes the important messages			

9. Weighing of Infants:

	Activity	**Yes**	**No**
1	Appropriate scale is available (i.e Seca Scale)		
2	Scale placed on a balanced surface		
3	It works properly (Ascertain by measuring a known weight)		
4	Who measures weight? PHM / Volunteers / Other		
5	It is kept in a well lit place, on a stable top		
6	Infant's clothes are removed prior keeping on the scale		
7	Weight is measured following correct balancing		
8	The reading is taken standing in front of the scale		
9	Weight is written on the B portion immediately after weighing		
10	inform mother regarding the nutrition status of infant		

10. Measure of length of Infants:

	Activity	**Yes**	**No**
1	Infantometer is kept on the table correctly		
2	Infant is kept on the infantometer correctly (The head is positioned to touch the head rest & the head, shoulders, buttocks and knees should touch the scale)		
3	The base is touching the infant's feet		
4	The measurement is read correctly		
5	It is written in the B portion correctly		

11. Height & weight measuring of pregnant mothers:

No.	Activity	Yes	No	Remarks
1	Check to clarify all the equipment are in order			
2	Use correct technique in taking height			
3	Use correct technique in taking weight			
4	Record readings in relevant documents			
5	Mother is provided with the feedback			
6	Inform the MOH if there are any unusual findings in the weight			
7	Accuracy of weighing scale is checked (if so, when)			

12. Immunization activities:

No.	Activity	Yes	No	Remarks
1	Separate area is prepared			
2	Emergency tray is available			
	2.1. drug list is available			
	2.2. date of expiry is available on drugs			
	2.3. instruction guide is available			
3	Check CHDR before immunization for appropriateness of the vaccination			
4	Discuss with the mother to identify any contraindications			
5	Ask for AEFI for the previous immunization			
6	Cold chain is maintained			
7	Check vaccine vials before vaccination for quality assurance			
8	Follow correct technique to draw vaccine			
9	Maintain sterility in the process of immunization			
10	Educate mothers before immunization on reporting of AEFI			
11	Keep clients 10-20 minutes to observe adverse reactions			
12	Proper record keeping (Date, batch number ect)			
13	Inform clients on next visit			
14	Maintain vaccine movement register correctly			
15	Maintain open vial policy			

13. Family planning activities:

		Yes	No	Remarks
1	Methods available in the clinic			
	Pills			
	Condoms			
	DMPA			
	IUD			
2	Entries made when issuing FP items			
3	Physical balance of FP items tallies with book balance			
4.	Adequate stocks are available			
5.	Equipment needed for insertion of at least 5 IUDs are available			
6.	Equipment are in working condition			

7.	Special bed used for IUD insertion is available in good condition			
8.	Privacy is maintained for each & every mother			
9.	Mother allowed to ask questions with regard to the FP methods			
10.	FP items are shown to mother before enroll into a method			
11.	Mothers counseled before introduced to a method			
12	Use flash cards during discussions			
13	Issues a client record			
14	Clinic record is correctly maintained			

Attitudes of staff towards clients Positive Negative

Comments……
……
……..

14. Disposal of waste and cleaning:

a. Adequate number of safety boxes are available Yes ☐ No ☐
b. Waste disposal is hygienic Yes ☐ No ☐
c. At the end of the clinic, the equipment and the clinic is cleaned
Yes ☐ No ☐
d. FP Clinic records are correctly maintained Yes ☐ No ☐

15. Record keeping:

a. The clinic attendance register (H 517) is correctly maintained Yes ☐ No ☐
b. H 518 is correctly filled Yes ☐ No ☐
c. Activities are done according to the duty roster Yes ☐ No ☐
d. Clinic returns are correctly filled and sent to relevant institutes Yes ☐ No ☐

16. Comments on record keeping :

……
……
……
……
……..

17. Review clinic performance based on clinic summary and H 527 for the last quarter:

No. of clinic sessions held during the last quarter :- .....

No. of clinic sessions conducted by:							
MOH/AMOH		PHNS		PHM		Other	

Average attendance of clinic per session:							
Pregnant Mothers		Infants		1-5 yr Old		FP Clients	

No. of FP new acceptors recruited :- .....
No. of DMPA new acceptors :- .....
No. of IUCD inserted :- .....
No. of infants weighed in the clinic :- .....

Blood drawn for,
VDRL testing : Performed / Not Performed
Hb testing : Performed / Not Performed
Blood Grouping and DT : Performed / Not Performed

18. Suggestions of the staff to provide better clinic service :-

……
……

19. Details on last clinic supervision:

Date of previous supervision : ……..…..
Designation of the supervising officer : ……..……..…
Recommendations are carried out : Yes / No
Details on recommendations not materialized : ……..……

20. Recommendations on current supervision:

Strong points	Weak points
1……..	1……..
2. ……... .	2. ……...
3. ……..……	3. ……..……
4… ……..……	4… ……..……
5 ……..……..	5 ……..……..

Next date of clinic supervision : …….

21. Action plan to improve the clinic services based on weak points identified:

Problems identified	Underlying reasons	Proposed solutions	Responsibility	Time frame

Date ……..

Signature of supervising officer .....

Designation ……..…

Chapter 29

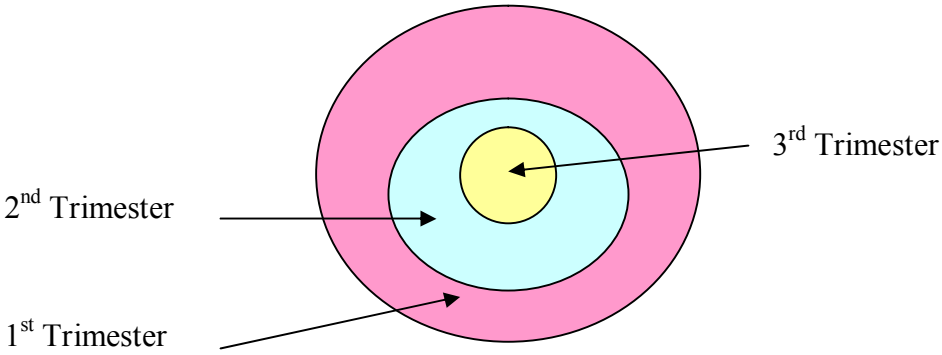
PLANNING OF DOMICILIARY CARE FOR PREGNANT AND POST PARTUM WOMEN

Items needed:

- 01 Bristol board
- Pins with red, blue, yellow and green heads

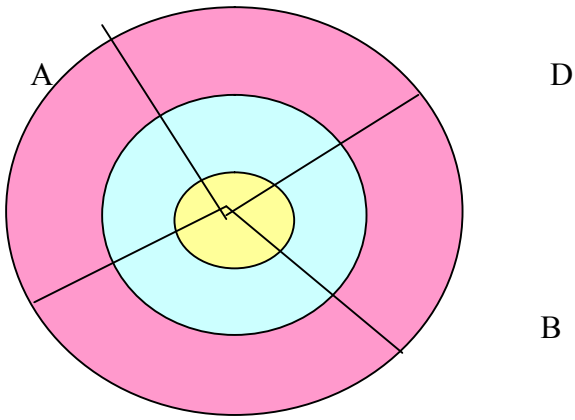
Method:

Draw three circles on the Bristol board as follows.



Each trimester of the pregnancy is reflected by the three areas of these circles.

Divide circles according to the same way that you have divided your villages for the eligible couple register.



A- Village A
B- Village B
C- Village C
D- Village D

Mark pregnant women under your care in order to the villages & the trimesters by using pins on the circles.

Blue pin – 1st Trimester pregnancies

Red pin - Mothers with risk conditions

Green pin – Mothers without risk conditions (except 1st pregnancy)

This chart should be renewed in every Saturday.

E.g.: Mothers may reach to second trimester from first trimester (By bringing the pin to the relevant circle)

Identifying risk factors (Put red pin while removing the green pin)

Either two red and blue pins or one pin with both red and blue heads should be used for 1st pregnancy with risk conditions.

This chart can be also used in planning of postpartum care.

The areas for 3rd trimester, 2nd trimester and 1st trimester can be used as areas for first 10 days, day 11-28 & 28 – 42 days respectively.

This chart gives information on pregnant and postpartum mothers under your care at a glance. This can be used in arranging home visits as well

LIST OF REFERENCES

1. Antenatal care: Routine care for the healthy pregnant women, National Collaborating Centre for Women's and Children's health Commissioned by the National Institute for Clinical Excellence, October 2003
2. Conceptual framework for the Elimination of Paediatric HIV and Congenital syphilis in Asia Pacific 2011-2015, UNICEF East Asia and Pacific Regional Office, August 2011
3. Diabetes in Pregnancy, Management of diabetes and its complications from preconception to the postnatal period, National Collaborating Centre for Women's and Children's health Commissioned by the National Institute for Clinical Excellence, March 2008
4. Guidelines for the Management of HIV infection in Sri Lanka, National STD/AIDS Control programme, Ministry of Health, Sri Lanka, 2008
5. IHE Report: Determinants and Prevention of Low Birth weight: A Synopsis of the Evidence, Institute of health economics, Canada, 2008
6. Integrated Management of Pregnancy and Child Birth: Pregnancy, Child Birth, Postpartum and Newborn care: guide for provision of essential services by WHO, Adopted for Sri Lanka, 2009
7. Integrated Management of Pregnancy and Child Birth: Managing complications in pregnancy and Childbirth: A guide for midwives and doctors, WHO, 2000
8. Low Birth weight- Nutrition policy discussion paper No. 18, UN ACC sub-committee on Nutrition, 2000
9. Maternal Mortality Decline: The Sri Lankan Experience, Family Health Bureau, 2003
10. Obstetrics by Ten Teachers, Edited by T L T Lewis and G V P Chamberlain, fifteenth edition 1990
11. Packages of Interventions for family planning, Safe abortion care, Maternal , Newborn and Child Health, WHO, 2010
12. Physical Status: the use & Interpretation of Anthropology, WHO, TRS 854
13. Postnatal Care: A guide to field Staff, Family Health Bureau, 2007
14. Regional strategy for the Elimination of Congenital syphilis, WHO, Regional Office for South-East Asia, 2009
15. Report: The 7th Asia- Pacific United Nations Prevention of Mother- to – Child Transmission Task Force Meeting, 2009
16. Strategy for the Elimination of Congenital Syphilis in Sri Lanka, National STD/AIDS Control programme, Ministry of Health, Sri Lanka,2009
17. The Pregnancy Book, NHS,2001
18. WHO Antenatal care Randomized Trail: manual for the Implementation of the New Model, WHO, 2002
19. WHO recommendations for the Prevention of Postpartum Hemorrhage, WHO 2007

Circulars related to Maternal and newborn care

1. Circular letter dated 14th December 2010 by DGHS on provision of Influenza A H1N1 vaccine for pregnant women
2. General circular no. 01-28/2010 on 25th August 2010 by DGHS on micronutrient supplementation and anti-helminthic treatment in maternal and school health programmes
3. General circular No 01-15/2010 dated 19th April 2010 on by DGHS on promotion of branded milk powder within health institutions and to the staff of ministry of health care and nutrition
4. Letter No. FHB/MCU/ Gen on 10th November 2009 signed by D/MCH on recommendations for basic investigations package for pregnant mothers
5. General circular no 01-14/2008 on guidelines for malaria chemotherapy and the management of patients with malaria
6. General circular No 01-10/2007 dated 02nd March 2007 by DGHS on formats on newborn
7. Circular on guidelines on immunization against tetanus by DGHS
8. General circular No 02-20/2007 dated 15th February 2007 by DDG/PHS on revised MCH management information system
9. General circular No 01-26/2006 by DGHS on duty list of field public health midwives
10. Public administration circular no 03/2006 dated 2nd March 2006 issued by Secretary, Ministry of Public administration and Home affairs on paternity Leave – Chapter XII in E Code
11. General circular No 01—5/2006 on dated 03rd January 2006 by DGHS on surveillance on perinatal mortality
12. Public administration circular no 4/2005 dated 3rd February 2005 issued by Secretary, Ministry of Public administration and home affairs on Maternity Leave – Chapter XII in E Code
13. General circular No 01-25/2004 dated 14th October 2004 by DGHS on antenatal clinic care
14. General circular No 01-27/2004 on 14th October 2004 by DGHS on streamline the Postnatal care
15. Internal circular FHB 1/2004 dated 04th August 2004 by D/MCH on pregnancy record
16. General circular (revised) 1945 on 16th June 2004 by DGHS on national plan for prevention and control of anaemia among pregnant women